Journal of International Business Studies (2004) 35, 320–333

www.jibs.net

Foreign direct investment and local linkages

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Abstract
This paper analyses the pattern of local linkages in foreign direct investment (FDI), treating such local linkages as an investment in local relationships. Using Taiwanese manufacturing firms investing abroad as the sample for our case study, we find that the local linkage intensity of a foreign subsidiary differs by FDI location, entry mode, firm size and the nature of the production network in which an investor is embedded. More local linkages will be pursued by an investor if it is in search of distinctive and inimitable resources as opposed to homogeneous and reproducible resources. Investment in local linkages always begins with the linkage that carries the lowest risk to the original business network. For manufacturing firms, the sequence of such linkages is: workers, components and parts, subcontracting and, finally, sources of R&D.
Journal of International Business Studies (2004), **35,** 320–333.
doi:10.1057/palgrave.jibs.8400085

Keywords: foreign direct investment (FDI); local linkage; business network

Introduction

It has become increasingly commonplace for firms to attain their competitive advantages from foreign-based activities, with foreign direct investment (FDI) being the preferred way of organising such activities (Dunning, 2002). Depending on the nature of the advantages that firms are seeking, FDI may be classified into market seeking, resource seeking, efficiency seeking or strategic asset seeking (Dunning, 1993, 2000). Underlying these advantages are various kinds of resources that can be accessed and deployed in a foreign country through FDI.

Scholars have recently been bringing to our attention the importance of *relational capital*, which allows firms to access and deploy these resources (Kale *et al*., 2000; Dunning, 2002). Relational capital represents the goodwill and trust that exist between a firm and its customers, suppliers, partners, government agencies, research institutions and so on. It enables the firm to access and deploy the relevant resources in such an effective and unique way that it leads to the creation of competitive advantage for the firm. FDI makes use of relational capital to create local linkages that further contribute to the stock of this capital; indeed, it is the investment in local linkages that builds the platform for foreign-based activities. Local linkages also determine the benefits that the host country can derive from FDI: the more linkages that a foreign affiliate is willing to strike up with local firms, the greater the benefits that will be generated in the local economy (UNCTAD, 2001). As the amount of money involved in an FDI project may not

Received: 12 May 2002
Revised: 24 October 2003
Accepted: 24 February 2004
Online publication date: 13 May 2004

correctly reflect the intensity and extent of the local linkages, it is worth taking a closer look at these linkages.

This paper examines the nature and determinants of the local linkages pursued by overseas investors, by asking the following questions:

(1) What are the priority local linkages to be built by overseas investors?
(2) How do local conditions and firm characteristics affect this priority?

We treat local linkage as an investment in local relations, and draw on the data of Taiwanese manufacturing firms with overseas affiliates. Our study shows that the priority local linkages pursued by overseas investors differ by location of FDI, entry mode, the size of the investor and the nature of the production network in which the investor is embedded.

The remainder of this paper is arranged as follows. In the next section, relational capital and local linkage are discussed within the concept of a network. Then local linkage strategies in FDI are drawn from this discussion, and several hypotheses are formulated. This is followed by descriptions of the methodology and data used in the empirical study, and presentation of the results. Finally, the conclusions drawn from this study are presented.

Relational capital, networks and local linkages

The nature of relational capital must be understood from the concept of a business network, which refers to a set of interdependent business relationships. In fact, all firms work in cooperation with others in offering their products or services to the market. Even the largest firms do not stand alone in market competition, and every firm maintains certain lasting business relationships with others, upon which repeated transactions are based. Such lasting relationships reduce the cost of transactions through knowledge sharing and mutual understanding. They also facilitate value creation, notably in the form of product innovations (Tsai and Ghoshal, 1998).

There are, however, networks based on other relationships. For example, Ghoshal and Bartlett (1990) view a multinational corporation (MNC) as an inter-organisational network that is embedded in a web of external networks consisting of other organisations such as customers, suppliers and regulators, within which there is interaction between the different units of the MNC. The role of external networks is to foster this intra-firm relational capital (Dunning, 2002). Tsai (2000) emphasised the particular importance of social networks, and showed that they affect the rate of creation of intra-firm linkage within an MNC. Our study is concerned primarily with business networks, although it does, on occasions, refer to the social ties in which business relationships are embedded.

FDI can be considered as an effort to manage business relationships within a business network (Holm *et al*., 1996) by inducing inter-firm as well as intra-firm linkages. FDI may be a proactive effort to recombine resources and rearrange activities through such linkages (Hakansson, 1992). FDI may also be an investor's reactive effort to preserve certain important business relationships that may have been weakened by innovations in the network. In general, the amount that an investor can and should invest in local linkages in the host country depends on its prior position and experience in the domestic network.

It is presumably more costly to build new relationships in a foreign country than in the home country; therefore, FDI will not be undertaken unless these relationships link to distinctive resources that are unavailable at home. If there are several host countries from which to choose, all of which offer similar benefits, the one that offers the lowest costs in relationship building should be selected. Linkage costs include information gathering, organisational learning and adaptation until a new position for resource exchange is secured. Kinch (1992) argued that it is more difficult to establish position in a tightly structured network, as opposed to a loosely structured one, and Johanson and Mattson (1988) suggested that small firms are generally more adaptive than large firms, and hence are more able to establish a position in highly internationalised networks. Chen and Chen (1998) contended that large firms are better able to establish a position in primitive and non-institutionalised networks, thanks to their commanding size. All of this suggests that the cost of relationship building depends on the nature of local networks and on the size of the firm seeking the relationship.

