FIRM-SPECIFIC ATTRIBUTES AND MNE LOCATION CHOICES: FINANCIAL AND PROFESSIONAL SERVICE FDI TO NEW YORK AND LONDON

ESRC Centre for Business Research, University of Cambridge
Working Paper No. 223

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March 2002

Abstract

In this paper, we sought to extend the theory of the location determinants of MNEs by challenging one of the fundamental assumptions underlying it, namely that location advantages are absolutes whose values are identical for different MNEs. We explicitly acknowledge the relative value of location advantages for individual MNEs and search for the firm-specific attributes affecting this variation.

The empirical testing is based on an analysis of 673 financial and professional service MNEs that entered New York and London business clusters via M&As during the last two decades.

The findings confirm that the value of particular location advantages varies for MNEs with different attributes, and that it is the interaction between location and firm-specific attributes, rather than each of these independently, that affects location choices. Firms' previous experience in a country, the geographic scope of their acquisition activity, and their size were found to be particularly influential attributes.

FDI theory states that the location decisions of Multinational Enterprises (MNEs) are determined by the relative location advantages of particular countries for certain activities. Locations abundant in particular resources will attract MNEs whose activities make intensive use of these resources (Dunning 1993). Implicit in these formulations is the assumption that particular location advantages have the same value for all MNEs, that is, within an industry, firms value the abundance of particular resources similarly and firms benefit from them to the same degree.

In this paper we seek to challenge this assumption. We argue that the characteristics of the investing firms affect their evaluation, and their ability to take advantage, of various location advantages. As these characteristics vary across firms, specific location advantages have different values for them. Hence the factors affecting location choices are not identical across MNEs and do not exist in isolation from the characteristics of the investing firms. We thus introduce a notion of location advantages that are not absolute but rather vary across firms, in line with their firm-specific characteristics. For example, market size is often regarded as a major location advantage that enables firms to benefit from advantages of large size and reap the benefits of scale advantages (Dunning 1993). While this characteristic of markets is a highly valuable advantage for large firms, producing and selling products that enable standardisation and mass production, it may have limited, if any, value for small, specialised firms, whose core competitive advantage lies in a highly specialised technology, and may involve large amounts of adaptation to the specific needs of individual customers or small groups of customers. While market size is likely to have significant effect on the location choices of the former, it may have no explanatory power for the location choices of the latter. These examples illustrate the limitations of conceptualising location advantages in isolation, i.e. with no relation to the characteristics of the investing firms.

We focus on one specific type of location – localised clusters and the agglomeration externalities that may emerge as a result of the geographic proximity of firms engaged in similar activities. In line

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with the argument outlined above, we maintain that various firm-specific attributes determine the ability of firms to realize the benefit from collective dynamics (Dupuy and Gilly 1999), and hence the value of and benefits from cluster participation. This explains why there is nonetheless considerable variation in the location choices of individual firms even though there is a tendency for economic activity within an industry to cluster in small geographic areas (Shaver and Flyer 2000).

Determining the extent to which firm-attributes affect the value of certain location advantages, and identifying those attributes that are most influential, has important implications for MNEs, policy makers and further theory development. For MNEs, it implies a need to evaluate certain location advantages with explicit reference to their own attributes, and make their location choices individually, rather than following the 'norm' in their industry. There is a strong idiosyncratic element in location choices, and location decisions must be undertaken based on a careful examination of the firm's specific attributes in relation to specific location advantages rather then viewing the latter on their own.

Policy makers who seek to affect the location patterns of foreign firms within the areas under their jurisdiction would also benefit greatly by explicitly acknowledging the heterogeneity among firms in terms of the attraction of particular locations. Policies designed to attract all firms within an industry may not yield the most desirable outcomes, as the benefits that particular locations provide may differ among firms. Since the advantages provided by particular locations differ for MNEs with different attributes, different kinds of incentives, or the same incentives to a different degree, might be required in order to influence their location decisions.

For researchers, the findings will signify a departure from the traditional conceptualisation of location advantages as existing in isolation from the advantages of firms to an emphasis on a link between firm and location advantages. Examining location choices in

light of the heterogeneity among firms may thus provide a useful point of departure for the development of a theory of MNE location choices, which is sensitive to differences among individual MNEs.

In the next section, we review the state of extant research regarding factors affecting the location choices of MNEs and position our study vis-à-vis the few attempts made to incorporate firm-specific advantages in location models. We then identify the firm-specific attributes that are likely to affect the location choices of MNEs and advance hypotheses on the nature and direction of their impact. These hypotheses are put forward for empirical test in the following section. The analysis is based on data with respect to 673 financial and professional service[1] MNEs who entered New York or London via Mergers and Acquisitions (M&As) during the last two decades. The paper concludes by discussing the implications of the findings for the theory of the location of MNEs and by suggesting directions in which future research may make further progress.

Theory and Hypotheses

The assumption of the heterogeneity among firms - in terms of the resources and assets they control (Barney 1991) and their strategic action to take advantage of these resources (Porter 1985) – is underlies strategic management theory. Various schools of thought within this theory have sought to understand the nature and sources of firms' heterogeneity and to draw its implications for competitive performance[2].

Similar conceptualisation of MNEs, however, particularly with reference to their location decisions, has not become part of mainstream FDI theory. With the notable exceptions of Kravis and Lipsey (1982), and Shaver and Flyer (2000), who examined whether there are some relationships between the location choices of MNEs and their firm-specific attributes, the heterogeneity among firms as a factor affecting their evaluation of location advantages, and the

benefits they may derive from them, has not been acknowledged. Most previous analyses assume, implicitly or explicitly, that all MNEs within an industry have identical resource requirements and search for the same complementary resources in their external environment, i.e., they have no individual preferences in terms of their location choices, beyond those related to industrial affiliation.

The tendency to rely on industry-, rather than firm-level data, to test the determinants of the location choices of MNEs (see Jun and Singh 1996, Yamori 1998 for a representative approach) has further obscured the differences among MNEs within an industry in this regard. These models were constructed to identify the factors affecting the location decisions of MNEs and typically include a set of country (or part of countries) characteristics that are hypothesised to affect the choice of MNEs between potential locations (Dunning 1993). Their models do not take account of possible influences of firm-specific attributes on locational choice.

The argument underlying this paper is that since firms differ in terms of their competencies, the assets they control, their strategic objectives and the way they organise their international activity, particular location advantages have different value for them. We put the heterogeneity among firms at the centre of the analysis and search for the firm-specific attributes that may affect the value of specific location advantages for them, and hence their location choices. We thus eliminate the traditional distinction between location and firm advantages that had underlain, explicitly or implicitly, the theories of international business, and introduce a different notion that emphasises the interaction between the two as the factor determining the location choices of MNEs.

We build to some extent on the work of Shaver and Flyer (2000) and Kravis and Lipsey (1982), and advance its arguments in several directions. Theoretically, our conceptualisation of the firms' attributes that affect their location choices is broader than these two studies. Shaver and Flyer (2000) refer to the strength of a firm's technological

competence as the major factor affecting the net benefits it receives from agglomeration externalities and hence their attraction to clusters. Kravis and Lipsey (1982) assign the selection of country locations primarily to the size of firms and the composition of their production factors. We broaden this conceptualisation and argue that a whole range of firm attributes affects their location choices. We set out to identify these attributes and the nature of the association between them and location advantages. We thus propose a way of incorporating differences among firms directly and systematically into a model of location choices, and to analyse the ways by which the characteristics of MNEs interact with the characteristics of locations in shaping the location choices of MNEs.

Methodologically, these two studies used industries, rather than firms, as the unit of analysis. This has fundamental implications for what is being measured and tested. The aggregation of all firms within an industry is a major impediment when attempting to uncover the firm-specific attributes that affect location choices because the variation across firms within an industry is the major issue of interest. By using firms as the unit of analysis we are able to include in the analysis firm characteristics that aggregated industry data naturally do not possess, and to illuminate the variation across firms within an industry.

We limit the analysis to one kind of location advantages – agglomeration externalities emerging from cluster participation[3]. We argue that the view of location advantages as isolated from the characteristics of firms is particularly inadequate with reference to clusters. The advantages that such a context provides are created by the processes taking place between firms located in geographic proximity to each other (Scott 1998), rather than by the relative abundance of particular resources that are external to firms. Under such circumstances, the characteristics of the firms themselves create the advantages of a location and the two cannot be seen in isolation.
In the rest of this section we identify the firm-specific attributes that are likely to affect the value of cluster location for firms, and advance hypotheses as to the nature and direction of such impact.

