FDI and inter-firm linkages: exploring the black box of the Investment Development Path

by

Joanna Scott-Kennel and Peter Enderwick
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The Investment Development Path purports that foreign direct investment acts as a catalyst for economic development in a host country. In this article we conduct a theoretical investigation of the black box of the Investment Development Path – specifically, the mechanisms by which inward foreign direct investment prompts domestic firms to augment their ownership-specific advantages. Using the tenets of the eclectic paradigm, we explore the relationships between the entry of transnational corporations, resource exchange via non-equity, inter-firm linkages, ownership-advantage augmentation, and a host country’s progression through the stages of the Investment Development Path. We conclude that the contribution of inward direct investment to a country’s economic development is positively related to the degree of linkage intensity at the firm level.

Keywords: foreign direct investment, inter-firm linkages, economic development

Introduction

There is growing interest among researchers and governments in the role of transnational corporations (TNCs) as agents of host country economic development (Blomstrom, 1991; Dunning and Narula, 1996). There is also a recognition that economic globalization, the importance of knowledge-based assets and the subsequent growth of alliance capitalism have

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not only fundamentally affected the way in which the assets and activities of TNCs are organized and undertaken, but also their impact on host economies (Cantwell and Narula, 2001; Dunning, 2001; Lundan and Hagedoorn, 2001; Narula and Dunning, 2000; Teece, 1992).

A widely used framework for looking at the relationships between inward foreign direct investment (FDI) by TNCs, outward FDI by domestic firms and economic development by the host country is the Investment Development Path (IDP) (Dunning, 1981). While much of the analysis of these relationships is conducted at a macro- (Dunning and Narula, 1996) or meso-level (Ozawa, 1996), the central idea of the IDP – that foreign TNCs might help indigenous firms to upgrade their capabilities – is firmly grounded at the micro or firm-specific level (Dunning, 1988). However, research on the IDP does not explore, in any detail, the mechanisms by which inward FDI prompts domestic host country firms to upgrade their own ownership (O) – advantages — and ultimately become outward investors themselves. We argue that these micro-level resource and capability transmission mechanisms constitute the black box of the IDP.

Thus, the purpose of this article is to illuminate the black box of the IDP – that is, to better understand the process of upgrading of resources and capabilities at the level of the firm as a result of foreign affiliate and domestic firm interaction. Specifically, we conduct a theoretical investigation of the types of non-equity resource transmission mechanisms (inter-firm linkages), and how these influence the ownership-location-internalization (OLI) configuration of a host economy and the subsequent progression through the stages of the IDP.

Literature review

The IDP and OLI frameworks

A principal contribution of the IDP to our understanding of a host country’s development trajectory at the firm level is its recognition of the important relationship between inward FDI,
the gradual development of competitive resources or O-advantages within indigenous firms, and eventual outward FDI. The framework purports that inward FDI plays an important role in fostering the capabilities that ultimately enable indigenous firms to undertake outward FDI. Given favourable receptor conditions, inward FDI provides the impetus for the upgrading of indigenous O-advantages through the introduction of new technologies, critical skills and knowledge, competition effects, and linkages with domestic enterprises. Thus, the IDP provides a dynamic framework within which to examine the relationship between a country’s stage of economic development and the extent of inward and outward FDI activity, where government policy acts as a catalyst to change (Dunning and Narula, 1996; Durán and Ubeda, 2001; Ozawa and Castello, 2001).

The IDP suggests that a country may progress through five stages of economic development relative to the rest of the world (Dunning, 1981; 1986; Dunning and Narula, 1996). These stages are identified by the country’s net outward direct investment (NOI) position (the stock of outward FDI less the stock of inward FDI) and level of economic development (proxied by GDP or GNP per capita). The relative position of countries on the IDP trajectory can be explained by the OLI paradigm: the extent and nature of O-advantages and resources of both foreign affiliates and indigenous firms; the location-specific (L) advantages available to all firms in the specific country, region or locality; and the extent to which the O-advantages of both foreign and indigenous firms, in conjunction with home and host country L-advantages, are utilized via cross-border internalization (I-advantages) (Dunning, 1993; Narula, 1996). The OLI elements will, in turn, be influenced by a country’s economic structure and the development strategy and macro-organizational policies of government (Dunning and Narula, 1996). As the OLI configuration relative to other countries changes, so too does the country’s NOI position and its stage of economic development.

The first stage of the IDP is characterized by a negative NOI, limited inward FDI and no outward investment. The country has very few L-advantages to attract inward FDI, and
even if these exist, local infrastructure and O-advantages of domestic firms are insufficient to support inward, or outward, FDI. Economic development is at an early stage. In the second stage, L-advantages become more favourable in response to changes to government policy, and the NOI position becomes more negative as inward FDI increases.

In the third stage, competition in the domestic market rises as O-advantages of the inward investors diffuse through to local industry, and initial cost competitiveness advantages are lost. Low cost-seeking inward FDI is gradually replaced by market-seeking investment (Barry et al., 2003). As local L- and O-advantages become more sophisticated, outward FDI by domestic firms emerges, thus improving both the NOI position and level of economic development. The mutually reinforcing relationship between a host country’s economic development and NOI position has been empirically tested by Dunning (1980) and Narula (1996). It involves a process of micro-level development of O-specific advantages by domestic firms, which enables them to undertake outward FDI activity. This further enhances local firm capability and O-specific advantage. Coupled with improvements in L-advantages brought about by government policy conducive to host industry development, this is expected to lead to a higher level of economic development (GDP/GNP) over time.