FDI is a long-term endeavour in which relationships established within a foreign country provide a foundation for repeated transactions between the headquarters and the subsidiaries, between the subsidiaries and local firms, and between affiliates in different countries. Local presence is useful in building local relationships because it provides gravitational proximity to the foreign networks in

which activities are centralised. Local presence facilitates face-to-face contact with the foreign partners to cultivate trust (Dyer and Chu, 2000), and provides easy access to the flow of information that leads to opportunities for building new relationships. The agglomeration effect of foreign investment is a manifestation of active local networks attracting new network partners (Wheeler and Mody, 1992; Audretsch and Feldman, 1994; Harrison, 1994).

Burt (1992) suggested two principles for actors in the network to follow when contemplating investment in new relationships. The first of these principles is *efficiency*, meaning that firms should only invest in a relationship that provides non-redundant contacts in the network (redundant contacts are contacts that can be reached through existing relationships, either directly or indirectly). The efficiency principle suggests that diversity is more important than the size of the network. A large network does not necessarily provide more resources than a small network if the former contains a lot of redundant contacts; however, a large network is inevitably more costly to maintain. An implied condition of the efficiency principle in FDI is that investors should invest only in local relationships that lead to information content or resources that are lacking in the domestic network. In general, a host country whose national capabilities are more diverse than the home country provides more opportunities for non-redundant contacts.

The second principle proposed by Burt is *effectiveness*, meaning that actors in the network should focus their investment on preserving and enriching the primary relationships. For any firm embedded in the network, there are some exchange relationships that are considered primary, whereas the rest are secondary. Primary relationships are essential to the profitability of the firm, and hence carry large relation-specific value for the firm (Asanuma, 1989; Dyer, 1996). Firms base their exchanges with other actors in the network mainly upon these primary relationships (Snehota, 1990; Anderson *et al*., 1994), and will invest in the secondary relationships only if they see an opportunity to support the primary relationship by mobilising distinctive resources through these secondary connections (Holm *et al*., 1999). If they decide to do so, then more distant relationships are gradually brought into the centre of the activities, and during this process they commit more resources to the network as both the size and the complexity of the network increase.

Hypotheses

According to Burt's efficiency principle, only distinctive resources should be sought in new relationships. Given that that it is more costly to build new relationships in a foreign country than in the home country, FDI will be undertaken only if such resources are not available at home. The more diverse resources that a host country has to offer, the more local linkages an overseas investor will pursue. For example, unskilled labour is not a distinctive resource and can be employed in the market without much networking effort; an investor in pursuit of cheap labour typically operates in an 'enclave', in which all the resources except labour are brought in from the home-based networks.

The ultimate purpose of FDI is to access and mobilise local resources. If there are distinctive resources available in the host country, an overseas investor may pursue more complicated local linkages, such as procuring components and parts, conducting R&D (technology sourcing), seeking local financing and so on. In terms of accessibility, resources can be separated into basic resources (such as unskilled labour and natural resources) and strategic resources. The former type of resource is available to all firms in the host country but is generally immobile across borders, whereas the latter type is both country- and firm-specific and costly to develop.

It is a trend that firms from all countries and industries are diversifying the geography of their search for strategic resources (Dunning, 2002; Makino *et al*., 2002). Basic resources can be accessed by arm's length transactions, as they are homogeneous and reproducible. This type of resource can be easily identified, brought under the helm of the organisation, and put to use with only minimal coordinating effort. By contrast, strategic resources are heterogeneous and inimitable, and can be mobilised only by relational power. Furthermore, to put them to use requires some organisational learning, and this can only be achieved through associations. Hence we have the following hypotheses:

Hypothesis 1a: Investors attempting to access local resources that are heterogeneous and inimitable will invest in more local relationships than investors attempting to access local resources that are homogeneous and reproducible.

Hypothesis 1b: Investors will undertake more local linkages in a host country that offers

strategic resources than in a host country that offers only basic resources.

As basic resources can be obtained by arm's length transactions, investors attempting to obtain such resources in the host country may wish to choose a wholly owned subsidiary as the entry mode, because it affords the investor absolute control over the overseas operations. Meanwhile, investors attempting to access strategic resources in the host country may wish to choose a joint venture as the entry mode, as this creates better opportunities for resource sharing. We therefore have the following hypothesis:

Hypothesis 1c: Compared with investors in search of basic resources, investors seeking strategic resources in the host country are more likely to choose a joint venture, as opposed to a wholly owned subsidiary, as the entry mode.

According to Burt's effectiveness principle, relationships in a foreign network will be sought only if they enhance the value of the primary relationship in the domestic network. The simplest foreign operation is to establish a foreign subsidiary that hires local labour, imports materials from the headquarters and ships them back after processing. The more complicated foreign operations include trading with subsidiaries in third-party countries, and linkages to local suppliers and multinational firms. The portfolio of relationships to be established by a foreign subsidiary depends upon the resource constraints facing the investor and the primary relationship to be maintained. In particular, two important aspects of networking need to be taken into account to conform to the principle of 'effectiveness'.