Size

The impact of the size of firms on their strategic behaviour and organisational structure is well recognised in strategic management (Chen and Hambrick 1995, Dean et al 1998) and organisation literature (Hannan and Freeman 1977). In a seminal paper, Hannan and Freeman (1977) proposed the idea that organisations of different sizes use different strategies and structure. Therefore, though engaged in similar activities, large and small organisations depend on different mixes of resources. The strategic management literature has also acknowledged behavioural differences between small and large firms, and the different means by which they build competitive advantage. In international business conceptualisations the size of MNEs is regarded as a major factor affecting the nature of their international activity and their ability to own and control resources on a global level (Dunning 1993).

Size differences are hypothesised here to affect also the location choices of MNEs, via their impact on the needs of firms for complementary resources. A major reason for cluster location is the search by firms for complementary resources that they do not possess (Scott 1998). Such resources are often more abundant in and around clusters than elsewhere, and geographic proximity reduces the costs associated with accessing them. Large firms tend to be more self-sufficient and less dependent on external resources than their smaller counterparts and better able to internalise certain activities via both backward and forward vertical integration, and hence might have less need for taking part in cluster dynamics.

Several studies have shown that smaller firms are significantly more likely to agglomerate than larger ones (Rauch 1993a, Shaver and Flyer 2000). Shaver and Flyer (2000) explain this finding by the tendency of large establishments to contribute more, and have less to gain, from agglomeration externalities. Although formulated with no specific spatial reference, the evidence provided by Chen and Chen (1998) also supports this argument. They found that small firms value the opportunity to establish network linkages in host countries to a

greater degree than larger firms. Small firms use networking to compensate for the lack of internal resources, while larger firms obtain many of these resources internally[4]. Formally:

H1: The size of firms significantly affects their location choices, with larger firms more likely to locate away from clusters than smaller ones, ceteris paribus.

Geographic scope
The geographic scope of the activities of firms is likely to affect their need for, and benefit from cluster participation. The more firms produce output to be sold outside the cluster, the greater are their needs for sources of knowledge that may not be available locally (Saxenian, 1994, Scott 1998). Under such circumstances, cluster participation may not provide an effective means by which to gain knowledge needed for operations that take place beyond the boundaries of the cluster, and firms whose operations are geared towards markets external to the cluster may gain fewer benefits from taking part in local dynamics. Formally:

H2: The geographic scope of firms significantly affects their location choices, with firms whose operations are geared towards markets external to the cluster more likely to locate away from clusters than those geared towards the cluster, ceteris paribus.

Innovation
Recent conceptualisations of clusters have strongly emphasised the collective learning opportunities created via the interaction with other firms in the cluster as a major drive of cluster location. They have also stressed the possibilities that such location opens up for learning from competitors via spillovers, through labour mobility, leakage of information and know-how, or by imitation, as a way for firms to develop and upgrade their own technological competencies (e.g., Scott 1998, Keeble and Wilkinson 2000). Such learning from other

firms may act as a (partial) substitute for the firm's own research activities. A firm may thus benefit from being present in a location where its competitors are engaged in knowledge creation activities without fully paying for this investment (Rauch 1993a, 1993b).

However, such benefits are naturally uneven for leading and lagging firms. Firms possessing the best technologies are likely to benefit less from access to competitors' technological knowledge, while firms with weaker technological capabilities will probably benefit more from the proximity to other firms. This would enable them access to competitors' sources of knowledge and learning that are superior to those they possess. Hence, firms possessing the most advanced technological capabilities may have incentives to locate away from clusters, to protect their core technologies from dissemination to other firms.

This explains why, while there is a general tendency for innovative activities to cluster geographically (Audretsch and Feldman 1996), the dominant firms in their industries sometime locate away from clusters. For example, Microsoft is located in Seattle and not in Silicon Valley; George Lucas, Hollywood's richest film maker, is located near San Francisco and not in Hollywood (The Economist 1999). More systematic evidence for such location preferences, whereby weaker firms exhibit greater tendency for cluster location than their competitors who possess stronger technological capabilities, was shown by a number of studies (Rauch 1993a, Suarez-Villa and Walrod 1997, Gersbach and Schmutzler 1999, Shaver and Flyer 2000, Chung 2001a). These studies found a significant link between the strength of firms' technological capabilities and their preferences for cluster location. Firms possessing the best technologies often locate away from clusters, as they are likely to benefit less from access to competitors' technological knowledge and have more to lose by the dissemination of their proprietary technology to competitors in the near locality. By contrast, firms with weaker technological capabilities benefit more

from the proximity to other firms, as it enables them access to competitors' sources of knowledge and learning. Formally:

H3: The strength of the innovative capabilities of firms significantly affect their location choices, with firms possessing strong innovative capabilities more likely to locate away from clusters than firms with weaker innovative capabilities, ceteris paribus.

Length of Operation

Firms investing in foreign countries have a strong incentive to locate in proximity to other firms, as a way to reduce the costs of information search in a foreign environment (Mariotti and Piscitello, 1995, Nachum and Keeble 2001). Newly established foreign affiliates are likely to confront higher information costs, a result of lack of knowledge of how to run business operations in an unfamiliar setting and of limited ability to forecast the economic events in a foreign country. However, as foreign affiliates become more established in the foreign environment, they may have less need for locating in proximity to other firms as a way to overcome their lack of local knowledge and unfamiliarity with local norms. Formally:

H4: The length of operation in a foreign country significantly affects location choices, with new entrants more likely to locate in clusters than long established operations, ceteris paribus.

Experience in a foreign country

The impact of previous experience in foreign operation on the subsequent behaviour of MNEs has been strongly acknowledged in international business and management theory. Studies have shown that previous experience is an important determinant of market entry mode (Chang and Rosenzweig 2001), and it also affects the nature and tempo of learning from acquisitions (Vermeulum and Barkema 2001).

We hypothesize that previous experience in a foreign country would also affect MNE's location choices. Such experience provides firms with familiarity with local conditions (Shaver et al 1997) and is likely to diminish their need for cluster participation as a mean to acquire local knowledge, and diminish the costs associated with its acquisition. First time entry is likely to benefit more from cluster proximity as a way to reduce these costs. Therefore we would expect that firms that had previously been operating in a given geographic area would exhibit fewer tendencies for cluster location. Formally:

H5: Previous experience in a country significantly affects location choices, with experienced MNEs less likely to locate in clusters than recently established MNEs, ceteris paribus.

Cultural distance between the home and host countries
The cultural distance between the home and host countries has been shown to affect various aspects of MNE activity. The larger the distance, the more difficult the acquisition of local knowledge and the understanding of local norms and traditions is likely to be. A large number of studies have shown how this affects the entry mode of MNEs and their subsequent behaviour in foreign countries (see Shenkar 2001 for a recent critical view).

We expect that the cultural distance between the home and the host countries would significantly affect the need of firms for cluster participation and the benefits they may derive from it. Firms from countries at different cultural distances would vary in their need for complementary cluster resources and in their ability to access them. However, the direction of this impact is hard to hypothesise a-priori. There are both theoretical reasons and empirical evidence that suggest that the direction of the impact could go both ways. On the one hand, firms from culturally remote countries have greater need to gain knowledge on the host countries, and may use cluster location to eliminate these difficulties. They may also have greater need for local complementary resources, as their own resources, or those that can be

transferred internally within the MNEs, may be less adequate for the foreign environment. At the same time, however, greater cultural distance between the home and host countries may increase the difficulties of integrating in the cluster and taking active part in the local dynamics of collective learning and shared experiences that determine the benefits of cluster location.