Stage 4 has traditionally been demarcated by a shift to a positive NOI position, as outward FDI stock exceeds inward FDI stock (Dunning, 1981, 1986). However, a recent study found discrepancies between the level of economic development (as measured by GDP per capita) and the NOI position, prompting a redefinition of the fourth stage (Durán and Ubeda, 2001). The authors suggest that measures of economic structure other than GDP per capita should be jointly considered as proxies of a country’s competitiveness. The reason is that Stage 4 countries have a developed country profile in terms of GDP per capita, level of structural development and economic and social infrastructure, they attract asset and market-seeking investment and engage in outward FDI to gain strategic assets and lower-cost labour – but some still exhibit low outward FDI intensities that sustain a negative NOI position (e.g. New Zealand (Akoorie,
The authors argue that a negative NOI may be attributed to a smaller endowment (and generation) of knowledge- or technologically-intensive intangible assets (Durán and Ubeda, 2001, 2003). They conclude that the distinguishing feature of Stage 4 countries is not necessarily a positive NOI position, but an exponential growth function of outward FDI stocks.

Stage 5 of the IDP is characterized by a NOI position that fluctuates around zero as both stocks of inward and outward FDI become balanced and reciprocal cross-haul investment between countries occurs (Dunning and Narula, 1996). Juan Durán and Fernando Ubeda (2001) also observe that this stage is difficult to test empirically and that a NOI fluctuating around zero is also characteristic of a country with negligible inward and outward FDI (i.e. stage 1).

Established stocks of inward FDI, strong growth in outward FDI and, in most instances, a positive NOI position, are the distinctive features of countries in Stages 4 and 5. Research suggests that for these to be achieved, a host country needs both an accumulation of knowledge intensive assets embodied in domestic firms and favourable L-advantages relative to competing locations. Durán and Ubeda (2001) find that Stage 4 countries that fail to make the progression to Stage 5 have similar levels of inward investment but not outward investment as the latter is inhibited by insufficient local development of knowledge-intensive O-advantages. Peter Buckley and Francisco Castro (1998) find that host government policy, as well as external political events, can shape a country’s trajectory by affecting the attractiveness of the country’s L-advantages to inward FDI. The development of local O-advantages and L-advantages can be mutually reinforcing. For example, clusters or agglomerations of knowledge-intensive firms contribute to the attractiveness of a specific locality to

1 However, Belkan (2001), in a study of the Austrian IDP, argues that a low or negative NOI may not be a sign of weakness of the O-advantages of host country firms, but strength of host country L-advantages which serve to attract more inward FDI.
inward FDI from both later stage countries seeking strategic acquisitions and alliances (Cantwell and Iammarino, 2000; Dunning, 2000) and from earlier stage countries seeking to address asset deficiencies (Chen and Chen, 1998). One advantage may also mask a decline in the other: for example, improvements in the NOI position may not necessarily signal growing local capabilities to undertake outward FDI – it has also been interpreted as the influence of declining L-advantages on stocks of inward FDI (Duran and Ubeda, 2003; Castro, 2004).

The literature reveals that different configurations of O, L and I play a particularly important role in advancing a host economy through the different stages of the IDP. In earlier stages, L-advantages, including appropriate facilitative government policy and basic infrastructure, are important. Continued progression through the stages is driven by the development of O-advantages in domestic firms and the introduction of foreign O-advantages by affiliates. In particular, the development or the introduction of internationally mobile, created assets (i.e. technology and knowledge) appear to be an important accelerator of both outward FDI and the shift to Stages 4 and 5. The development of such assets relies on a mutually reinforcing interaction between the O-advantages associated with inward FDI and foreign affiliates, and those of domestic firms – which are, in turn, reliant on the local political, economic and structural environment (L-advantages).

*Internalization strategy and augmentation of O-advantages*

Traditional approaches to business strategy purport that TNCs benefit from internalizing transactions within the firm hierarchy, thus creating I-advantages by avoiding or exploiting market failure across national borders (Rugman, 1980; Buckley and Casson, 1985). These approaches infer that O-advantages are created internally in the home market and then transferred to affiliates that exploit these advantages offshore, taking advantage of foreign L-advantages to build further on firm competences. Under this scenario, affiliates are more likely to absorb local competence via acquisition rather than engaging in linkages with domestic firms.
However, more recent approaches, including the intangible asset model (Buckley and Cassson, 1976, 1998), the knowledge model (Kogut and Zander, 1993), and the centres of excellence model (Holm and Pedersen, 2000) propose that the process of O-advantage augmentation casts a much wider net than home country development. Increasingly important is the development of affiliate-specific advantages in a host economy (Rugman and Verbeke, 2001) and asset augmentation (rather than asset exploitation or acquisition). These strategies support the notion that firms undertake FDI to tap into skills, knowledge and competences contained within agglomerations of highly innovative firms and industries (Kuemmerle, 1996; Chen and Chen, 1998; Dunning and Lundan, 1998; Ostry and Gestrin, 1993). These approaches focus on exploiting value creating activities and resources from both internal and external networks (Ghoshal and Barlett, 1990; Griffith and Harvey, 2001).

Exploiting and augmenting resources and assets beyond the boundaries of the firm is not a new idea – to which the extensive literature on strategic alliances, networks and clusters is testimony (e.g. Enright, 2000; Lundan, 2002; Håkansson and Johanson, 1993; Ivarsson, 1999). This literature suggests that, where the value of external relationships is perceived to be higher than what may be achieved under the full internalization of O-advantages, a firm may choose to externalize certain firm-specific assets, resources and knowledge via linkages with external firms. Thus, externalization via linkages suggests a means by which TNC activity might contribute to the upgrading of indigenous firms through knowledge and technology spillovers (Narula and Sadowski, 2002; Cantwell and Piscitello, 2002).