First of all, when two networks are integrated through FDI, the investor has to ensure that its *chief bargaining power* in the primary relationship is strengthened rather than weakened. The focal relationship in the business network for most Taiwanese manufacturers serving, for example, as international subcontractors is their relationship with international buyers. For them, FDI is a pledge of commitment to this focal relationship, because it increases their capacity to serve the buyers. Investment in local linkages will be made if the new contacts reinforce their existing relationship with the buyers. They will, for example, invest in search, certification and training of local suppliers if this reduces the cost of production and consequently increases the suppliers' value as subcontractors. They will invest in R&D if the expected technological innovation improves the productivity or the product value, thus creating more bargaining power for the investor. However, they will not generally invest in local customer relationships, because this does not serve – and indeed may even hinder – their relationships with international buyers.

The chief bargaining power within the subcontracting relationship of most Taiwanese firms lies in their ability to manufacture products in a flexible fashion. This power is, in turn, derived from a loosely knit production network consisting of numerous unrelated, small and specialised suppliers. When Taiwanese manufacturers invest abroad in an attempt to reduce the cost of production, they have to choose a location from which the Taiwanese network is accessible, so as to maintain the flexibility of production; otherwise their bargaining power in international subcontracting business will be diminished. New relationships to be sought in the foreign network are those that reinforce the flexibility of the domestic network.

The search for local components and parts that support local production should be the priority local linkage sought by a foreign investor who places great importance on flexibility, such as Taiwanese firms, as a national border is always a barrier to the movement of components and parts even if the host country adopts a free trade policy. If local components and parts are not available, the investor may even encourage its suppliers in the home-country networks to move overseas and to produce locally. Sourcing of local components and parts is more important and urgent than any other networking activity, such as linkages to local marketing channels or financial institutions. Hence we have the following hypothesis:

Hypothesis 2: For an international subcontractor who places great emphasis on flexibility, aside from local labour, sourcing of local components and parts is the priority local linkage that it seeks to establish when investing abroad.

The second aspect to be considered in network integration is the *costs of learning, adjustment and adaptation*. An investor should bring in new relationships in such a way that these costs are minimised. The cost of network integration tends to be country specific because the nature of a network is country specific and has its origin in social organisations, cultural background, industrial structures and so on (Granovetter, 1985).

Coalitions are difficult between firms with different value systems, competences and experiences, and it takes a set of pervasive and complex relationships to govern these coalitions (Dunning, 2002). Johanson and Mattson (1988), for example, described the nature of a country's network in terms of the degree of internationalisation, arguing that internationalised countries have built-in institutions that facilitate cross-border network linkages. On the other hand, it will be difficult to undertake cross-border networking in primitive countries that lack such institutions. In this case, potential investors have to find some interface that reduces the entry barriers to local networks.

A hub organisation with links to both networks can serve as an intermediary providing trust to each side to facilitate linkages (Honig and Lampel, 2000). Ethnic links, such as Chinese diaspora, may play this role for Taiwanese investors (Chen and Chen, 1998). Investors who have already established themselves in the host country may also serve this purpose. The early movers also have a strong incentive to help latecomers to follow in their footsteps by collocating in the same region, because this increases network centrality around them and enhances their bargaining power (Wasserman and Faust, 1994). This centrality is conducive to resource exchange and resource pooling (Tsai and Ghoshal, 1998). The government of the host country may also go out of its way to assist foreign investors to build local linkages in an effort to promote foreign investment. Hence we have the following hypotheses:

Hypothesis 3a: The more internationalised the host country, the more local linkages will be established by overseas investors operating there.

Hypothesis 3b: Local linkages are more difficult to achieve in less internationalised countries. The less internationalised the host country, the more important the third-party connections in local networking, such as connections to the host-country government, to local communities of the same ethnic origin and to earlier investors from the same country.

Third-party connections are particularly important for small and weak firms that normally lack the capability to go it alone in internationalisation (Shaver and Flyer, 2000). In terms of entry mode, a joint venture is preferable to a wholly owned subsidiary if the investor intends to make use of third-party connections in accessing local networks, because local partners can serve as an interface to local networks. Thus we have:

Hypothesis 3c: Compared with large firms, small firms are more likely to rely on third-party connections to access local networks, and therefore are more likely to be motivated by third parties in making overseas investment.

Hypothesis 3d: Investors that choose joint venture as the entry mode for FDI are more likely to rely on third-party connections than investors that enter as wholly owned subsidiaries.