The findings of studies designed to test for this link empirically are also inconclusive. Wymbs (2001) has shown that cultural distance is a significant factor affecting the need of foreign firms investing in New York City to locate in proximity to the centre of knowledge in their industries. Firms originating from countries that are culturally distant from the US were found to be more likely to locate in geographic proximity to an established knowledge centre, to overcome their difficulties in acquiring local knowledge and to compensate for cultural impediments associated with the transfer of tacit knowledge. By contrast, Chung (2001a) found that cultural distance is negatively related to location proximity of MNEs in the US. In his study Japanese MNEs chose to locate significantly further away from the centre of activity in the relevant industries. A number of studies have documented the tendency by Japanese firms to locate away from clusters of economic activity, and have attributed it largely to cultural differences between the US and Japan that impede the ability of Japanese firms to successfully take part in local dynamics (Friedman, Gerlowski and Silberman 1992). Formally:

H6: The cultural distance between the home and host countries significantly affects location choices, but the direction of the impact cannot be predicted a-priori.

Reliance on local resources
When cluster location is driven by supply factors, the entire rationale for geographic concentration is based on proximity to factors of production of various kinds. This conceptualisation has its origin in Marshall's formulations (Marshall 1920) and has been underlying, implicitly or explicitly, cluster discussions since then (e.g., Audretsch

and Fledman 1996). Over the years, and in response to the changing value of production factors, the relevant factors driving cluster formation have changed. The tangible, immobile resources acknowledged by Marshall (e.g., steel in Sheffield) were replaced by focus on intangible resources, notably knowledge of various kinds (e.g., Keeble and Wilkinson 2000, Wymbs 2001) and factors of production were relegated to a somewhat secondary role.

There is also a broad recognition that firms differ in terms of their reliance on external sources. This is largely related to the nature of their products and the organisation of the production (notably the extent of vertical integration).

We hypothesise that firms with high dependency on inputs provided externally, which reside within the cluster, are likely to benefit from central cluster location to a greater degree than firms who are more vertically integrated and hence rely on external sources to a lesser degree. The latter will have less need to locate in clusters and would benefit from such location to a lesser extent. Formally:

H7: The extent of reliance on local resources significantly affects location choices, with heavy reliance on local resources favouring cluster location, ceteris paribus.

Differentiation
Product differentiation is likely to highly influence the advantages associated with spillovers in localised clusters. The underlying advantages of clusters are based on the assumption that firms share some resources and knowledge, and hence can benefit collectively from the availability of these in the near locality. Differentiation, however, changes this logic in two contradicting directions. On the one hand, the more differentiated are the products, the more firms are able to appropriate the competitive benefits of their investments in innovation and new product development (De Bondt, Slaets and Cassiman 1992), without it being mitigated by dissemination to other cluster members. The leakage of their proprietary knowledge does not

inhibit as much the attainment of competitive advantage as it would with undifferentiated goods. They may also enjoy less fierce competition for localised resources, as they seek distinct functions in which they hold competitive advantage (Baum and Mezias 1992, Baum and Haveman 1997). Thus, the more a firm succeeds in differentiating itself, the less it would lose by geographic proximity to other firms, and the less it will have incentives to locate away from clusters as a way to protect its proprietary knowledge.

At the same time, however, it will also gain fewer benefits from cluster location. Furthermore, the value and use of other firms' knowledge is likely to diminish in relation to the extent of differentiation. High differentiation is likely to eliminate the gains in received knowledge and spillovers from other firms, thus eliminating the potential advantages of cluster participation. Indeed, De Bondt, Slaets and Cassiman (1992) show that while product differentiation introduces striking differences in the effects of spillovers, the net balance is idiosyncratic and varies considerably across firms. Formally:

H8: Differentiation significantly affects location choices, but the direction of the impact cannot be predicted a-priori

MNEs organisational structure
The organisational structure of the MNEs, and the degree of centralised managerial control the parent exercises over affiliates' activities, are likely to affect the benefit of affiliates and the MNE as a whole from cluster location and hence the location choices of affiliates. The directions of such benefits, however, are hard to predict a-priori. On the one hand, the more an affiliate is integrated – in terms of its decision making and production – with the parent and the MNE as a whole, the less open it is likely to be towards its immediate environment, and the more limited will be its need for local cluster interaction. When affiliates enjoy more autonomy and implement entire production functions locally, they are likely to be more integrated in the locality that hosts them and to benefit more from

external cluster linkages (Dupuy and Gilly 1999, Birkinshaw and Hood 2000). Nachum and Keeble (2000) have shown that the more affiliates are controlled by the headquarters and geared towards the headquarters for decision making and the provision of different kinds of resources, the less they tend to develop local cluster linkages and the less the latter affect their activities. This line of argument suggests that there will be inverse relationships between the strength of the internal MNE linkages and the need by foreign affiliates to locate in proximity to other firms.

However, the benefits of agglomeration for the MNE may depend precisely on the intensity of intra-firm spillovers and linkages. Stronger intra-firm communication makes agglomeration more likely (Gersbach and Schmutzler 1999), leading to a negative relationship between the intensity of internal linkages and cluster location. Such dependency arises because the benefits of agglomeration for the rest of the organisation increase when an affiliate is able to transfer the knowledge gained via cluster interaction to other parts of the MNE. Hence, there is likely to be strong internal pressure on affiliates to locate in clusters, and to transfer what is often a common knowledge in the locality that hosts them to the headquarters and the rest of the MNE[5]. This line of argument leads one to expect that affiliates with stronger internal linkages with the parent and the rest of the MNE would benefit from such location to a greater degree and hence are more likely to locate in clusters.

H9: The organisational structure of MNEs significantly affects location choices, but the direction of the impact cannot be predicted a-priori.

Research Scope

The research scope was based on a combination of industrial, geographical and entry mode criteria. To control for industry effects, we limited the scope of the study to financial and professional service industries. Most previous studies of location choices have focused on manufacturing MNEs (e.g., Head et al 1995, Shaver and Flyer 2000, Kravis and Lipsey 1982). There are a number of reasons to expect that their findings may not hold for financial and professional service industries. First, the non-tradability of these service industries and the high tailor-made element in the production of output distinguish their location decisions from those of manufacturing firms. Thus, while the location of manufacturing firms are often driven primarily by the need for proximity to factors of production (Winsted and Patterson 1998), using trade to access their customers, the location of the service firms studied here is typically determined by the location of their clients, in addition to the location of factors of production (Pitt et al. 1999). Second, somewhat different types of knowledge provide the basis for the competitive advantages of manufacturing and the knowledge-based service firms studied here, and these are associated with different types of dissemination and dissipation of knowledge in clusters. Value creation in financial and professional service industries is based primarily on the manipulation of knowledge and information. The idiosyncratic nature of this knowledge often eliminates the scope for dissemination to competitors, and the threat associated with proximity to competitors. Financial and professional service firms may thus be less concerned about competitors locating in proximity. By contrast, the competitive advantages of manufacturing firms are based to a greater degree on standardised designs and processes, where the potential for imitation and knowledge dissemination are larger.

Determining the adequate industrial level of aggregation to capture the agglomeration effects arising from the interaction with other firms is a critical issue in a study of this kind (Moomaw, 1998). A narrow definition of an industry may underestimate the effect of the

economies arising from the geographic concentration of related activities, and a broad definition may not be meaningful for analysis of agglomeration externalities, as it will group together firms that do not interact with each other. We have selected the 4-digits SIC Codes as the adequate level of aggregation. Several empirical studies of agglomeration used this level of aggregation, particularly with reference to MNEs (e.g., Head et al 1995, Nachum 2000, Shaver and Flyer 2000) and found it to be a meaningful level of industrial aggregation for the purpose of measurement of agglomeration processes.

Geographically, the research was confined to MNEs who established operations in London and New York. These cities receive large amounts of total FDI flowing to their countries, particularly in financial and professional service industries. New York City receives about 30% and 15% of total US FDI in professional and financial services respectively (Chadwin 1998). London hosts the entire list of the top financial and professional service MNEs investing in the UK (Nachum 2000). With such amounts of foreign activity concentrating in these cities, it can be argued that cities, rather than countries as a whole, are the real driving force of FDI in these activities (Sassen 2000, 1991) and deserve specific research attention.

Furthermore, certain characteristics of FDI to New York and London may inhibit generalisation of knowledge generated elsewhere, and hence require specific research attention. London and New York, along with few other global cities, occupy a special position within the international economic system (Sassen 1991, 2000, Fainstein, Gordon and Harlue 1992). They host a disproportionate share of MNE headquarters (Lyon and Salmon 1995), and are the key strategic sites for the production of the most advanced professional and financial services. The few attempts that have been made to examine how these specific characteristics of global cities affect the location decisions of MNEs (Nachum and Keeble 2000, Wymbs 2000, 2001) indeed illustrate the limitations of knowledge generated in different geographic contexts to global cities. It shows that the drivers of

location in this context differ from those elsewhere, suggesting a need to address the specific attributes of this geographic context.

