



A general TCE model of international business institutions: Market failure and reciprocity

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Abstract

In this study I propose a general transaction-cost economics (TCE) model of international business institutions, in which cross-border transactions can be conducted at multiple market levels (e.g., output, asset, and equity), and the buyer–seller relationship can go both ways (A sells to B, and B sells to A). This general model addresses two major gaps in the literature. First, although market failure is the driving force behind the rise of multinational enterprises (MNEs), most researchers have focused on the failure of a single market without exploring the presence of substitute markets for cross-border transactions. Second, many previous studies have begun their analysis with a bilateral setup between an MNE and an indigenous firm (e.g., a licensing agreement), but concluded with a unilateral decision made by the MNE to evade the indigenous firm (in the case of direct investment). In bridging the two literature gaps, I propose a general TCE model to integrate all institutional modes available to firms for governing international business, such as licensing, outsourcing, acquisitions, and joint ventures. Built on a multi-market framework, my analysis reveals that the choice of the optimal international business institution is tantamount to the selection of the most efficient market to conduct cross-border transactions. Drawing on a bilateral setup, it explicitly recognizes the power of reciprocity in solving the problem of market failure. This distinct approach points out promising directions for future researchers to advance international business studies, particularly after my transaction-level analysis has been expanded to also consider institutional contexts and firm capabilities.

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INTRODUCTION

The *institutional* modes used by firms to govern *international business* can be classified into two major groups: contractual modes (e.g., licensing, countertrade, or outsourcing) and equity modes (e.g., joint ventures, acquisitions, or wholly owned subsidiaries).¹ Earlier studies on international business have examined the rise of multinational enterprises (MNEs) that chose direct investment (i.e., an equity mode) over other contractual modes such as licensing to exploit firm-specific assets in foreign markets (Buckley & Casson, 1976; Dunning, 1988; Hennart, 1982; Rugman, 1981). More recent studies have analyzed the equity modes used by MNEs to carry out direct investment, including the decision between wholly owned subsidiaries and joint ventures (Beamish & Banks,

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1987; Buckley & Casson, 1996; Hennart, 1988), or the choice between greenfield entities and acquisitions (Caves & Mehra, 1986; Hennart & Park, 1993; Kogut & Singh, 1988). Surprisingly, the two streams of literature on contractual and equity modes have thus far remained largely independent of, if not separate from, each other.

Nonetheless, one still can find a common driver at the heart of these studies – that is, *market failure*. For example, a high cost of writing and executing licensing contracts is the main reason why some firms exploit their technological advantages abroad through direct investment (see Caves, Crookell, & Killing, 1983; Davies, 1977; Pisano, 1989). The rise of MNEs, indeed, has been attributed to the failure of various intermediate input markets, including the market for technology (Buckley & Casson, 1976; Dunning, 1988; Hennart, 1982; Rugman, 1981).² Market failure is also the reason why MNEs choose certain equity modes to enter foreign countries. Joint ventures, for example, are often used by MNEs to borrow complementary assets that are controlled by indigenous firms but are hard to procure from the external market – the so-called *non-marketable* assets (Beamish & Banks, 1987; Gomes-Casseres, 1989; Hennart, 1988).

Another feature that can also be seen in earlier studies of international business institutions is the unequal status of indigenous firms in relation to MNEs. The market-failure approach to international business is based on a dyadic setup that covers an MNE and an indigenous firm. However, the analyses often result in a unilateral solution chosen by the MNE to exclude the indigenous firm. In the traditional licensing-vs-investment paradigm, for instance, the failure of licensing contracts, which must be signed by two parties (i.e., a dyadic setup), will lead to direct investment, which represents a unilateral decision made by MNEs to exploit technological assets abroad without the input of indigenous firms (Buckley & Casson, 1976; Hennart, 1982). Likewise, if an MNE cannot easily form a joint venture with an indigenous firm (a bilateral agreement), it may unilaterally set up a wholly owned subsidiary (Anderson & Gatignon, 1986; Gatignon & Anderson, 1988). As another example, where an acquisition (a dyadic arrangement) is too difficult to negotiate and contract, the MNE may bypass the target firm with the unilateral decision to start up a greenfield entity instead (Caves & Mehra, 1986; Chen & Zeng, 2004; Hennart & Park, 1993).