An essential aim of local networking is to build linkages to local resources for innovation, including new product developments and improvements in production methods. Relational capital is conducive to inter-firm learning, which is an important source of innovation (Kale *et al*., 2000). Innovations are more valuable if a producer has the power to promote them within the network and to have them accepted by all the members of the network. In general, a firm operating in a producer-driven commodity chain has more power with regard to promoting its innovations than one in a buyer-driven commodity chain, because production arrangements in the former network can be preplanned, whereas production in the latter network is mainly a response to consumer sentiments (Gereffi and Hamilton, 1996). Therefore subcontractors operating in a buyer-driven commodity chain are usually less enthusiastic about developing local linkages, and much more enthusiastic about maintaining their ties with the domestic networks. This is particularly evident for subcontractors serving international buyers rather than local customers. For them, local responsiveness is weighed much less than the critical resources controlled by the headquarters: thus their local linkages will be limited to the relationships that complement the critical resources at home. In this case, diversity of local contacts for the benefits of innovation may be sacrificed in favour of the preservation of the core competence of the parent firm. Hence we have the following hypothesis:

Hypothesis 4: Investors embedded in a producer-driven commodity chain have a stronger incentive to invest in local linkages than those that are embedded in a buyer-driven commodity chain.

The costs of achieving local linkages can be reduced if the investor has a local partner. Local partners provide information and play an inter-

mediary role in relationship building, and lower costs lead to more investment. Hence we have the following hypothesis:

Hypothesis 5: Investors entering a foreign country in a joint venture mode will invest more in local linkages than investors entering in the form of a wholly owned subsidiary.

The fact that adjustment and adaptation in network integration are costly often implies a process that is gradual, starting with the relationship that carries the lowest risk to the original network. For example, an overseas manufacturing subsidiary usually starts by training local workers to perform the production routines transferred from the headquarters. After the production routines are stabilised, the subsidiary will then start to look for local suppliers of components and parts. Amongst the various components and parts sought, those inconsequential to the quality of the products are usually sought first, and only after production activities are fully integrated with locally sourced inputs will the subsidiary begin seeking contacts in other fields that are intrinsically more risky, such as R&D for the purpose of innovations in products and technology.

In general, local linkages that bring changes to the composition of the product are less risky than those that bring changes to the product itself. Outsourcing of components is less risky than outsourcing of production, because the latter requires more coordination and adaptation. Hence we have the following hypothesis:

Hypothesis 6: Local networking starts from the linkage that carries the lowest risk to the original network, and moves gradually towards linkages that carry higher risks. Amongst production-related local linkages, the sequence should be workers, components and parts, subcontracting and R&D sourcing.

It follows naturally from the above hypothesis that the capacity of an investor to absorb risk determines the intensity of local networking. A small firm may stop at components and parts sourcing whereas a large firm may proceed to the highest level of sourcing of new technologies. Aside from risk absorption, the *strategic linkage capability* also limits an organisation's effectiveness in using inter-unit or inter-firm linkages for exchanging resources and transferring knowledge (Tsai, 1998, 2000). The sooner a firm can build a new relationship, the earlier it can obtain the required resources and support to create its competitive advantage. This strategic linkage capability may also be positively (albeit imperfectly) correlated with firm size. Moreover, relational capital is a 'public good' within the firm and may be applied repetitively to various transactions without diminishing its value. Large firms also benefit more than small firms from any investment in a relationship because the resultant relational capital may be applied to a larger volume of exchanges (Dyer and Singh, 1998).

Hypothesis 7: The larger the investor, the more the investor will proceed to a higher-level (and hence more risky) local linkage.

Cumulative learning and interactions in foreign environments do of course help to reduce the perceived risks (Eriksson *et al*., 1997). Therefore it seems that, empirically, operations in universal foreign markets become increasingly embedded in the local networks over time (Johanson and Mattson, 1988). The process of increasing embeddedness is conditioned by the risks of coordination failure. Newly created relationships must be absorbed, adapted and trained before they can be integrated into the system. Hasty introduction of new relationships – too much, too soon – may cripple the system and result in network disintegration.

Methodology and data

We define a *network* as a set of interconnected business relationships upon which exchanges between actors are conducted. Exchange relationships in a network may be measured on the basis either of *activities* or of *actors* (Hakansson and Johanson, 1993). The actor-based measure is often applied to the study of dyadic relationships. Our study of networking behaviour focuses mainly on activity-based exchange relationships that tend to reflect the short-run strategies of firms. In other words, we study the linkages that underline particular activities without considering how many actors are involved in the exchange. Six activities are included in our exchange relations:

(1) sourcing of components and parts;
(2) marketing of final products;
(3) product design and innovation;
(4) hiring of local labour;
(5) sourcing of local production capacities; and
(6) obtaining financial resources.

Our study focuses on the exchanges between subsidiary and local firms, which are referred to as *local linkages*. We measure the 'intensity' of each

linkage in terms of the volume and frequency of exchange. Respondent firms were asked to assess the intensity of a linkage using a Likert scale ranging from 1 to 6, where 6 refers to very substantial exchange and 1 refers to no exchange at all. The intensity of the six linkages is, in turn, combined to gauge the total strength of local networking.

Our raw data were taken from a survey conducted by the authors on 851 Taiwanese manufacturing firms that have undertaken some direct investment in the US, China or Southeast Asia (including Thailand, Malaysia, the Philippines and Vietnam). The population was drawn from a Taiwan government file containing overseas investment projects approved by the government between 1986 and 1996. The entire population was surveyed, and each respondent to the survey was identified with a single FDI location. For those making multiple investments, FDI locations were identified by the largest investment project, in terms of capital investment. The respondent firms were then asked to answer all questions based on the activities in that location only. Inter-affiliate interactions were ignored in this study.