We rely on official definitions of London and New York, and take a very broad definition of both cities, to enable us to differentiate between firms at different geographic distances from the centres of activity in their industries. When analysing London we begin with the area bounded by the Green Belt, known as 'Greater London', which covers 610 square miles. Similarly, for New York City we begin with the area known as 'the core region' or 'New York region', which covers about 600 square miles (Fainstein, Gordon and Harlue 1992). Within these boundaries, we further divide the cities into districts, based on postal code areas. Official distinctions divide New York City and Greater London into 46 and 44 postal code areas respectively.

The adequate geographic level for the analysis of location choices should be determined by the areas of theoretical interest, for example, if the interest is in country level location attributes (e.g., legal and political system, language), then countries would be the appropriate unit of analysis. Our interest here is in the processes of local interaction between firms that create the agglomeration externalities for the firms involved. Those arguably occur in a very small geographic areas. Indeed, the agglomeration benefits of many of the industries studied here are such that they often tend to cluster in small districts within a city, making the city district a meaningful unit for the analysis of agglomeration economies. The location patterns of firms in these industries in global cities, and their persistence over decades and even centuries, illustrate that the processes taking place in such tight geographic areas are indeed determining the location choices of firms. For example, about 80% of film producers and distributors and related services operating in London cluster in an area of about one square mile (Nachum and Keeble 2000). Likewise, the overwhelming majority of firms in financial services and a number of support services operating in New York and London cluster in the Manhattan area of New York City and the City of London

respectively (Sassen 1991). Previous studies found evidence that small districts within cities are important spatial units that affect the location decision of foreign firms and the agglomeration benefits they draw from them (Nachum and Keeble 2000, Wymbs 2001).

By referring to such small geographic units, we are able to examine cluster processes at levels that were previously ignored by most studies that tested the agglomeration effect on the location of MNEs, by using either whole countries (Wheeler and Mody 1992, Barunerhjelm and Svensson 1996) or states within them (Nachum 2000, Shaver and Flyer 2000). Such geographic levels are highly aggregated and may not capture fully the processes of interaction among firms that often occur at geographic levels far smaller than a country, or even a state[6]. Since our interest is precisely in these processes, this geographic level is the appropriate level for our testing.

The scope of the study was confined to entry via M&As that involve a complete transfer of ownership. The location decisions of firms entering via M&As naturally differ from those of firms entering via greenfield, since the latter require explicit location decisions, while the location of an acquisition is predetermined by the location of the acquired firms. For this reason, this entry mode is often excluded from analyses of location determinants of MNEs (e.g., Shaver and Flyer 2000). Such focus on greenfield investment, however, applies only to small shares of FDI. M&As have become the dominant mode of cross border expansion, accounting in 1999 for about 85% of total world FDI. In the service industries studied here it reached nearly 100% (UNCTAD 2000). With such a proportion of FDI undertaken via M&As, analyses based on greenfield investment, although having obvious theoretical appeal, are only valid with respect to small shares of FDI. There is an important need to examine the location determinants of investment via M&As, and to see the extent to which they conform to the predictions of existing theories, which are typically based on greenfield investment. Blonigen (1997) has stressed the different nature of FDI associated with these two entry

modes and the inability to generalize knowledge obtained from one of them and apply it to the other.

Furthermore, we argue that the choice of the particular target for acquisition is influenced, among other things, by its location. Hence the location of MNEs entering via M&As involves specific and active location decisions, and cannot be taken as if it is fully determined by the location of the target firms. This argument is consistent with Baum and Usher (2000) who found that acquiring firms seek to gain access to local information about demand, behaviour of local competitors, and feasibility of operation at particular locations, and these have strong influence on the selection of targets for acquisition.

We took a long time span for the study, covering all M&As undertaken during the last two decades. Such a time span frees the findings from a possible bias that might have been introduced by a focus on a particular point in time.

Data for the study were obtained from Worldwide Merger & Acquisitions database of Thomson Financial Securities Data. This database is the largest of its kind, providing detailed information on more than 273,000 M&As world-wide over the last two decades. From this source, we obtained the exhaustive list of all M&As in financial and professional services that involved a complete ownership transfer that took place in New York and London during the last two decades (about 2000 M&As), as well as information on the characteristics of the parties involved in the M&As. This source was supplemented by data from Disclosure Global Access, Hydra and Compustat that contain financial and various other firm-level data on corporations around the world. After excluding cases with large numbers of missing observations, we were left with 673 MNEs, of which 235 and 438 entered New York and London respectively[7]. About 40% of the firms in the sample are commercial and investment banks, 10% insurance, and 50% professional services. The national origin of the acquiring firms is overwhelmingly from developed countries, accounting for about 85% of the total. This reflects closely

the national distribution of the leading MNEs in these industries (Nachum 1999).

The Model

To test the hypotheses advanced above, we constructed a model linking distance of firms from the centre of the cluster as the dependent variable, with a set of potentially significant explanatory variables, comprising the advantages associated with cluster location and the characteristics of firms hypothesised to affect them. The model is of the general form:

$$D_i = f(CA_j; F_{ij}; C_i) + E_i$$

D – geographic distance from the centre of the cluster
CA – cluster advantages
F – firm-specific characteristics
C- control variables
E – standard error term
j – industries, j=1…n
i – firms, i =1…m

The rationale underlying the model is that firms locate at different distances from the centre of clusters because they differ in their needs for cluster interaction and in the advantages they may draw from it. These differences are in turn related to their firm-specific attributes. Distance from the centre of clusters is thus taken as an indication of the advantages that firms derive from cluster participation.

The dependent variable

Geographic distance from the centre of the cluster is measured by the distance of affiliate i from the city district that hosts the largest number of affiliates in affiliate i's major industry. The use of geographic distance as an indication of the strength of firms' linkages with other firms has many precedents in the literature. It has been

widely used in network literature (e.g., Blau 1977) as well as in organisation literature (e.g., Baum and Mezias 1992) and more recently also in international business literature (Chung 2001a). To construct this measure, we convert the location of each individual firm into longitudes and latitudes. We then calculate Euclidean distance between the location of each individual firm and the centre of activity in its industry, that is the centroid (centre point of the cluster) of the postal code area that hosts the largest number of firms in a given industry. Zero value of this measure means that the firm is located at the centre of the activity. The greater the value of the measure, the more remote is the firm from the centre of activity.

The independent variables
Cluster advantages.
Cluster advantages are operationalised by the geographic concentration of firms within an industry, that is, geographic concentration of firms is taken as an indication of the existence of agglomeration economies. Measuring agglomeration by the extent of concentration of activity in a particular geographic area is well established in the literature (e.g. Shaver and Flyer 2000, Nachum 2000, Chung and Kalnins 2001).

We applied a variation of a widely used measure of geographic concentration at the level of countries (e.g. Aw and Batra 1998) to cities, as follows:

$$GDI_j = 1 - \sum S^2_{gj}$$
where S is the share of firms based in district g in the total number of firms in industry j.

GDI thus measures the overall level of concentration in an industry. It can get any value between 0 and 1. If all firms in an industry concentrate in a single district, GDI equals zero. The higher the values of GDI the more dispersed is the industry. The GDI has the advantage that it takes account of both the number of geographic areas (districts in our case) in which an industry locates and the magnitude of activity

in each of them. We used a number of firms to calculate the GDI, rather than alternatives like sales or employment, because this data was more easily available. It is also consistent with the data used in previous studies (e.g. Shaver and Flyer 2000, Head et al 1995) and thus enhances the comparability of our findings with the findings of these studies.

Firm-specific characteristics

H1: Size. Size is typically operationalised either in terms of sales or employment. We select sales because it is not subject to dramatic layoffs that often precede a firm's acquisition.

H2: Geographic Scope. The share of activity in international markets in total activity (typically measured by sales) is commonly used to measure the geographic scope of MNE's operations (e.g., Dunning 1993). Sales data that distinguish between foreign and domestic markets were only available for a small number of observations, excluding this measure. Instead we used the ratio between home and foreign acquisitions undertaken over the last 20 years. The correlation between this measure and the sales ratio for the observations for which this data is available is .89 ($p<0.01$), enabling us to accept it as an adequate measure.