Apart from the two general themes that cut across the literature (i.e., market failure and the unequal role of indigenous firms), the current literature does not envision a general model that covers all potential international business institutions. There are two reasons for this literature gap (which I will explore more thoroughly later in the paper). First, while MNEs and indigenous firms may organize their cooperation at multiple market levels (i.e., output, asset, and equity), prior research has often focused on the failure of a single market, and has not considered the existence of substitute markets. Second, without granting MNEs and indigenous firms an equal status, previous research does not take a reciprocal view to identify all potential solutions to market failure, including those that also involve indigenous firms.

This study bridges these literature gaps by proposing a general transaction-cost economics (TCE) model that can integrate under a single umbrella all institutional modes (both contractual and equity) of international business. In the following pages, I first elaborate two major research gaps by reviewing the literature on international business. Then, I draw my integrated model, wherein cross-border cooperation can be organized at multiple market levels, and reciprocity also plays a role in resolving the market failure issue. Next, I identify several directions to extend this general TCE model and suggest its implications for future research before I conclude the paper.

LITERATURE REVIEW

The theory of the MNE can find its origin in the puzzle surrounding why firms exploit their proprietary assets internationally through direct investment when they could choose instead to *rent or sell* such assets to indigenous firms through market transactions (see, e.g., Buckley & Casson, 1976; Dunning, 1988; Hennart, 1982; Rugman, 1981). If technologies developed in one country can also be profitably exploited in another (Rugman & Verbeke, 2001, 2003), for instance, their owners should license such technologies to indigenous firms and avoid the liability of foreignness in managing their own subsidiaries in the target country (Hymer, 1976; Zaheer, 1995). Unless licensing is too costly to negotiate and implement (Davidson & McPetridge, 1985; Hennart, 1989), it is not necessary for firms to internalize technology exploitation through direct investment. This licensing–investment dichotomy in internalization theory, or the more general market-hierarchy paradigm in



transaction cost analysis, has been widely used to explain the rise of MNEs (also see Williamson, 1975, 1985).

If the market for technology licensing functions perfectly, MNEs can collect from indigenous firms a fee larger than or at least equivalent to the profit that they can generate by exploiting their technological assets internally through direct investment (Tece, 1981). This view implies that indigenous firms possess some capabilities complementary to the technological assets that MNEs seek to exploit in the host country (e.g., production capabilities; Rugman & Verbeke, 2002). Such complementary capabilities could also be innate to local players and hence difficult for outsiders to replicate. By prescribing direct investment as a solution to the failure of the licensing market, the original theory does not explain how an MNE accesses complementary assets owned by indigenous firms, which have been excluded from the unilateral decision made by the MNE to internalize technology exploitation.

Another research stream called *entry mode choice* has resolved the issue of asset complementarity, where access to complementary assets controlled by indigenous firms dictates the optimal equity mode chosen by MNEs to enter foreign countries (Buckley & Casson, 1998a, b). The default mode is for MNEs to start up greenfield entities without splitting ownership with indigenous firms, so long as they can handily replicate complementary local assets internally or purchase them from an external market. Alternatively, MNEs can gain access to complementary local assets by taking over the indigenous firm that owns them (Anand & Delios, 2002; Brouthers & Brouthers, 2000; Hennart & Park, 1993). If the purchase of complementary local assets *per se* and the acquisition of their local owner are both too costly to negotiate and contract, MNEs can instead set up a partially owned subsidiary and then leverage this co-ownership relationship to enlist complementary local assets from their joint-venture partner (Beamish & Banks, 1987; Gomes-Casseres, 1990; Hennart, 1988).