We are aware that some Taiwanese firms made overseas investments without the government's approval, but they were mainly small and medium enterprises (SMEs). Our sample was therefore biased toward relatively large firms. Nonetheless, a sizable number of SMEs were still covered in the survey. A total of 276 valid questionnaires were obtained from the survey, representing a response rate of 32.4% of the population surveyed. A total of 19 firms in the service sector were excluded, leaving 257 manufacturing firms for the subsequent study. Of the 257 sample firms, 119 had invested in China, 107 in Southeast Asia, and 31 in the US; 147 of the firms were SMEs (according to the official Taiwanese definition of SMEs as firms with less than 300 employees).

Correspondents were asked to answer the questions concerning their local networking activities at the subsidiary in the above six areas. Their answers form the basis of this study.

Empirical testing of local linkages

We begin by measuring the intensity of local linkages in six exchange relations. They are, respectively, the extent to which:

(1) components and parts are supplied by local firms (*supplier linkage*);
(2) products are sold to local firms (*marketing linkage*);
(3) product design or innovation are obtained from local firms or from alliances with local firms (*R&D linkage*);
(4) the workforce is accounted for by local people (*labour linkage*);
(5) work is done by local subcontractors (*subcontracting linkage*); and
(6) financial resources are obtained from local institutions (*financial linkage*).

'The extent to which' is measured under a six-point Likert scale ranging from 'very substantially' (scale 6) to 'none' (scale 1) to gauge the frequency and volume of transactions in each activity. In essence, this represents a composite measure of the exchange relationship between the subsidiary and local firms, institutions and individuals, in various activity categories.

Labour linkage is included as one of the local linkages because, as opposed to the hiring of unskilled workers, the employment of skilled labour may entail some relational capital. Note that the intensity index measures the extent to which local-based resources contribute to the activities within the subsidiary. It is not a strict measure of the frequency of exchanges, but rather of the proportion of activities that draw upon external resources. The six indicators are then compressed into a single construct of *local networking index* by principal components analysis. The principal components model is appropriate because we are interested in extracting a minimum number of factors to account for a maximum proportion of variance in the original indicators (Hair *et al.*, 1995).

In general, exchange relationships embodied in each linkage encompass trading and collaborations. For example, marketing linkage includes direct sales to local customers and indirect sales through local agents and trading firms. R&D linkage includes technology licensing, formation of R&D consortia and contracted R&D projects. Financial linkage includes linkages to indigenous and multinational financial institutions operating locally.

Table 1 lists the average intensity of six linkages based upon self-measurement by the respondent firms. It can be seen that linkage to local labour tops the list, with linkage to local components and parts following in second place. This is true for all locations. The statistical tests show that there is a significant difference between these two

linkages, which in turn are significantly higher than the other linkages. This confirms Hypothesis 2, that component and part sourcing are amongst the priority local linkages. On the other hand, linkage to local R&D activities is the least-sought local linkage, and subcontracting linkage comes second from the bottom. This is also true for all locations.

The statistical tests show that R&D and subcontracting linkages are significantly lower than other linkages, and there is also a significant difference between the two linkages themselves. These results suggest that, as far as production is concerned, local workers present the lowest risk to a foreign investor, followed by local components and parts, then local subcontracting arrangements, and then local R&D collaboration. Investors tend to build more linkages to the resources that present lower risks to the original network relationships, thus confirming Hypothesis 6.

As for local financing and local marketing, these generally lie in the middle of the priority list, with marketing linkage having a higher priority in the US but a lower priority in China and Southeast Asia. Local linkage tends to be stronger in a location that is more internationalised. In our case, local linkage has advanced to a higher level in the US than in Southeast Asia and China. This is true not only for production-related linkages, but also for linkages to local marketing and financial resources. This confirms Hypothesis 3a.

We compress the above six linkages into one single measure of local networking under the principal components method, and then estimate the population marginal means of local networking according to FDI location, entry mode and the size of the investor. These results are presented in Table 2, from which it can be seen that FDI location makes a significant difference to local networking. Subsidiaries located in the US have the strongest local linkages, whereas those emanating from the subsidiaries in Southeast Asia and China are indistinguishable. We shall also show in the following section that, of the three regions, the US offers the most distinctive and advanced resources to foreign investors. We classify resources into three groups: basic resources, strategic resources and knowledge resources. *Basic resources* are the labour and natural resources with which a host country is naturally endowed. *Strategic resources* are internationalisation assets, local industrial networks (supporting industries), skilled and professional workers and internal markets. *Knowledge resources* include R&D capabilities, manufacturing technologies, marketing know-how, managerial expertise and organisational strength. Strategic and knowledge resources correspond to the strategic resources mentioned in the previous section.

Table 1 Local linkages

	US	*China*	*Southeast Asia*	*Overall*
Local labour	5.2222	4.0783	4.2400	4.5135
Local components and parts	3.4259	3.0957	3.1350	3.2189
Local financing	3.2963	2.5391	2.9700	2.9351
Local marketing	3.4444	2.5681	2.6067	2.8731
Local subcontracting	2.6667	2.4348	2.3400	2.4805
Local R&D	2.6296	1.9739	1.9800	2.1945

Note: The local linkage index is measured by a Likert scale ranging from 1 to 6, where 6 indicates very strong linkage, and 1 indicates no linkage at all.