Researchers have sought to incorporate more sophisticated elements of corporate strategy and structural complexity, such as alliances and networks, into the eclectic paradigm (Dunning, 1995; 1997; 2001; Madhok and Phene, 2001; Guisinger, 2001; Cantwell and Narula, 2001; Lundan and Hagedoorn, 2001; Scott-Kennel and Enderwick, 2004). For example, Kurt Pedersen (2003) offers useful insights as to how the eclectic paradigm might be extended to include non-equity
relationships formed through networks and alliances. He concludes by suggesting that either O-advantages might be split up into two groups: those possessed exclusively by a firm and those shared with other firms; or that firms might trade-off the internalization dimension in favour of cooperative agreements. In other words, a decrease in I-advantages may enable an increase in O-advantages via access to local capabilities and competences.

However, despite the potential of inter-firm linkages to promote host country economic development, inadequate consideration is given to the implications of the formation of non-equity relationships on host country firm development within the context of the IDP/OLI literature (Cantwell and Narula, 2001). Specifically, the mechanisms by which resource diffusion or transfer might occur via foreign affiliate – domestic firm linkages have not been linked explicitly to these frameworks.

**Industry spillovers and inter-firm linkages**

Empirical research from the host country perspective offers insight into the impact of inward FDI on domestic firms. The general consensus of this research is that FDI offers an additional channel for the introduction of technology, innovation, new ideas, different organizational practices and new skills to a host country (Dunning, 1993). However, findings on the impact of these resources at the industry level are mixed. Some find the entry of FDI is associated with higher total factor or labour productivity (Kokko *et al.*, 1996; Barrell and Pain, 1997; Sadik and Bolbol, 2001), the creation of spillovers to local industry (Coe *et al.*, 1997) and increased exports by domestic firms (Aitken *et al.*, 1997), while others find limited indirect effects from FDI (Narula and Marin, 2003) or that spillovers are limited to firms with foreign ownership (Khawar, 2003; Aitken and Harrison, 1999).

Many researchers find that the degree to which FDI influences the upgrading of domestic firms depends on the extent of interaction between foreign and domestic firms and the
existing level of host-country economic development. Luis De Mello (1997) finds that the greater the local value-added content of foreign affiliates in a host country’s production and the more productivity spillovers occur, the greater the expected impact. Beneficial impacts from affiliate activities are more likely to occur when the host country has sufficiently developed local L- and O-advantages, including technology and absorptive capacity (Kokko, 1994; Görg and Strobl, 2003), human capital (Borensztein et al., 1998; Engelbrecht, 1997), economic stability and open markets (Bengoa and Sanchez-Robles, 2003; Zhang, 2001) and domestic firm capabilities (Rodriguez-Clare, 1996; Blomstrom and Kokko, 1998). It is evident from these studies that a certain degree of local competence and absorptive capacity is required for the benefits of linkages and spillovers from affiliate activities to be realized.

Other researchers have looked at specific types of linkages at the firm level. A review of this research offers useful insights into the potential of non-equity inter-firm linkages to act as resource transmission mechanisms. From the literature we are able to identify two main types of linkages according to their potential for resource diffusion or transfer – indirect and direct (UNCTAD, 2001).

Indirect linkages occur as a result of the close proximity or agglomeration of firms within a locality. They do not involve inter-firm transactions or resource transfer; but externalities in the form of technology, knowledge and productivity spillovers that may occur through demonstration effects, competitive effects or worker mobility. Demonstration effects occur as domestic firms observe and emulate the activities of affiliates, enabling them to improve their efficiency (Bengoa and Sanchez-Robles, 2003; Zhang 2001). Competitive effects occur typically among firms that compete in the same industry and/or for the same customers. Competitive pressure from the affiliates’ activities may either encourage better performance of domestic firms, or lead to crowding out of domestic competitors, depending on the level of existing capability (Markusen and Venables, 1999). The agglomeration of firms or the presence
of TNCs may also increase overall levels of productivity (see above) or lead to the entry of indigenous firms into the industry (Görg and Strobl, 2002). Worker mobility occurs when former employees leave to set up their own businesses – taking with them knowledge about the affiliates’ activities, capabilities and resources, in addition to the benefits of training and skill development they have received on the job (Buckley, 2004).

Direct linkages, in contrast, are characterized by inter-firm relationships where there is a direct transfer of resources, and include transactional relationships, such as backward (buy) and forward (supply) linkages with domestic suppliers and customers, contractual linkages with domestic franchisees or licensees, and collaborative or alliance relationships with domestic partners.

Much of the literature focuses on the extent to which affiliates source inputs locally (such as raw materials, components, finished goods, transportation or professional services) (McAleese and McDonald, 1978; Driffield and Noor, 1999; Belderbos et al., 2001; Giroud, 2003). Interactions between buyers and suppliers might be limited to a simple “goods for payment” exchange – in which case the likelihood of transfer of other resources is low. As foreign affiliates typically source fewer inputs locally than domestic firms due to preference for intra-firm purchasing or weak local supplier capability or competitiveness, the developmental impact of these linkages is often limited (Turok, 1993: Scotland; Ruane and Görg, 1997: Ireland).

However, where domestic firms are more capable, and when goods and services are location-bound, supplier-specific or customized, then affiliates may form on-going relationships with domestic suppliers or subcontractors (UNCTAD, 2001). If these relationships are intense – i.e. they are more engaging, involving on-going interaction between the firms – they are more likely to involve the diffusion and transfer of resources that contribute to the upgrading of O-advantages in domestic firms. For example, in a study of the relationships between eight foreign affiliates and their 16 subcontractors in Singapore, Poh-Kam
Wong (1992) found that the affiliates had a significant and positive influence on the technological development of their local subcontractors. Affiliates encouraged their domestic subcontractors to upgrade their production capabilities to meet the required standards, and offered technology, information, exposure to good manufacturing processes, and assistance with technological learning to help them do so. The transfer of such resources from the affiliates to domestic suppliers or subcontractors is confirmed by other studies (Halbach, 1989; UNCTAD, 2001; Barrow and Hall, 1995; Dunning, 1998; Papanastassiou and Pearce, 1999; Brown, 1998; Crone and Roper, 2001; Raines et al., 2001; Narula and Marin, 2003; Giroud, 2003).