The above passages show that the cooperation between an MNE and an indigenous firm can be organized at three market levels. First, cross-border transactions can be conducted in an *output market*. For instance, a technology developer can sell R&D output to a product manufacturer through technology licensing. This is also called the rental market (or the service market), where the developer rents the right to use its proprietary know-how to

the manufacturer (i.e., sells its R&D service). Second, the developer–manufacturer cooperation can be organized in an *asset market*, where the two specialists sell to each other the core assets that they must employ in serving the output market (instead of selling the service based on such assets, or the right to use them). By using the production assets procured from the manufacturer (e.g., plant machinery), for instance, the developer can integrate forward into technology exploitation through a greenfield entity started in the target country. Third, if the output and asset markets have both failed, the parties can move their cooperation to the *equity market*, where the developer acquires the operation of the manufacturer (together with all of its assets) to integrate forward into technology exploitation, which is an international acquisition.³

Cross-border transactions can be conducted not only at multiple market levels but also in two opposite directions. Without selling its R&D services in the output market, for instance, a developer can procure production services from a manufacturer, a practice called contract manufacturing or product outsourcing. Depending on the direction of the developer–manufacturer transaction, therefore, the buyer–seller relationship can go both ways at the output level. Likewise, two-way transactions can be conducted at the asset level, whereby the developer either purchases production assets (plant machinery) from the manufacturer to integrate forward into technology exploitation, or sells R&D assets (lab equipment) for the manufacturer to integrate backward into technology exploration. Finally, the two parties can internalize technology development and product manufacture by acquiring each other's operation (i.e., an R&D lab or a production plant) through two-way transactions conducted at the equity level.

The review has exposed two limitations in the international business literature. First, although the cooperation between MNEs and indigenous firms can be organized at multiple market levels (i.e., output, asset, and equity), prior studies usually focus on the failure of a single market, and do not consider the use of substitute markets to structure international business activities. A single-market focus is problematic, because the solution to market failure might well be specific to the market interface that has been chosen to conduct cross-border transactions. Second, without granting indigenous firms an equal status, previous studies often

prescribe a unilateral solution for MNEs to bypass a failing market. This unilateral approach does not take a reciprocal view to identify all potential solutions to market failure, particularly those that require the joint actions of the two parties.⁴

In the next section I bridge these two literature gaps by proposing an integrated TCE model of international business institutions. My approach is unique in that it specifies three market levels that MNEs and indigenous firms can use to organize their cooperation, and maintains a bilateral setup that recognizes the power of reciprocity in resolving the issue of market failure.

MARKET FAILURE AND RECIPROCITY

For simplicity's sake, my analysis is built on the developer–manufacturer cooperation that is widely observable in the semiconductor industry, where integrated circuits (ICs) designed by one firm are usually fabricated by another. Moreover, the design house and the fabricator are often located in two nations that enjoy comparative advantages (i.e., location advantages) in a given area – in my example, the US in R&D and Taiwan in manufacturing. This two-party/two-nation setup, which has served as the building block of international business theories (e.g., Dunning, 1988), can be handily expanded to cover other cross-border cooperation (for instance, between a foreign engine supplier and a local automobile assembler, between a foreign hotel manager and a local hotel developer, or between a foreign manufacturer and a local retailer: see Chen, 1996).

The need for the design house and the fabricator to cooperate in serving a common customer (i.e., the final user of an IC) suggests that one party possesses certain proprietary assets that are complementary to the assets of the other. The design house, for instance, may run a lab installed with its own design tools, whereas the fabricator may operate a plant equipped with its own testing devices. The designer–fabricator cooperation can potentially be organized through two-way transactions conducted at three market levels:

- *Output level:* The design house licenses its IC design to the fabricator for production (i.e., by selling its R&D output or design services to the fabricator), or subcontracts IC production based on its design to the fabricator (i.e., by buying production output or fabrication services from the fabricator). In either case, it is the buyer who delivers the IC to the final customer.

- *Asset level:* The design house sells the core asset upon which its R&D output is based (i.e., the design tools), or the fabricator sells the core asset upon which its production output is based (i.e., the testing devices). The buyer then integrates IC design and IC fabrication through a greenfield investment made in the target country, using the core asset supplied by the cooperating partner.
- *Equity level:* The design house sells the business that controls its core asset (i.e., the lab), or the fabricator sells the business that owns its core asset (i.e., the plant) to the cooperating partner. In either case, the buyer makes an international acquisition to integrate IC design and IC fabrication within the same company.