Table 2 Estimated population marginal means of local networking index

Dependent variable	*Grand mean*	*Investment location*			*Network*			*Firm size*		*Entry mode*	
		China	*SE Asia*	*US*	*Hi-tech*	*Producer-driven*	*Buyer-driven*	*Small*	*Large*	*Joint ventures*	*Wholly owned*
Local linkage	0.119	−0.062	−0.119	0.539[a]	0.0384	0.288[b]	0.031	0.011	0.228[c]	0.387	−0.148[d]

[a]US compared with China, and US compared with Southeast Asia, are significant at 5% level.
[b]Producer-driven network compared with buyer-driven network is significant at 10% level.
[c]Large firms compared with small firms are significant at 5% level.
[d]Wholly owned subsidiaries compared with joint ventures is significant at 5% level.

We separate knowledge resources from other strategic resources in order to highlight the importance of tacit knowledge and firm specificity. Basic resources are largely homogeneous and equally available to all buyers, and hence are not distinctive; it is not difficult to find more than one country supplying similar basic resources. By contrast, strategic resources tend to be country specific, and local presence is often a prerequisite to accessing them. Strategic resources are not naturally endowed; instead, they are accumulated in a society over time through training and adaptation (Porter, 1991). Meanwhile, knowledge resources can be obtained only through learning, and they are often firm-specific and very difficult to imitate. Respondents were questioned on the kind of resources that they intended to access in the host country, leading to the construction of a measure of resource-seeking intentions, as described in Table 3.

Table 3 Resource-seeking intentions in the host country

Are you looking for the following resources in the host country? (yes/no)
Basic resources
Labour
Land or other natural resources
Strategic resources
Internationalised market networks
Skilled and professional workers
Supporting industries
Internal market
Knowledge resources
R&D and design capabilities
Manufacturing technologies
Marketing know-how
Managerial or organisational advantages
Human resources development skills

Note: Each respondent is asked to identify the resources that they sought in the host country (multiple choice). The index of resource-seeking in each category (basic, strategic and knowledge) is measured by the proportion of resources identified by the respondent. For example, if respondents indicated they were seeking labour but not land or natural resources in the host country, the index for basic resources seeking would be 0.5.

We then classify the resource-seeking intentions by investment location, entry mode and firm size, and list the results in Table 4, which shows that investors in the US are primarily inspired to seek strategic assets, with knowledge assets being set as secondary targets, and basic resources the lowest.

In comparison, investors in China and Southeast Asia are preoccupied with basic resource-seeking, with much less concern for strategic and knowledge assets. The statistical tests indicate that investors in China and Southeast Asia are more active in seeking basic resources than their counterparts in the US, but they are less enthusiastic than their US counterparts with regard to attaining knowledge resources.

Strategic resources are most earnestly sought by investors in the US, less by investors in China, and least by investors in Southeast Asia. China is slightly ahead of Southeast Asia in seeking strategic assets because investors consider China to have more market potential than Southeast Asia. Note that labour is not the priority resource sought by investors in the US, but interactions with local workers are nevertheless more intensive than any other local linkages (see Table 1). This is so because the achievement of labour linkage is the least costly, although its benefits may also be the smallest.

Greater networking activities by investors in the US (as shown in Table 2) reflect the importance of local linkages in accessing and mobilising strategic

Table 4 Estimated population marginal means of resources sought by investors

Dependent variable	*Grand mean*	*Investment location*			*Entry mode*		*Firm size*[e]	
		China	*SE Asia*	*US*	*Joint ventures*	*Wholly owned*	*Small*	*Large*
Basic resources	0.462	0.640	0.587	0.157[a]	0.418	0.505[c]	0.460	0.463
Strategic resources	0.335	0.252	0.190	0.563[b]	0.356	0.313[d]	0.314	0.355
Knowledge resources	0.180	0.157	0.105	0.277[a]	0.184	0.175	0.183	0.177

[a]US compared with China, and US compared with Southeast Asia, are significant at 5% level.
[b]US compared with China, and US compared with Southeast Asia, are significant at 5% level, and China compared with Southeast Asia is significant at 10% level.
[c]Wholly owned subsidiaries compared with joint ventures are significant at 5% level.
[d]Wholly owned subsidiaries compared with joint ventures are significant at 10% level.
[e]Large firms compared with small firms are insignificant in all three categories.

and knowledge resources, both of which are embedded in the networks and difficult to obtain from the open market. They are also country-specific or firm-specific and difficult to replicate in other countries or by other firms. Strategic and knowledge resources are therefore considered to be distinctive and advanced, as compared with basic resources. Association with local firms or institutions is essential if these kinds of resources are to be secured: therefore the more these kinds of resources are sought in the host country, the more local linkages are needed. In the US, strategic and knowledge resources are sought more earnestly: hence more local networking activities are observed. This confirms Hypotheses 1a and 1b.

In practical terms, US subsidiaries are keen to become involved in local networking because they are active in building local sales networks, recruiting local managerial and technical staff, and engaging in joint R&D projects with local firms. In essence, the US is rich in strategic and knowledge resources, a situation that is clearly distinct from the resources available in the networks in Taiwan. Local linkages in the US lead to valuable and non-redundant contacts: for example, local linkages in the field of technology achieve spatial proximity, which is conducive to knowledge flow (Kogut *et al*., 1993).