A few studies have also been extended to include forward linkages (Rodriguez-Clare, 1996; Sun, 1996; Scott-Kennel, 2004), which are formed with domestic customers or agents for distribution, marketing and services (Wright, 1990). Such linkages allow affiliates to draw on the experience of local firms, access established distribution networks and provide on-going support to customers. It is expected that there will also be a certain level of co-operation and information sharing between the firms to facilitate these linkages, which may promote resource and knowledge transfer by the affiliates, such as techniques for optimal product use, corporate marketing ideas, or organizational practices relating to staff training, distribution and after-sales service.

Contractual linkages are formed with domestic firms that undertake licensing or franchising contracts with foreign affiliates. These types of agreements may enable the affiliate to specialize by contracting out non-core activities, to meet host country regulations on local content, or to take advantage of existing local manufacturing capacity or sales outlets. Such agreements typically involve the transfer of codifiable O-advantages and resources, such as product or process technology, marketing practices and brands, equipment, managerial support, training, as well as business practices and procedures. However, contractual agreements are less commonly used in conjunction with FDI (Ietto-Gillies, 1992). Accepted theory asserts that FDI
occurs when a TNC exploits O-advantages across national boundaries via internalisation (Dunning, 1993). In other words, FDI is the entry mode chosen when all three elements of the eclectic paradigm, namely; O, L, and I, are present. Contractual linkages, on the other hand, relax the ‘I’ element of the paradigm by involving external firms. Therefore, where a TNC has already established a wholly-owned subsidiary in the host country for the purposes of internalising O-advantages, it is less likely to use local licensees or franchisees.

Collaborative agreements include any form of non-equity based cooperative agreement among firms, such as strategic alliances, technology development contracts, management contracts, and cooperative marketing agreements (Garcia-Canal et al., 2002). Cost, competitive rivalry or timing considerations lead firms to collaborate, to share unique competences with alliance partners and to engage in mutual development, despite the difficulties associated with this strategy and the risks of losing O-advantages to competitors (Cantwell and Narula, 2001). Affiliates engaged in collaborative linkages may seek specialization in their own areas of expertise, relying on partners for other value-added activities, or the joint development of expertise drawing on the complementary skills of a domestic partner, e.g. in the design of technology or products suited to the local market. Domestic firms may have innovative products that need financial or marketing support from a better-resourced TNC. Both contractual and collaborative linkages are more cooperative in nature, i.e. both firms are likely to contribute to a reciprocal flow of information and resources. However, due to their intensity and focus, collaborative linkages offer the most potential for exchange, sharing and joint development of resources and O-advantages.

If neither indirect nor direct linkage formation occurs in the presence of inward FDI, this is indicative of a foreign enclave. Enclave environments have been experienced in countries operating special economic zones (SEZs), e.g. where foreign presence is high and affiliates are geared towards exporting, relying heavily on inputs from their parent companies.
or other foreign enterprises operating in the zones (McIntyre et al., 1996; Aitken et al., 1997).

Our review of the literature reveals that a country’s progression through the IDP trajectory is determined by the influence of government policy on the development of favourable L-advantages, and then, in later stages, the development of local knowledge-intensive O-advantages. Inward FDI can play an equally important role in the development of these advantages via linkages, where existing levels of domestic capability determine the types and intensity of linkage formation (Giroud and Mirza, 2004). However, few studies consider the potential impact of a range of firm-level linkages as resource transfer mechanisms (but see Scott-Kennel and Enderwick, 2004), nor does the literature explicitly consider how linkages at the firm level might relate to a country’s progression through the IDP. We attempt to address these limitations in the second half of this article.

Exploring the black box: linkages and the IDP trajectory

The relationship between the micro-level linkages between foreign affiliates and domestic firms and the macro-level economic development of a host country can be conceptualized in three steps: TNC entry and inter-firm linkage formation, O-advantage augmentation and progression through the stages of the IDP.

Step 1: Entry of a TNC and inter-firm linkage formation

TNC entry into a host economy through inward FDI is typically associated with a bundle of internalized (I_F) foreign ownership-specific advantages (O_F)², including products, processes, knowledge, technology and managerial practices as well as the benefits arising from the organization of such advantages internationally. Empirical evidence shows that intra-firm transfer of O_F increases an affiliate’s competitiveness and performance in a host country (Dunning, 1993).

² Where \text{F} = \text{Foreign} and \text{H} = \text{Host or Domestic}.
But how might inward FDI contribute to the O-advantage augmentation process of domestic firms? Linkages between affiliates and domestic firms create the potential for diffusion or transfer of $O_F$-advantages, resources and assistance through the indirect or direct transmission mechanisms outlined earlier in this article. The type and intensity of linkage formation are influenced by the O-advantages of an affiliate ($O_F$) as well as those of domestic firms ($O_H$); the extent of full or partial internalization ($I_F$) of $O_F$-advantages by an affiliate (or by a domestic firm); and the location-specific advantages ($L_H$) in a host-country. A summary of key relationships is shown in table 1: in the absence of $O_H$-advantages, an enclave scenario is likely; but as $O_H$-advantages improve and develop, competitive and transactional linkages occur, and the likelihood of full internalization of $O_F$-advantages by affiliates ($I_F$) decreases – eventually leading to a scenario whereby foreign and domestic firms may share resources through collaborative linkages involving only the partial internalization of O-advantages by partners ($I_F$ and $I_H$).