H3: Innovative Capabilities. The share of R&D investment to sales is a commonly used measure of the innovative capabilities of manufacturing firms, but may have little or no meaning for service firms. Unlike in manufacturing, innovation in services is not necessarily technological and can, and often is, realised without any direct investment in R&D. Furthermore, R&D activities in service firms are seldom carried out in a designated R&D department. Rather, they are usually diffused, and linked to projects implemented by different groups, and often involve large amounts of ad-hoc 'innovations'. Hence, measuring innovation by R&D investment, as is usually done in manufacturing, is not appropriate in services (Licht and Moch 1999, Djelall and Gallouj 1999).

The difficulty of applying manufacturing-based measures seems to be further increased in the service industries studied, where custom-made or ad-hoc innovations are often the most important innovations. Furthermore, the active participation of the clients in the production of many of these services (Hill 1977) often implies that the clients take active part in the innovation produced by the producers, what has been known as the 'co-produced innovation model' (Djelall and Gallouj 1999).

Attempts to propose more adequate measures of innovation in service industries – often based on the judgement of service firms themselves – suggest two measures. The first is based on the realisation of the need to take account of process and organisational innovation, those resulting in increased productivity of the resources employed in the production. The second is customer perception of the value of the services to them (Licht and Moch 1999, Djelall and Gallouj 1999). In line with these arguments, we operationalise innovation as follows: 1. productivity: annual growth of turnover per employee; and 2. intangible assets: goodwill value as share of total assets, a commonly used measure to capture the perception of firms by their customers.

H4: Length of Activity. Number of years since acquirers have made their initial entry into a market.

H5: Experience in a foreign country. Number of acquisitions made previously by acquirers in a market is taken as an indication of accumulated experience. This is consistent with studies examining acquisition experience, in which number of previous acquisitions is used as an indication of accumulated experience (Ingram and Baum 1997, Haleblian and Finkelstein 1999). For a number of reasons we do not use a discount factor (to capture the depreciation of the value of experience as a function of time). First, our study covers a relatively short period of time (relative to the studies where such a measure was proposed – e.g., Ingram and Baum 1997 cover about a century), eliminating the possible impact of depreciation. Second, there are suggestions that experience gained in old acquisitions is also of considerable value (Haleblian and Finkelstein 1999), and hence there is no need for discounting.

H6: Cultural distance between the home country of the acquirer and the host country. Following Kogut and Singh (1988) we calculated a composite index, based on Hofstede's indices (Hofstede 2001). The index is based on the deviation along each of the four cultural dimensions (power distance, uncertainty avoidance, masculinity and individualism) of each country from the host country (the US for New York FDI; the UK for London FDI). We correct for differences in the variances of each dimension and then calculate the arithmetic average between the four dimensions.

H7: Reliance. The ratio of costs/sales is used as an indication of the extent to which affiliates (targets) purchase external resources locally.

H8: Differentiation. The common operational measure of differentiation is advertising expenditure, which captures two important aspects of product differentiation: product branding and marketing skills (Dunning 1993). Since such data is not available for us, we follow Owen (1982), and use an alternative marketing proxy – the costs of goods sold, and selling, general and administrative expenses (as % of total costs). This is a broad measure, which captures a set of factors not directly related to promotion activities, but it provides indications of the strength of the marketing efforts undertaken by MNEs. In an analysis of inter-industry determinants of FDI, Owen (1982) found this measure to capture adequately the differentiation efforts undertaken by MNEs.

H9: MNE organisational structure. We use two operations to measure the position of the affiliates within the MNE: 1. The industrial specialisation of the affiliates (targets) via-a-vis the parent (acquirer). The assumption here is that the more remote are the affiliates are from the parents in terms of their industrial affiliation, the less control would be exercised by the parents and the more limited will be the transfer of resources of all kinds between them. This variable was coded as a dummy variable that gets the value 1 if the affiliates and the parents share the same industrial affiliation at the 4 digit level; 2 for 3-digit level; 3 for 2-digits; 1 for 1-digit and 5 when the affiliates and the parents are engaged in completely different industries. This is consistent with a number of M&As studies (e.g., Haleblian and Finkelstein 1999), in which the industrial affiliation of targets and

acquirers (at the 4-digits SIC level) is used to measure the relatedness between them[8]. 2. Taxes paid by the affiliates (the targets) (as share of sales) as an indication of the transfer of profits by the affiliates. High transfer of profits is usually associated with higher levels of control by the parents.

Control variables
We added several control variables. First, we sought to control for differences in the nationality of ownership of the acquired firm, particularly whether domestic or foreign. Since foreign and domestic firms often exhibit different location patterns (Shaver 1998, Nachum and Keeble 2001) it is important to control for differences in location that were pre-determined by the nationality of the acquired firm. This variable gets the value 1 if the firm acquired is foreign-owned, 0 otherwise.

Second, we introduced a control variable for industry affiliation (at the 4-digit level). A significant sign of this variable would imply that in addition to firm characteristics, industry characteristics also affect the benefits of agglomeration. This is consistent with the argument that levels of agglomeration tend to vary across industries, reflecting variation in agglomeration benefits across industries (Audretsch and Feldman 1996). This variation is likely to affect the benefits associated with cluster location, as the value of proximity to the centre of the cluster increases the greater the level of concentration of an industry.

Third, we also measured the level of foreign activity in an industry, as research has shown that foreign firms often seek the proximity of other foreign firms (Florida and Kenney 2000, Head et al. 1995, Nachum 2000). The level of foreign activity may thus affect the location choices of MNEs, regardless of other location advantages. We measure variation in foreign activity by the industry's share of foreign acquisitions in the total over the last two decades.

Fourth, we also controlled for the possibility that district differences (in terms of e.g., property availability and prices, transport access) affect the choice of location, and hence the distance from the centre of the cluster. We introduced a district fixed-effect specification as a dummy variable. This approach did not require identification and measurement of district attributes that may have affected location choices in order to control for their effect. This overcomes the problem that the district characteristics that can attract (or deter) investment are manifold and often difficult to assess and measure. The fixed-effect approach is consistent with Head et al 1995 and Shaver and Flyer 2000.

Finally, we introduced a dummy variable to distinguish between London and New York, to enable us to capture possibly significant differences between these two cities.

Data are measured at the time of the acquisition, because the characteristics of the target and the acquirer at this time affect their location choices. Given the limited tendency of firms to re-locate (Hay 1976), their initial location choices are likely to determine their future location. Data refer to the characteristics of the acquirers, the MNEs entering foreign markets undertaking the location decisions in which we are interested.

E_i is a firm-specific random disturbance that is attributable to errors associated with inadequate assessment by firms of the value of cluster interaction for them and possibly also distortions resulting from inertia of location patterns and the limited tendency by firms to re-locate. It also takes account of unobservable firm characteristics that affect the distance of firms from the centre of the cluster.

Table 1 summarises the explanatory variables included in the model, their operation measures, descriptive statistics and correlation coefficients. Overall the coefficients are low, implying low level of correlation.

Independent sample t-tests suggested that the missing value patterns are not random, and they were estimated from available observations, by testing a model based on all observations for which there were no missing values, and using it to estimate the missing values.

Model Results and Discussion

The model constructed above was estimated by mean of linear regression analysis (Table 2). Although the correlation coefficients in table 1 were relatively small in most cases, it does not ensure a lack of multicollinearity between the independent variables (Hair et al 1995). Hence, we calculated the variance inflation factor (VIF), which addresses the degree to which each independent variable is explained by the other independent variables. Large VIF values (we adopt the suggested cut-off point of 10 (Studenmund 1992)) indicate high multicollinearity. A number of variables were excluded from the analysis since their VIF were larger than 10.

As hypothesised, H2 (geographic scope), H5 (experience), H6 (cultural distance) and H8 (differentiation) are significant, and when the direction of causality was hypothesised, it is in line with a-priori expectations. The negative sign of cultural distance suggests that firms from culturally remote countries face difficulties in establishing cluster linkages, and hence such location is less beneficial for them. The negative sign of differentiation support the argument that firms with strong firm-specific attributes are likely to locate away from clusters, as a way to protect their proprietary advantages. They may also have less to gain from cluster location since they share less in common with other firms in the cluster than do their less differentiated counterparts. These findings are consistent with those reported by Shaver and Flyer (2000).