At the output or asset level, the designer–fabricator transaction can be conducted separately in two ways (A sells to B vs B sells to A), or the two transactions can be conducted concurrently (A sells to B plus B sells to A). Likewise, there are two possible directions for the designer–fabricator transaction to be conducted at the equity level (A acquires B vs B acquires A). An acquisition can be further divided into two partial deals conducted sequentially in the equity market (e.g., 65% equity now and 35% later). As I will argue below, the use of two concurrent or sequential transactions to structure the designer–fabricator cooperation creates a reciprocity effect to regulate the behavior of the parties, and thereafter boosts market efficiency at all three levels.

Output Market

The market-vs-hierarchy paradigm in transaction cost economics, in particular the licensing-vs-investment dichotomy, has been widely used to explain the choice of direct investment over licensing contracts by MNEs to exploit their proprietary technologies in foreign countries. In a recent study (Chen, 2005), I extend the theory of the MNE to illustrate that the licensing-vs-investment model does not cover all contractual modes available to firms for organizing international technology transfer. If products developed by one specialist firm can be profitably manufactured by another specialist firm across borders, for instance, the parties can sell their output to a common customer without having to deal with each other directly. To use the IC example, the customer can purchase a product design from the design house in the US but hire the fabricator in

Taiwan to make it. As long as the customer possesses sufficient information to hold the design house and the fabricator *separately* responsible for the value of their respective outputs, the two specialists can co-market the IC to this common customer while keeping an arm's length distance from each other, an institutional mode that I call *arm's length co-marketing*.

Co-marketing, nevertheless, often suffers from information breakdowns in the final output market (ICs, in my example). The quality of an IC, for instance, depends on the joint efforts of the design house and the fabricator, but the customer may not have enough information to separate the performance of one party from that of the other. In the presence of *performance inseparability*, the customer may mistakenly assign to the design house the credit (or blame) for product success (or failure) that should be attributed to the fabricator, or vice versa. As a result, the two specialists must conduct contractual transactions directly with each other to settle misplaced gains or losses in the IC market (Chen, 2005). In other words, the two parties must keep a contractual relationship to smooth out the design/fabrication interface so that they can co-market their joint output to a common customer under performance inseparability, another institutional mode called *contractual co-marketing*.⁵

Under the condition of performance inseparability, the use of direct contractual restraints to smooth out the design–fabrication interaction can be very costly. In this case, one party can simply sell its output as an intermediate input to the other, who then on its own markets the final product to the customer. This *single-party marketing* can be done in two ways. First, through *technology licensing*, the design house can sell R&D services to the fabricator, who uses the licensed design to make an IC for the customer. Second, through *subcontract manufacturing* (or *product outsourcing*), the design house can purchase production services from the fabricator and resell an outsourced IC to the customer. In both cases, the customer holds only a single party responsible for the success or failure of the final product, eliminating the performance inseparability problem.⁶ In cases where technology licensing and product outsourcing are both too costly to negotiate and contract, either the design house or the fabricator can internalize the designer–fabricator transaction within a single company by making direct investment in each other's home country.