### Table 1. Influence of $L_H$, $I_F$ and $O_H$ on non-equity inter-firm linkages

<table>
<thead>
<tr>
<th>+$L_H$</th>
<th>+$L_H$ +$O_H$</th>
<th>+$L_H$ +$O_H$ +$I_H$</th>
</tr>
</thead>
<tbody>
<tr>
<td>+$I_F$</td>
<td>Enclave</td>
<td>Competitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transactional</td>
</tr>
<tr>
<td>-$I_F$</td>
<td>Contractual</td>
<td>Collaborative</td>
</tr>
</tbody>
</table>

*Source:* the authors.

*O*$_F$-advantages assumed.

These OLI factors are influenced by a number of determinants, including firm strategy, affiliate characteristics such as size, age, motive for investment and autonomy, government policy and economic structure (Giroud and Mirza, 2004).
Table 2 gives a more detailed coverage of the OLI configuration associated with each type of linkage, and the expected impact on O_F-advantage transfer or diffusion. In the discussion that follows, we address each of these linkages in turn.

Under an enclave scenario, O_F-advantages are fully internalized by an affiliate. This may be as a result of weak O_H-advantages, such as insufficiently developed technical capabilities, production capacity or managerial skills (Giroud, 1993). It may also be the result of a TNC’s strategy favouring intra-firm linkages over inter-firm linkages. Location-specific variables in the host country (L_H) influence both these factors. For example, host government intervention may inhibit affiliate-domestic firm interaction through the establishment of EPZs as the sole domain of foreign owned firms. In an enclave environment, there is no direct transfer of O_F-advantages by affiliates. The gradual upgrading of O_H is only possible via demonstration effects; the pace of development depends on existing levels of O_H. There is, however, scope for affiliates to upgrade their O_F-advantages in conjunction with opportunities presented by the location-specific advantages of the host country (L_H).

The entry of foreign competitors influences the propensity of domestic firms to upgrade existing O_H-advantages. First and foremost, affiliates seek to protect proprietary assets (O_F) from domestic competitors through full internalization (I_F). Despite the absence of any direct, transactional linkages between firms, however, there is still scope for O_H-advantage upgrading through the effects of competitive pressure on domestic competitors coupled with emulation and demonstration effects. This is more likely where the O-advantages of foreign affiliates (O_F) and those of domestic firms (O_H) are similar in strength, and where location-specific factors (L_H) are supportive of the development of domestic competition. In the absence of such an environment, domestic firms are more likely to become acquisition targets by TNCs, or to be squeezed out of the market by the superior performance of foreign affiliates.
Table 2. Inter-firm linkages and ownership-advantage augmentation

<table>
<thead>
<tr>
<th>Linkage</th>
<th>OLI configuration</th>
<th>O-advantage transfer (or diffusion)</th>
<th>Expected impact on O-advantage augmentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclave</td>
<td>( O_H ) weak</td>
<td>Diffusion of ( O_F ) possible via emulation, demonstration or worker mobility effects</td>
<td>Changes to market/industry structure over time</td>
</tr>
<tr>
<td></td>
<td>( L_H ) unsupportive of local development</td>
<td>No direct transfer of ( O_F ) by affiliate</td>
<td>Augmentation of O-advantages limited to the affiliate</td>
</tr>
<tr>
<td></td>
<td>Full ( I_F )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive</td>
<td>If ( O_F ) and ( O_H ) dissimilar ( (O_H ) weak)</td>
<td>Diffusion of ( O_F ) unlikely given weak ( O_H ) (capability)</td>
<td>Domestic competitors either do not exist or are insufficiently developed to compete with the affiliate</td>
</tr>
<tr>
<td></td>
<td>( L_H ) unsupportive of local development</td>
<td>No direct transfer of ( O_F ) by affiliate</td>
<td>Increase in market concentration, decrease in competition if domestic firms are squeezed out</td>
</tr>
<tr>
<td></td>
<td>Full ( I_F )</td>
<td></td>
<td>Loss/decline of ( O_H ) (if present) in favour of ( O_F ) due to competitive pressure. ( O_H ) may increase in related/supporting industries</td>
</tr>
<tr>
<td></td>
<td>If ( O_F ) and ( O_H ) similar ( (O_H ) strong)</td>
<td>Diffusion of ( O_F ) probable via emulation or demonstration effects given strong ( O_H ) (capability)</td>
<td>Direct competitive pressure may force upgrading by domestic firm and/or affiliate</td>
</tr>
<tr>
<td></td>
<td>( L_H ) supportive of local development</td>
<td></td>
<td>Former employees may leave to establish their own companies</td>
</tr>
<tr>
<td></td>
<td>Full ( I_F )</td>
<td></td>
<td>Local competition may prompt hostile action by affiliate (ie. acquisition of ( O_H ))</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Changes to industry structure, market competition over time augments ( O_H )</td>
</tr>
<tr>
<td>Transactional</td>
<td>( O_H ) complementary to linkage formation</td>
<td>Forward linkages: ( O_F ) transfer likely through assistance, products, marketing specifications, after-sales service etc.</td>
<td>( O_F ) coupled with existing ( O_H ) leads to ( O_H ) augmentation by domestic firm due to: demands by affiliate for improvement to the quality of service (e.g. agent); assistance and resources (including ( O_F )) given by affiliate to improve domestic agent/ customer output; supply of improved variety and quality of</td>
</tr>
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<thead>
<tr>
<th>Linkage</th>
<th>OLI configuration</th>
<th>O-advantage transfer (or diffusion)</th>
<th>Expected impact on O-advantage augmentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full or partial $I_F$ possible</td>
<td>Backward linkages: $O_F$ transfer likely in areas of product/process technology, design specifications, quality control, information, etc.</td>
<td>$O_F$ coupled with existing $O_H$ leads to $O_H$ augmentation by domestic firm due to: demands by affiliate for improvement to the quality of product/service; assistance and resources (including $O_F$) given by affiliate to improve domestic supplier/subcontractor output.</td>
<td></td>
</tr>
<tr>
<td>Contractual</td>
<td>$O_H$ complementary, $L_H$ supportive of local development, possibly not supportive of foreign activity in this area</td>
<td>Transfer of $O_F$, unique to the foreign firm but given to local licensees/franchises, such as product/process technology, design specifications, brands, etc.</td>
<td>$O_F$ coupled with existing $O_H$ leads to $O_H$ augmentation by domestic firm due to: the transfer of resources and assistance (including $O_F$); and the need for the domestic licensee/franchisee to meet the affiliate’s standards and specifications for output.</td>
</tr>
<tr>
<td>Collaborative</td>
<td>$O_F$ and $O_H$ strong and complementary, $L_H$ supportive of local development</td>
<td>Reciprocal transfer of $O_F$ and $O_H$ advantages, such as technology, products, processes, expertise, etc.</td>
<td>Collaborative relationship likely to prompt O-advantage augmentation ($O_F$ and $O_H$) via innovation, technology development, human resource development and sharing of competences by both firms.</td>
</tr>
</tbody>
</table>