The highly significant explanatory power of one of the measures of innovative capabilities is in line with our a-priori expectations (H3), but unlike what we anticipated. This has a positive rather than negative sign, implying that the more innovative firms are attracted to cluster to a greater degree than the firms with weaker innovative capabilities. This stands in sharp contract with findings of previous studies referred to above. These differences might be attributed to the specific nature of the service industries studied here and of foreign activity in global cities. As mentioned above, the idiosyncratic nature of the knowledge of service firms may eliminate their need for remote location as a way to protect their proprietary technology from disseminating to competitors. Under such circumstances, firms value the opportunity to be close to the centre of the cluster to ease access to other cluster resources (e.g., professional employees, service providers). At the same time, the type of activity in global cities, where affiliates often have the responsibility for the regional and/or global operation of the entire MNE, put high premium on the ability to acquire first-hand market knowledge, and may explain the tendency of the most innovative firms to show preference for central cluster location.

The highly significant explanatory power of geographic scope (H2) might be attributed to the nature of international activity in global cities. Typical to this context is a level of operation on the local-global nexus (Nachum and Keeble 2000), whereby in addition to strong local links there are also intense global links, linking firms to global centres elsewhere. The strong local and global processes eliminate the national dimension. The strength of transitional ties between global cities is accompanied by a weakening of the linkages between each of these cities and its national system (Sassen 1991, 2000). Under such circumstances, MNEs with broad geographic scope are likely to benefit from cluster location, by gaining access to knowledge on global competition.

The significant, negative explanatory power of experience (H5) confirms the negative association between experience in a country and cluster location, and is evidence that the need for cluster interaction as a way to acquire local knowledge diminishes as firms gain experience in foreign countries. This implies that there are differences between the learning experience associated with an initial M&A and the more intense learning experiences associated with a portfolio of projects in a country. Many of the firms studied here have multiple acquisitions in New York and London, lessening the need for subsequent acquisitions to be near the knowledge centre and the desire to pay price premiums to locate in proximity to knowledge centres. This is consistent with Vermeulum and Barkema (2001)'s conclusion that firms continue to learn from an acquisition in a country where they have established a position earlier.

The failure to support H7 (reliance on local resources) and H9 (affiliate positions) can probably be attributed to the nature of the service industries studied here. External purchases are less common among these service industries, whereby firms tend to implement internally the entire value added chain and rely to a lesser degree than firms in most other industries on external sources for the provision of critical inputs. This may explain the non-significant explanatory power of H7.

The non-significance of H9 can probably be attributed to the nature of organisation of international business activity in financial and professional services. Investment in these industries is typically horizontal, whereby the affiliates are small replicas of the parent, implementing the entire value added chain locally, and enjoy a considerable amount of autonomy. Such an organisational structure arises as a result of certain characteristics of these service industries, notably limited tradability, need for high level of local adaptation and tailor-made solutions to meet the specific needs of clients (Nachum 1999). In this type of organisation, there is a tendency for limited control and great autonomy for affiliates. Particularly affiliates in global cities often have responsibility for the overall global/regional

operation, and are considerably autonomous. While there is nonetheless a considerable variation in the extent to which there are flows of knowledge and information and financial control within firms, our findings imply that this variation does not affect cluster location.

The non-significant explanatory power of age (H4) might be attributed to a limited tendency for relocation, which may bias the expected link between age and cluster location theorised here. Firms only seldom relocate their establishments, and most typically their initial location choices determine their current location (Hay 1976). It might well be that a location was chosen due to particular attributes of firms in the past and, and although such an association no longer exists, the costs of relocation exceed the potential benefits. Firms remain located in the location where they were initially established, even when it may no longer be the best location for them.

The highly significant sign of the 'target city' variable in the regression of the whole sample implies that there are significant differences between London and New York. To analyse these in greater depth we estimate the model for New York and London separately (columns 2 & 3 of Table 2).

London and New York resemble each other both in the economic and political forces affecting them and in the position they occupy within the international economic system (Fainstein, Gordon and Harlue 1992). They also appear to receive FDI of similar nature (Sassen 2000). At the same time, there are number of notable differences between them. They differ in terms of the economic size of their home market with New York based in the largest economy in the world, while London is located within a far smaller and less powerful economy. As a result, greater shares of activity taking place in New York are geared towards the national economy than is the case in London. Partially as a result of these differences, activity taking place in London is highly international, whereas New York with its

enormous national economy has a far larger component of domestically-oriented activity.

These differences may affect the location decisions of firms. Indeed, a number of the explanatory variables in our model have changed their signs and significance in the separate analyses for London and New York. While highly significant in the analysis of the whole sample and in London, cultural distance is not significant in the analysis of New York. FDI to New York in the industries studied here is dominated by firms originating from very few countries (Nachum 1999), all of whom are relatively similar in terms of their culture, making the cultural effect in this particular context insignificant. Overall, the London model is less significant from the whole model (potentially due to having fewer observations) while the New York model is more significant (probably implying greater homogeneity within this sample).

Likewise, experience (H5), which is highly significant in the analysis of the whole sample, is not significant in the separate analyses of both New York and London. There is some substitution here between experience in a particular host country and general experience in international operation, particularly when the countries under consideration are similar in terms of their economic and structural structure. A firm may benefit from experience gained indirectly in other countries. It is also possible to gain some indirect experience via licensing (Chang and Rosenzweig 2001). Our findings may suggest a greater substitution of such experience when the cities are analysed individually than exist for the sample as a whole.

As an additional test, we estimate the individual firm-specific characteristics and the cluster advantages on the residuals of the models estimated above. Although the dummy variable for 'target city' is not significant in this analysis, we also conduct this exercise separately for London and New York. The results are presented in Table 3. The findings of this analysis strongly support our argument that the firm-specific attributes, combined with location advantages,

together shape the location choices of MNEs. As the data in table 3 show, most of the explanatory variables are not significant, and the overall explanatory power of the model is weak, implying that firm specific attributes and location advantages on their own add only limited explanatory value to the model, after taking account of the interaction variables.

Validation

We used several analyses to validate the statistical significance of the findings. First, we tested the robustness of the estimation results after eliminating outliers. The hypotheses are confirmed at similar significance levels for the reduced sample. This suggests that our results are relatively free from any potential large firm biases, since they do not change after excluding observations associated with unusual characteristics.

Second, we checked for heteroskedasticity in the data. Since some of the firms studied have made a number of acquisitions in New York and/or London, there are multiple observations for them, which are probably not totally independent of each other, raising a concern of possible heteroskedasticity. We checked for heteroscedacity by using the generalised linear approach (Liang and Zeger 1986) (also known as the generalised estimating equations approach). This approach does not require specifying a form for the joint distribution of repeated measurements. Instead it introduces estimating equations that give consistent estimates of the regression parameters and of their variance under weak assumption of joint distribution (Liang and Zeger 1986). The results of these tests are consistent with those presented in Table 2, suggesting no heteroskedasticity in our dataset.

Third, we tested whether our results are robust for narrower industrial classifications. The control variable for industrial affiliation was excluded from the analyses reported in Table 2 due to high multicollinearity (VIF>10). We estimated the model separately for

financial and professional service MNEs. The results from these two sub-samples are generally consistent with the results of the full sample. While most explanatory variables are similar in terms of sign and magnitude in these separate analyses to those obtained for the whole sample, a notable difference is that overall, the model of financial services is slightly less significant than the one of professional services, suggesting a weaker link between location and firm-specific attributes. A number of differences between the industries might explain this finding. First, in financial services there are greater possibilities to benefit from scale economies by the standardisation of the production. Hence, there are greater internal advantages and lesser need to take part in the external economies of cluster that may drive firms to locate in proximity to other firms. Second, unlike professional services that sell almost exclusively to other firms, financial services also have a large component of activity geared toward small private consumers. Geographic spread provides a considerable advantage for the latter type of activity and may eliminate some of the advantages associated with location.