Also shown in Table 4 are the differences in resource seeking that are attributable to entry mode. It can be seen that, after controlling for investment location and firm size, wholly owned subsidiaries are more actively engaged in seeking basic resources than joint ventures, whereas they are less enthusiastic about strategic resources than the latter group. The differences in the aspirations for knowledge resources are statistically insignificant between the two groups in terms of entry mode, which suggests that investors in search of basic resources are more likely to choose a wholly owned subsidiary as the mode of entry to ensure their control in the overseas operations, whereas those seeking strategic resources are more likely to sacrifice control in exchange for inter-firm coalitions. This confirms Hypothesis 1c. Meanwhile, firm size does not make a significant difference to the pattern of resource seeking.

We now refer back to Table 2 to see how investment location, entry mode and firm size matter in the investment in local linkages; we also include the nature of the network as an impact factor. We classify the production network with which an investor is associated into three categories: high-tech networks, producer-driven networks and buyer-driven networks. A *high-tech network* includes electrical and electronics, machinery and precision instrument industries; a *producer-driven network* includes chemicals, basic metals, metal products, non-metal mineral industries; and a *buyer-driven network* includes textiles, food, paper, wood products and leather. Both the producer-driven and buyer-driven networks are considered low-technology in contrast to the high-tech networks. Given the rapid changes in technology and increasing globalisation, it is difficult to characterise the nature of a production organisation in the high-tech industry as either a buyer-driven commodity chain or a producer-driven commodity chain (Gereffi, 2001). It is therefore useful to create a separate category for the high-tech industry.

The difference in local linkages between the three types of industry network are shown in Table 2, from which it can be seen that investors embedded in a producer-driven network are most active in making local linkages, followed by those from the high-tech industry, and finally by those operating in a buyer-driven network. The statistical tests show that there are significant differences between producer-driven and buyer-driven networks, but the differences between the other pairs are insignificant. In particular, investors in a producer-driven network are more active in building local sales channels, sourcing local components and parts, and engaging in joint product developments with local partners. This confirms Hypothesis 4.

Our measurement of linkages is basically concerned with activity-based connections, whose importance depends on the nature of the technology involved in the competition. Activity-based connections are particularly important in producer-driven commodity chains in which process technology is the key to competition. Investors operating in this type of network have a strong preference for local linkage, because activity-based local connections facilitate innovation. Through these connections, investors improve their competitiveness by reducing production costs, providing multiple sources of supply, increasing proximity to the market, and enlarging market share. They may also take advantage of local technological capabilities by hiring local scientists and engineers and engaging in joint R&D projects to improve technological competence (Estades and Ramani, 1998). In contrast, firms operating in a buyer-driven network

may be more concerned with maintaining a good relationship with certain actors in the network, notably the buyers. Local linkages will therefore be devoted to the preservation of this relationship rather than to innovations.

Also shown in Table 2 is the effect of firm size on local networking, where large firms are shown to establish stronger local ties than small firms. Major differences in local linkages between large and small firms manifest themselves primarily in local sourcing of components and parts, subcontracting, joint R&D efforts with local firms, and utilisation of local financial resources. Local linkages benefit large firms more than small firms because of the 'public good' nature of relational capital. Large firms also have more capacity to absorb the risks involved in building new relationships, whereas small investors have less autonomy in local networking because of the heavy reliance on their partners in the primary relationship. This confirms Hypothesis 7.

Entry mode also makes a difference to investment in local linkages. As can be seen from Table 2, in terms of pursuing local linkages, joint ventures are shown to be more active than wholly owned subsidiaries. Again, this suggests that the choice of entry mode is associated with the investment plan for local relationships. The more an investor aspires towards local relationships, the more likely the investor will be to choose a joint-venture mode in FDI, thus confirming Hypothesis 5.

In order to gain a clear understanding of the catalysts for FDI and local linkages, we asked respondent firms about the major drivers of their FDI decision: that is, who persuades and prompts them to go abroad? We list four major drivers that may precipitate FDI:

(1) related firms (domestic or foreign firms with which the investor has had previous trading relationships);
(2) overseas Chinese community,
(3) local government; and
(4) Taiwanese firms from the same industry that were investing overseas before the respondent firm.

If all these drivers are inconsequential, FDI will be considered as driven by its own initiative, a decision based on its own calculation. Note that self-driven FDI does not always take the form of a wholly owned subsidiary; it may simply take the form of a joint venture proposed by the investor itself. The results of the survey are shown in Table 5, which is categorised by investment location, entry mode and firm size.

It can be seen that own initiative accounts for most FDI cases, but self-motivated FDI is most prevalent in the US, followed by China, and then Southeast Asia. The statistical tests show that the difference in self-motivated FDI between the US and China is insignificant, whereas in Southeast Asia self-motivated FDI is significantly less frequent than in either the US or China. Firms with prior trading relationships are shown to play a more significant role in Southeast Asia and China in precipitating FDI than in the US. On the other hand, the overseas Chinese community is shown to play a more important role in Southeast Asia than in China or the US.