*Source:* the authors.

If transactional linkages are limited to local sourcing and supply exchanges, the opportunities for resource transfer are low. However, where existing \( L_H \)- and \( O_H \)-advantages are conducive to more intense inter-firm relationships, there is more potential for transfer of \( O_F \)-advantages, resources or assistance to domestic firms via backward and forward linkages. Existing \( O_H \)-advantages of domestic firms influence their ability to meet competitive pressure, cater to demand, absorb and adapt new competences, and upgrade existing \( O_H \)-advantages (UNCTAD, 1999; Bertschek, 1995; Blomstrom, 1991).

The use of contractual agreements with domestic firms may occur in response to government regulations (e.g. local content regulations), or as part of a specialization strategy by an affiliate. \( O_H \)- and \( L_H \)-advantages need to be sufficiently well developed. The partial internalization of \( O_F \)-advantages occurs via the transfer of production or service related resources. This enables domestic licensees or franchisees to upgrade their existing capabilities and capacity to meet the requirements of TNCs, and to use existing \( O_H \)-advantages more competitively. In the case of collaborative agreements, the domestic partner possesses a high level of competency in complementary value-added activities (\( O_H \)-advantages) (Chen and Chen, 1998; Madhok and Phene, 2001). An agreement may occur for strategic reasons, for mutual exploitation and/or development of \( O_F \)- and \( O_H \)-advantages. Collaborative linkages involve a reciprocal inter-firm transfer of \( O_F \)-advantages and \( O_H \)-advantages (Perez, 1997). Partners may also engage in the joint development of new \( O \)-advantages in the host economy.

*Step 2: Ownership-advantage augmentation*

Figure 1 shows the process of \( O \)-advantage augmentation as a result of inter-firm linkage formation. The entry of a TNC into a host economy at time \( t \) is associated with the introduction of \( O_F \)-advantages to the host economy. Under enclave conditions, only the affiliate stands to benefit from the upgrading of its \( O_F \)-advantages in time period \( t+1 \). It does so by employing the traditional TNC strategy of full internalization (+I\(_F\)) – in other words, by exploiting its firm-specific assets in combination
with host economy L-advantages (L_H). The same strategy is employed under competitive conditions; however, the existence or emergence of domestic firm O_H-advantages offers the capacity for O_H upgrading via competition and demonstration effects (represented as t+x due to the expected time lag effect of indirect linkages).

If O_H–advantages are sufficiently strong to encourage direct transactional linkage formation, there is the potential for the transfer of certain O_F-advantages by affiliates and subsequently upgrading of O_H. The strength of O_H t+1 depends on the extent of I_F by affiliates. I_F, in turn, is determined by the intensity of the linkage formation – whether affiliates engage with domestic suppliers and customers in on-going relationships.

Contractual and collaborative linkages rely on strong O_H– and L_H-advantages as well as partial I_F by affiliates. The augmentation of O-advantages by both foreign affiliates and domestic firms (O_F t+1 + O_H t+1) is made possible by the reciprocal exchange of resources, as well as joint organizational learning and cooperation. Collaborative linkages also present a high likelihood of mutual development and the creation of ownership-specific advantages by both firms working together (as shown by (O_F + O_H) t+1 in figure 1).

In summary, the extent of O-advantage augmentation is dependent on the existing capabilities of domestic firms and the extent to which the diffusion and/or transfer of O_F–

**Figure 1. Ownership-advantage augmentation process**

<table>
<thead>
<tr>
<th>Inter-firm linkages</th>
<th>OLI configuration (t)</th>
<th>O-advantage augmentation (t+1)</th>
<th>Linkage intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative</td>
<td>O_F t+1 + L_H t+1 + O_H t+1 I_F t+1</td>
<td>O_F t+1 + O_H t+1 (O_F t+1 + O_H t+1)</td>
<td>High</td>
</tr>
<tr>
<td>Contractual</td>
<td>O_F t+1 + L_H t+1 + O_H t+1 I_F t+1</td>
<td>O_F t+1 + O_H t+1 (O_F t+1 + O_H t+1)</td>
<td></td>
</tr>
<tr>
<td>Transactional</td>
<td>O_F t+1 + L_H t+1 + O_H t+1 I_F t+1</td>
<td>O_F t+1 + O_H t+1 (O_F t+1 + O_H t+1)</td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive</td>
<td>O_F t+1 + I_F t+1 + L_H t+1 + O_H t+1 I_F t+1</td>
<td>O_F t+1 + O_H t+1 (O_F t+1 + O_H t+1)</td>
<td></td>
</tr>
<tr>
<td>Demonstration</td>
<td>O_F t+1 + I_F t+1 + L_H t+1 + O_H t+1 I_F t+1</td>
<td>O_F t+1 + O_H t+1 (O_F t+1 + O_H t+1)</td>
<td></td>
</tr>
<tr>
<td>Enclave</td>
<td>O_F t+1 + I_F t+1 + L_H t+1 + O_H t+1 I_F t+1</td>
<td>O_F t+1 + O_H t+1 (O_F t+1 + O_H t+1)</td>
<td></td>
</tr>
</tbody>
</table>

Source: the authors.