Fourth, we tested whether our findings hold if we take explicit account of a possible effect of external macroeconomic conditions on the relations we found. The study covers a period of about two decades, during which there naturally have been considerable changes in the macroeconomic environment facing foreign firms entering New York and London. It might be argued that these have affected the location choices of firms. For example, in fast growing economies firms may have a greater need for central cluster location, as a way to acquire knowledge on the rapidly changing conditions in their markets. Likewise, cyclical changes in property prices may affect the balance between the costs and benefits associated with central cluster location. To test for this, we add to the model dummy variables for each of the years analysed, except for one, where the year in question gets the value 1 and all other years zero. None of these dummy variables is significant. The inclusion of the dummy variables slightly diminishes the overall significance of the model (probably due to less degrees of freedom), but the findings are similar in sign and

magnitude to those reported based on the estimation of the model without the year dummy variables[9].

Concluding Remarks

In this paper we have sought to extend the theory of the location determinants of MNEs, by incorporating the firm-specific attributes of these firms as factors affecting the value of specific location advantages to them and hence their location choices. By explicitly acknowledging the heterogeneity between firms in terms of the value of location advantages to them, we imply that location advantages are likely to vary for individual firms. This signifies a departure from the traditional approach that has dominated the explanations of MNE location choices (Dunning 1993) which has tended to ignore such influences and attributed the location patterns of MNEs solely to the advantages of various locations.

The findings suggest that location advantage, rather than being an absolute whose value is identical for all firms within an industry, varies across firms, in line with certain firm specific attributes. The findings further demonstrate the promise of models of location determinants that take explicit account of firm specific attributes for the development of a fuller understanding of the determinants of location choices that is sensitive to differences among individual MNEs. By acknowledging the variety among firms in terms of their location preferences, we contribute to the recent interest in the heterogeneity among firms as a factor that affects their location decisions (Shaver and Flyer 2000), the choice of entry mode (Shaver 1998), and their impact on host economies (Chung 2001b). This body of research has shown the merit of taking account of such firm heterogeneity. Our study illustrates this merit in the context of location choices.

The study makes several additional contributions related to the data used and the specific setting in which the hypotheses were tested. First, by focusing on M&As and identifying the location determinants of this, increasingly common, entry mode of FDI, the study has made an important contribution to the literature on location determinants, which is based almost entirely on greenfield investment or else does not control for entry mode. Given the dominance of M&As as an entry mode (UNCTAD 2000), this contribution is of considerable value. Second, by studying FDI to global cities, a geographic area that has received limited attention by previous research, we have made a contribution to closing a large gap in knowledge on the specific attributes of FDI concentrating in these geographic areas. Third, by studying the location decisions of service MNEs, which account for large and rapidly growing shares of FDI, we have contributed to the knowledge on these industries.

Our findings support the need to pay more attention to these specific contexts. We have attributed the inconsistency of some of our findings with those of previous research to the specific nature of foreign activity in global cities and to certain characteristics of the service industries studied here.

There is a need for further research in order to improve our ability to specify the conditions under which different types of associations between firm-specific attributes and location advantages affect location choices of MNEs. First, similar analysis is needed for different location advantages. The focus here was on advantages associated with cluster location, but there is a need to establish the effect of firm specific characteristics on their evaluation of other location advantages, such as size and growth of the market, labour quality, costs of factors of production, etc. Cluster advantages might be characterised by stronger interaction between firm specific and location advantages than the more traditional location advantages that are external to firms and usually not under their individual control.

Second, similar analysis is also needed for additional firm characteristics, notably those related to the underlying motivation for undertaking the investment and the strategic objectives of MNEs joining a cluster. With the sources of data used here, these important characteristics could not be tested, but theory suggests that they are likely to exercise significant impact on the location decisions of MNEs. In particular, whether firms invest in order to complement and upgrade their advantages or rather to exploit their existing ones (Wesson 2001) is a question that could be examined.

Finally, there is a need to establish the validity of the findings reported here in different geographic contexts. Certain characteristics of global cities may inhibit generalisations. Notable among these is the tight geographic area of global cities that brings firms into close geographic proximity, and ascertains the potential benefits of clusters. The geographic concentration of individuals, occupations and industries into close quarters, typical to global cities, provides an environment in which ideas flow quickly, and in which knowledge spillovers and productivity gains from positive externalities are particularly effective (Gleaser et al. 1992, Rauch 1993b). It might be that some of our findings are specific to this context and may not be valid in less dense geographic areas.

Notes

[1]   Financial and professional services include banking, insurance, advertising, software and information services, accounting, management and engineering consulting, corresponding to the 60, 62, 63, 64, 67, 73 and 87 SIC codes.

[2]   Holbrook, Cohen and Hounshell (2000) provide a comprehensive survey of these attempts.

[3]   Agglomeration economies occur when the unit costs of production of a firm are lower in the context of relatively dense clusters of other firms or specialised resources, such as skilled labour and infrastructure, than would be the case if typical businesses were located elsewhere. They arise from advantages such as shared infrastructure available for firms locating close to each other, informational externalities regarding the extent of demand or the feasibility of operation at a particular location, and reduction in consumer search costs, that is beneficial for total market demand.

[4]   It should be noted, however, that there is also some contradicting evidence on the link between size of firms and their cluster location. In an analysis of the Texas lodging industry Chung and Kalnins (2001) found association between large firms and the extent of agglomeration. Suarez-Villa and Walrod (1997) reported similar findings, based on a comparison between clustered and non-clustered firms in the Los-Angeles basin. These differences are likely to be attributed to the drivers of agglomeration, that is, whether demand or supply driven. In these studies, the attraction of large firms to customers is what facilitates agglomeration (that is, demand driven agglomeration). Our discussion refers to supply-driven clustering, a geographic concentration that is driven by the

intention to share resources that are external to firms and the benefits of collective learning.

5   Much investment in knowledge-based clusters is of this kind.

6   Economists and economic geographers have strongly acknowledged the limitation of this approach and have formulated their analyses and theoretical frameworks of agglomeration economies with reference to far smaller geographic areas. Krugman (1991) observed that states are not the right geographic units to analyse agglomeration processes because they are too large to capture the local processes that facilitate innovative activity. Florida (1998) found that regions, rather than countries as a whole, are the focal points of knowledge creation and learning.

7   Several reasons may explain the large differences between the number of acquisitions in New York and London. First, the leading competitive position of US firms in world markets often implies that they are more likely to be the acquirers than the targets. Second, during the last decade, US firms have been seeking intensively to establish presence in London and the UK in order to gain access to the rest of Europe, in reaction to the creation of the European Union. Third, compared with their UK counterparts, US firms are more inward focused, with a stronger preference for domestic rather than foreign acquisitions.

8   Haleblian and Finkelstein (1999) use additional measure of relatedness. Taking the 4-digits SIC codes of the six main lines of business in which acquirers and a targets operate, they classify an acquirer and a target as related if they have at least one 4-digits SIC code in common among the top six in which they operate at the time of the acquisition. This measure is inadequate for our

purposes for two reasons. First, many of the firms we study operate in only a few SIC codes. This tendency for industrial focus appears to be common among financial and professional service firms. Second, this kind of somewhat 'remote relatedness' appears to be too broad as an indication of parent-affiliate relationships.

[9] The results of these tests are available upon request.

FIGURES AND TABLES

TABLE 1: The explanatory variables, their operation measures, expected direction of causality, descriptive statistics and correlation coefficients