Table 5 Estimated population marginal means of major drivers of FDI

Dependent variable	*Grand mean*	*Investment location*			*Entry mode*		*Firm size*	
		China	*SE Asia*	*US*	*Joint ventures*	*Wholly owned*	*Small*	*Large*
Firms with trading relationships	0.0634	0.0707	0.074	0.0454[a]	0.0751	0.0517[d]	0.0755	0.0513[f]
Taiwanese firms from the same industry	0.0565	0.0347	0.05	0.0847	0.0617	0.0513	0.0778	0.0352
Overseas Chinese	0.0777	0.0399	0.123	0.0699[b]	0.123	0.0323[e]	0.112	0.0434[g]
Local government	0.0525	0.0642	0.0614	0.0267	0.0581	0.0468	0.0431	0.0618
Own initiative	0.671	0.73	0.553	0.729[c]	0.616	0.725[d]	0.595	0.746[g]

[a]US compared with China, and US compared with Southeast Asia, are significant at 10% level.
[b]Southeast Asia compared with China is significant at 5% level, and Southeast Asia compared with US is significant at 10% level.
[c]Southeast Asia compared with China, and Southeast Asia compared with US, are significant at 5% level.
[d]Wholly owned subsidiaries compared with joint ventures are significant at 10% level.
[e]Wholly owned subsidiaries compared with joint ventures are significant at 5% level.
[f]Large firms compared with small firms are significant at 10% level.
[g]Large firms compared with small firms are significant at 5% level.

In sum, in the less institutionalised markets such as Southeast Asia, initial network connections to related firms and ethnic links to Chinese diaspora play an important role in facilitating FDI. In China, related firms also play an important role, but the role of Chinese community is less significant because the barriers to local linkage can be easily overcome by Taiwanese firms, because of cultural affinity. This confirms Hypothesis 3b.

It is also shown in Table 5 that large firms are more likely than small firms to be self-motivated to undertake FDI and to execute investment projects independently; small firms are more likely to depend on partners with prior trading relationships, and on overseas Chinese as third-party connections in the undertaking of FDI. The difference can be explained by the resource constraints facing small firms. This confirms Hypothesis 3c.

Finally, Table 5 also shows that FDI in the form of a wholly owned subsidiary is more likely to be self-motivated than that taking the form of a joint venture. In facilitating FDI, partners with prior trading relationships, as well as overseas Chinese, play a more important role in joint ventures than wholly owned subsidiaries. This confirms Hypothesis 3d.

Conclusions

In this paper we treat FDI as a networking activity and study the local linkages pursued by overseas investors. Using Taiwanese firms as the sample, we find that Taiwanese investors in the US are more active in the pursuit of local linkages than their counterparts in Southeast Asia and China. We argue that this is because, as compared with the other two locations, the US offers more strategic and knowledge resources that cannot be obtained from the market. Investors in a producer-driven network are more active in building local linkages than their counterparts in a buyer-driven network. This is because firms in a producer-driven network have more power to promote innovations in the network, thereby enhancing their position.

We also find that large firms are more active than small firms in pursuing local linkages because of their larger capacity to absorb the risks involved in network integration and their ability to apply relational capital on a larger volume of exchanges. Entry mode also makes a difference to local linkage: FDI taking the form of a joint venture leads to more local linkages than FDI in the form of a wholly owned subsidiary. The choice of entry mode seems to be associated with the conceived plan of investment in local relationships prior to undertaking FDI. Those investors that intend to spend more resources on building local relationships are more likely to choose a joint venture over a wholly owned subsidiary. Joint ventures are also preferred to wholly owned subsidiaries if the investor seeks strategic resources in the host country, rather than basic resources.

Amongst the various local linkages, employment of local workers is always the priority undertaking. This is followed by linkages to local suppliers, local subcontractors and local R&D capabilities, in that order. The sequence is dictated by the risks that local linkages may bring to the original network, as exchange relationships are interdependent. The priorities of local financing and marketing linkages, meanwhile, depend on the nature of the host country markets.

Some host countries are more conducive to local networking than others because of the availability of internationalised institutions. Those lacking these institutions would have to offer some interface mechanisms to facilitate local linkages. Convenient mechanisms include related firms and the ethnic community. For Taiwanese investors these interface mechanisms are found to be more influential in Southeast Asia than in China and the US. Small firms are found to use these interface mechanisms more often than large firms, with such mechanisms playing a more important role for joint ventures than for wholly owned subsidiaries.

Understanding the nature of local linkages is useful, as they bring major benefits to the host country. Firms investing in different locations pursue different local linkages in an attempt to maintain or strengthen their core relationships in the home base. In order to facilitate such local linkages, a host country has to offer not only distinctive resources to foreign investors, but also a 'friendly' networking environment. A host country lacking such an environment should consider providing some interface mechanisms that induce relationship building. As networking is a cumulative process, the initial connections between two unfamiliar networks will be most difficult, and extra help from governments is often desirable.

Acknowledgements

We thank JIBS Departmental Editor Professor Mari Sako, and the anonymous referees, for their detailed and thoughtful comments.

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Accepted by Mari Sako, Departmental Editor, 24 February 2004. This paper has been with the author for two revisions.