Note: t = time
advantages occurs. From our analysis, we can classify inter-firm linkages according to their degree of intensity: from low to high. Indirect linkages are low intensity due to the lack of direct resource transfer among firms; transactional linkages are moderate (i.e. local sourcing) to high intensity (i.e. subcontracting), depending on the extent of resource transfer; and contractual and collaborative linkages are high intensity due to the potential for reciprocal resource exchange.

**Step 3: IDP stages**

Due to the high number of possible OLI permutations, individual country trajectories and possible linkage combinations taken by affiliates, it is difficult to map an exact relationship between micro-level inter-firm linkages, changes to OLI and stages of the IDP. However, we have attempted to show the interplay between these variables in figure 2, which illustrates how linkages of different intensity are associated with different stages of the IDP, as well as the expected changes to the OLI configuration over time.

**Figure 2. OLI configuration, linkage intensity and IDP stages**

![Figure 2](image-url)

*Source: the authors.*
Countries in Stage 1 of the IDP are unlikely to achieve any linkages due to the poor accessibility of $L_H$-advantages, weak $O_H$, and negligible FDI. At best, the entry of TNCs into enclave environments may encourage weak demonstration or worker mobility effects. The government acts as the major driver for progression into Stage 2 by developing $L_H$-advantages, such as basic infrastructure, education and market-oriented institutions. Resource seeking inward FDI emerges to take advantage of natural assets and low labour costs. If protectionist policies are in force, they encourage the entry of import-substituting, market seeking investment. Inward FDI directed to countries in Stage 2 is associated with the intra-firm (parent firm to affiliate) transfer of intangible assets, such as technology, trademarks and managerial/organizational skills (Dunning and Narula, 1996). Initially, internalization ($I_F$) of such $O_F$-advantages is high, as affiliates have little to gain from working closely with domestic firms, although low intensity linkages such as local sourcing and the supply of standardized goods and services may occur. Competition between affiliates and domestic firms also encourages internalization ($I_F$) by affiliates.

However, as countries shift from Stage 2 to Stage 3, a process driven by both government policies and FDI activities, we can see the gradual evolution of the OLI configuration in figure 2. $L$-advantages continue to improve, encouraging both market seeking and efficiency seeking inward FDI. However, the most crucial change is the upgrading of $O_H$, in particular created assets such as human skills and knowledge, innovation and technology. This has a number of beneficial effects. First, it encourages linkage formation between affiliates and domestic firms. Second, it improves the absorptive capacity of domestic firms, enabling them to benefit more from both demonstration effects and transactional linkages. Third, it enables domestic firms to compete more successfully with locally based affiliates in existing or emerging industries.

As $O_H$-advantages continue to develop, competition in selected industries intensifies, and affiliates introduce more sophisticated $O_F$-advantages to compete against local competitors (Dunning and Narula, 1996). This may be achieved
through intra-firm transfer of technology and innovation from parent firm, increased emphasis on the international coordination of advantages, and/or increased local development, innovation and adaptation of products and processes by affiliates in a host country. Domestic firms, if not targets of strategic asset-seeking investments by affiliates, are often able to participate in the periphery of this local development activity. Many also engage in outward FDI to countries in Stages 1 and 2, which helps counter rising labour costs at home, or even to later stage countries to acquire assets and capabilities (Barry, Görg and McDowell, 2002; Chen and Chen, 1998; Makino et al., 2002). As figure 2 shows, the combination of these effects prompts the upgrading of both $O_H$ and $O_F$ advantages, as full $I_F$ is relaxed. Affiliates become more embedded in the local economy via higher intensity linkages with domestic firms that involve the transfer of resources and assistance.

These trends continue with the shift to Stage 4. Stage 4 countries are distinguished by developed-country status, high levels of $O_H$- and $L_H$-advantages and outward FDI based on created assets and capital-intensive activities (Dunning, Kim and Lin, 2001). Governments adopt the role of facilitator of economic activity, while inward, and especially outward FDI, are important to the continued upgrading of $O_H$-advantages. Inward FDI is increasingly strategic asset seeking or asset augmenting in nature. In addition to mergers and acquisitions, affiliates engage in strategic alliances and other collaborative arrangements with domestic firms in order to access $O_H$- and $L_H$-advantages embodied in host country firms and industries. TNCs are increasingly looking for locations that contribute to asset augmentation through complementary technology, innovation, capabilities, and competences (Narula and Dunning, 2000). Rather than the simple transfer of ownership advantages that occurs via acquisition, collaboration presents the opportunity for both firms to upgrade $O$-advantages. Figure 2 shows how the internalization ($I_F$) of $O$-advantages declines with the transition to Stage 5 (we have not shown $I_H$, but this would show a similar trend), as affiliates engage in more high intensity linkages with domestic firms.
Outward FDI traditionally surpasses inward FDI at Stage 4, and is motivated by trade, market, and asset seeking objectives. Growing international experience and the cross-border organization and acquisition of resources contributes to $O_H$-advantage upgrading. Alternative trajectories, where outward FDI still trails inward FDI, are associated with the underdevelopment of $O_H$ (Duran and Ubeda, 2001). However, the transition to Stage 5 requires the upgrading of $O_H$ in line with other Stage 5 countries. Figure 2 indicates that, as countries move towards Stage 5, the differences among $O_F$- and $O_H$-advantages converge and start to level off. This is evidence of cross-hauling of investment among countries in Stage 5, as $O_H$- and $O_F$-advantages become more complementary and competition is increasingly centred on product differentiation and created intangible knowledge assets. Inward FDI from earlier stage countries seeking to acquire or locate in close proximity to $O_H$-advantages may also contribute to linkages and resource exchange. Over time, there also may be evidence of the hollowing out of $O_H$-advantages due to reverse spillovers (Driffield and Love, 2003). Thus, while still having high levels of competition and transaction linkages, Stage 5 countries are likely to achieve higher intensity linkages than achieved in Stage 4, particularly via inter-firm collaboration.