Constructs	Operations (causality)	Means (S.D.)	GDI	Employ	Scope	Innov-will	Innov-prod	Age	Experience	Cultdist	reliance	differnti	Tax	Af-par-indst	ownership	Industry	For-indust	City	District
Cluster advantages																			
Cluster advantages	GDI index (+)	.263 (.225)	1.000																
Firm-specific characteristics																			
Size	No. employees (-)	5,076 (8,824)	-.059 (.505)	1.000															
Geographic scope	Share domestic acquisitions (+)	.758 (.132)	.017 (.692)	.096 (.238)	1.000														
Innovative capabilities	Good will value (shares assets) (-)	.534 (.581)	.078 (.398)	.275 (.104)	-.008 (.928)	1.000 .													
	Productivity (-)	681,192 (6808,499)	-.033 (.578)	.069 (.520)	-.074 (.172)	.130 (.255)	1.000												
Age	Years since establishment (-)	6.872 (4.918)	-.038 (.359)	.032 (.694)	.105 (.006)**	-.129 (.122)	-.048 (.380)	1.000											
Experience	No. previous acquisitions (-)	14.282 (18.801)	.009 (.829)	.084 (.313)	-.068 (.090)	-.034 (.699)	-.024 (.667)	-.020 (.618)	1.000										
Cultural distance	Index (?)	14.090 (19.385)	.022 (.609)	.065 (.444)	.028 (.481)	.047 (.590)	-.035 (.527)	.047 (.244)	-.109 (.008)**	1.000									
Reliance on local resources	Costs (shares sales) (+)	54.235 (33.236)	.162 (.039)*	.105 (.491)	.070 (.343)	.031 (.854)	-.182 (.083)	.035 (.632)	-.061 (.422)	.003 (.972)	1.000								
Differentiation	Selling costs (shares total costs) (?)	.790 (3.216)	.026 (.652)	-.071 (.498)	-.029 (.588)	.097 (.432)	-.007 (.929)	.056 (.298)	-.085 (.128)	-.003 (.959)	-.146 (.059)	1.000							
Organisational structure	Taxes (shares sales) (?)	5.26E-02 (7.879E-02)	.019 (.732)	-.091 (.377)	-.098 (.058)	.019 (.871)	.043 (.538)	-.058 (.267)	.051 (.340)	-.082 (.131)	-.183 (.013)*	-.075 (.165)	1.000 .						
	Affiliate/parent industry (?)	3.221 (1.577)	-.074 (.078)	-.088 (.318)	.089 (.035)	-.040 (.668)	.022 (.713)	-.002 (.964)	-.058 (.188)	.066 (.130)	-.119 (.133)	.083 (.160)	.025 (.656)	1.000					
Control variables																			
Nationality target	Dummy (1-foreign)	(a)	-.036 (.387)	.058 (.471)	-.054 (.163)	.151 (.070)	.051 (.345)	-.046 (.238)	.285 (.000)**	-.048 (.229)	-.081 (.272)	-.096 (.077)	.043 (.407)	-.047 (.268)	1.000				
Industrial affiliation	Dummy (4-digits SIC)	(a)	-.160 (.000)**	.138 (.114)	.042 (.313)*	.100 (.273)	-.019 (.751)	-.081 (.053)	-.024 (.575)	-.033 (.445)	-.115 (.142)	-.071 (.224)	-.035 (.532)	.170 (.000)**	.049 (.239)	1.000			
Foreign activity	Share foreign acquisitions (industry)	.757 (3.922E-02)	.088 (.036)*	.074 (.397)	.285 (.000)**	-.026 (.774)	.006 (.925)	.019 (.648)	-.009 (.840)	.070 (.103)	.104 (.184)	-.068 (.244)	.005 (.930)	.128 (.002)**	-.006 (.878)	.158 (.000)**	1.000		
City	Dummy (1-London)	(a)	.164 (.000)**	.100 (.218)	.042 (.273)	.102 (.223)	.037 (.493)	-.117 (.002)**	-.093 (.020)*	.066 (.099)	-.023 (.751)	-.076 (.160)	.038 (.469)	-.062 (.139)	.177 (.000)**	.095 (.023)*	.008 (.854)	1.000	
City district	Dummy	(a)	-.027 (.578)	.012 (.902)	-.046 (.308)	-.098 (.331)	-.005 (.934)	-.020 (.665)	-.026 (.577)	.053 (.263)	.043 (.615)	-.141 (.028)*	.033 (.596)	.068 (.172)	-.011 (.810)	.184 (.000)**	-.026 (.603)	-.031 (.495)	1.000

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). (a) Dummy variables. Means and S.D. not meaningful.

TABLE 2: Estimation of a model linking cluster distance with cluster advantages and firm specific characteristics (regression statistics)[a]

Constructs	Operations	Whole sample			London			New York		
		coefficients	t-values	VIF	coefficients	t-values	VIF	coefficients	t-values	VIF
Interaction variables (cluster advantages x Firm-specific characteristics)										
Size	No. employees	-.216	-2.540 **	1.301	-.223	-2.570 **	1.316	.155	1.979 *	1.309
Geographic scope	Share domestic acquisitions	.249	2.967 **	9.563	.274	2.461 **	9.293	[b]	[b]	[b]
Innovative capabilities	Good will value	.311	4.982 ***	5.816	.468	5.102 ***	6.973	.168	2.465 **	6.614
	Productivity	-.025	-.933	1.050	-.028	-.772	1.053	.107	1.641 +	2.154
Duration	Years since establishment	-.025	-.546	3.108	-.041	-.626	3.486	.044	.517	3.694
Experience	No. previous acquisitions	-.086	-2.413 **	1.910	-.072	-1.467	1.980	-.101	-1.476	2.331
Cultural distance	Index	-.133	-3.903 ***	1.735	-.158	-3.270 ***	1.934	.033	.454	2.594
Reliance on local resources	Costs (share sales)	.023	.438	3.957	.005	.077	3.997	.162	1.643 +	4.894
Differentiation	Selling costs (share total costs)	-.047	-1.606 +	1.269	-.052	-1.330	1.267	-.146	-1.595 +	4.223
Organisational structure	Taxes (share sales)	.033	.901	2.041	.038	.698	2.416	-.030	-.432	2.360
	Affiliate/parent industry	-.076	-1.230	5.696	-.088	-1.046	5.874	-.072	-.794	4.085
Control variables										
Nationality target	Dummy (1-foreign)	.072	1.832 *	2.300	.053	.935	2.654	.165	2.912 **	1.613
Industrial affiliation[b]	Dummy (4-digits SIC)	-	-	-	-	-	-	-	-	-
Foreign activity[b]	Share foreign acquisitions	-	-	-	-	-	-	-	-	-

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City	Dummy (1-London)	.170	3.784 ***	3.029	-	-	-	-	-	-
City district	Dummy	.168	3.750 ***	2.999	.147	2.435 **	3.017	.227	3.135 ***	2.625
Regression statistics										
Adj. R^2			.512			.471			.532	
Std. Error			2.106			2.426			1.720	
F Stat.			55.703			31.042			23.245	
Sig. F			.000			.000			.000	
N			637			438			235	

[a]Reported the standardized coefficients as they are easier to interpret and are more amenable to comparisons between different explanatory variables (Singh 1995).
[b]Excluded from the analyses due to high VIF (VIF>10)

*** p<.001; ** p<.01; * p<.05; + p<.10

TABLE 3: Estimation of the residuals of the model (regression statistics)[a]

Constructs	Operations	Whole sample			London			New York		
		coefficients	t-values	VIF	coefficients	t-values	VIF	coefficients	t-values	VIF
Cluster advantages										
Cluster advantages	GDI index	-.078	-1.438	2.493	-.018	-.262	2.749	-.140	-1.776 +	1.929
Firm-specific characteristics										
Size	No. employees	.026	.664	1.249	.036	.758	1.267	-.024	-.368	1.302
Geographic scope[b]	Share domestic acquisitions									
Innovative capabilities	Good will	.070	.953	4.624	.097	1.041	4.845	.054	.497	3.603
	Productivity	-.022	-.629	1.050	-.031	-.724	1.061	.104	1.335	1.874
Duration	Years since establishment	.081	1.389	2.903	.094	1.333	2.796	.187	1.874 +	3.068
Experience	No. previous acquisitions	.016	.372	1.664	-.002	-.040	1.556	.049	.624	1.900
Cultural distance	Index	-.013	-.290	1.649	-.022	-.423	1.592	.070	.910	1.805
Reliance on local resources	Costs (share sales)	.237	2.563 **	7.242	.233	2.129 **	6.739	.218	1.254	9.321
Differentiation	Selling costs (share total costs)	-.014	-.373	1.122	-.031	-.697	1.119	.025	.229	3.547
Organisational structure	Taxes (share of sales)	.007	.160	1.800	.061	1.003	2.082	-.030	-.406	1.662
	Affiliate/parent industry	.063	.793	5.315	.064	.693	4.804	.085	.620	5.795
Regression statistics										
Adj. R[2]		.138			.223			.239		
Std. Error		2.147			2.503			1.736		
F Stat.		11.594			12.423			7.712		
Sig. F		.000			.000			.000		
N		637			438			235		

[a]Reported the standardized coefficients as they are easier to interpret and are more amenable to comparisons between different explanatory variables (Singh 1995).[b]Excluded from the analyses due to high VIF (VIF>10). *** $p<.001$; ** $p<.01$; * $p<.05$; + $p<.10$

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