Exploring the black box of the IDP: discussion and concluding remarks

This article investigates the black box of the IDP – how domestic firms upgrade their resources and capabilities via linkages with foreign affiliates, thus eventually being able to undertake outward FDI independently. Our primary objective is to explain the workings of this black box: first by investigating the types and intensity of resource transmission mechanisms, then by exploring relationships between linkage type, changes to the OLI configuration and progression on the IDP trajectory by a host economy.

The first contribution of this article is its theoretical investigation of non-equity, inter-firm resource transfer
mechanisms between foreign affiliates and domestic firms. The impact of FDI on host country firms can be better understood by evaluating the extent and intensity of a wide range of non-equity linkages – demonstration, competitive, transactional, contractual and collaborative. The inclusion of the complete spectrum of possible transmission mechanisms as well as their intensity captures the likely extent of diffusion and transfer of \( O_F \)-advantages, enabling the extrapolation of the outcomes for domestic firm development.

The second contribution of this article is its explanation of how the process of upgrading of \( O_F \)- and \( O_H \)-specific advantage might occur over time at the micro level. This process differs according to the OLI configuration of foreign entrants, which the authors expanded to include the ownership-specific advantages of host country firms (\( O_H \)) and alternative organizational routes such as inter-firm linkages and collaboration. We suggest that linkage type and intensity influence the OLI configuration and as well as the process of upgrading.

Third, our investigation suggests that in addition to GDP per capita and other macro-level measures of development, firm-level indicators (such as the intensity of linkage formation and domestic firm capability) are useful to evaluate a country’s progression on the IDP. Specifically, our article provides support for the notion suggested by Duran and Ubeda (2001) that outward FDI at the firm level might be more closely linked to local competence (\( O_H \)) development, rather than a level of GDP or specific IDP stage. It also addresses other methodological problems raised with regard to the use of the aggregate measure of inward and outward FDI stock (NOI). Outward FDI from a host country may not be undertaken by indigenous firms, but by foreign affiliates, thus perhaps overestimating the level of host country firm capability at later stages of the IDP (Bellak, 2001). Thus, we emphasize the importance of understanding the extent of affiliate-domestic firm interaction and whether this leads to the upgrading of host country firm capabilities (and, ultimately, outward FDI), rather than just affiliate upgrading.
This distinction is masked in most aggregate industry-level studies of linkages and spillovers.

Fourth, we support literature that stresses the importance of mutually reinforcing host country characteristics – government policy, infrastructure and education, the attraction of appropriate inward FDI, and the development of $O_H^-$-advantages (Ozawa and Castello, 2001; Narula, 1996). Economic upgrading at the macro level is the result of a complex set of relationships between the $O_F^-$-advantages accompanying inward investment, $L_H^-$-specific advantages and domestic firm $O_H^-$-advantages, and the means by which firms organize these advantages at the micro level. We find that inter-firm linkage formation is another important contributor to a virtuous cycle of development; but in order to obtain maximum benefit from inward FDI, the simultaneous development of $L_H^-$ and $O_H^-$-advantages is crucial. It follows, therefore, that not only do host countries exhibit different propensities for linkage formation in different stages of the IDP, but also that linkage formation is less likely and less beneficial for earlier stage countries, where governments play a more important role in the initial development of $L_H^-$ and $O_H^-$-advantages (Dunning and Narula, 1996). Types of FDI and types of linkages (and their intensity) evolve as the OLI configuration changes. This, in turn, prompts the critical transition process from earlier stages to later stages of the IDP trajectory for a host country. For countries shifting from Stage 2 to 3, linkages are among a set of factors driving development. In the shift to Stages 4 and 5, where the need for knowledge-based assets is paramount, linkages take on more prominence as alternative asset augmentation mechanisms. This finding is supported by previous research that found that countries with higher levels of structural, technological and human capital development benefit more from inward FDI spillovers (Borensztein et al., 1998; Bengoa and Sanchez-Robles, 2003).

In conclusion, the investigation of micro-level mechanisms of host country development in the form of non-equity inter-firm linkages improves our understanding of how
host country firms upgrade their $O_H$-advantages, enabling them to contribute to host country economic development at the macro level. Specifically, we propose that the contribution of inward FDI to a country’s stage of economic development is positively related to the degree of linkage intensity at the firm level. Linkage intensity can be defined as the extent to which firms engage or interact with each other through transactional, contractual or collaborative linkages. Central to the concept of intensity, therefore, is the extent to which firms exchange, transfer, share or develop resources via linkages. Our theoretical investigation of inter-firm linkages supports the notion that foreign affiliates exert developmental impacts at the micro (firm) level that are obscured by macro-level analysis.

Areas for future research include testing of the relationships between linkage intensity, the extent of externalization of $O$-advantages by affiliates and the development of $O_H$-advantages by domestic firms, and the relationship between $O_H$-advantage augmentation and a host country’s progression through the stages of the IDP trajectory.

References