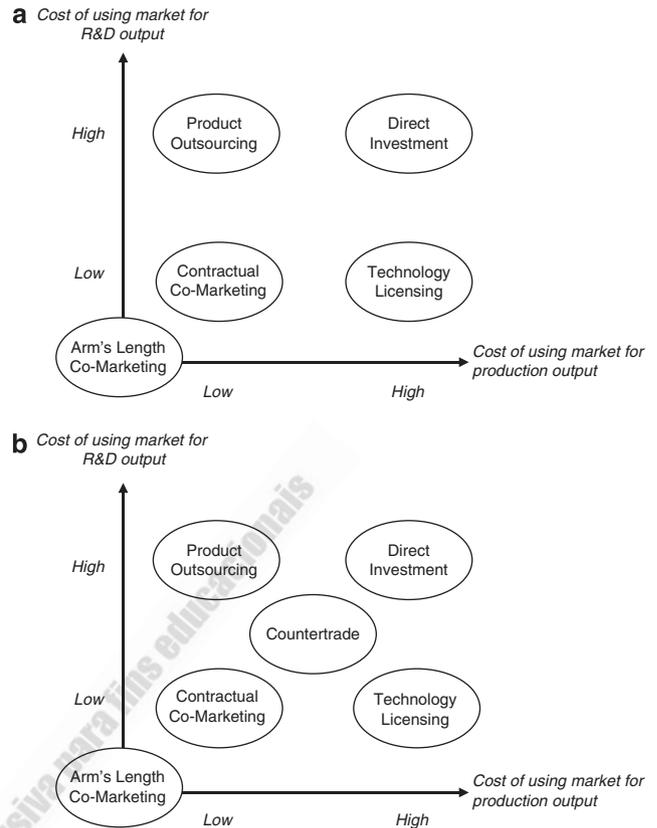


Figure 1 Contractual modes vs direct investment: (a) extended internalization theory (Chen, 2005); (b) incorporating countertrade into internalization theory.

The above analysis has extended internalization theory from the *one-dimensional* market-contract-hierarchy continuum into a *two-dimensional* space that provides multiple contractual modes to govern the designer–fabricator cooperation. As shown in Figure 1a, the x-axis captures the cost of using the market for production output; the y-axis measures the cost of using the market for R&D output. The origin of the space represents *arm's length co-marketing*, whereby the design house and the fabricator co-market an IC to a common customer while maintaining an arm's length distance from each other. The parties can keep co-marketing their joint output to the customer if contractual restraints can be cheaply imposed through both output markets to address the problem of performance inseparability, an arrangement referred to as *contractual co-marketing*. If the cost of using the market for R&D output is low but the cost of using the market for production output is high, the design house can license its IC design to the fabricator, that is, it can employ *technology licensing*.

Or, the design house can subcontract IC production to the fabricator through *product outsourcing* if the cost of using the market for production output is low but that of using the market for R&D output is high. In cases where the two output markets have both failed, the designer–fabricator cooperation can be internalized within a single company through *direct investment*. In this extended model, the choice of the optimal international business institution is contingent upon the relative costs of using two output markets, instead of the absolute cost of using a single one, as suggested by the original theory of internalization.

This extended space, nevertheless, has two limits. First, with the one-dimensional market-contract-hierarchy continuum being extended into a two-dimensional space, all contractual modes are now pushed to the corners, thus creating an empty field at the center. This empty center is similar to the void middle in the original market-vs-hierarchy dichotomy, which does not reflect the reality that most transactions are contractual in nature (Stinchcombe, 1990). As noted earlier, some scholars have recognized the existence of a third mode that is neither market nor hierarchy (Dhanaraj & Parkhe, 2006; Hakansson & Johanson, 1993; Powell, 1990). Others have also argued the existence of network MNEs that comprise different types of cross-border organizations (Dunning & Lundan, 2008a; Guillen, 2003). Because pure market and pure hierarchy rarely exist (Perrow, 1986), the market-vs-hierarchy dichotomy has been expanded into a continuum with a swollen middle containing multiple contractual (or hybrid) modes (Hennart, 1993).

Second, this two-dimensional space, although featuring a bilateral setup, does not consider the power of reciprocity in alleviating market failure. Economic analyses usually portray human actors as self-interested and operating with guile (Williamson, 1985). In real life, however, economic agents tend to behave in a reciprocal way (Fehr & Gächter, 2000), in that kindness can generate kindness if inter-firm cooperation is organized through two concurrent or sequential transactions (rather than a single one). This reciprocity effect can go beyond simple *quid pro quo* and feature a self-enforcing power that regulates the behavior of economic agents, where one party who acts to help or hurt the other ends up helping or hurting itself (Telser, 1980; Williamson, 1983). While the above extended model of internalization theory covers

two-way transactions (i.e., licensing *or* outsourcing) between the developer and the manufacturer of a product, it does not consider the concurrent use of both transactions to organize international technology transfer. This either–or approach overlooks the power of reciprocity to address the issue of market failure.

The two limits can be resolved by filling the empty center of the two-dimensional space with an institutional mode that features the concurrent use of the two output markets to structure the developer–manufacturer cooperation. A developer, for instance, can license its technology to a manufacturer and also promise to buy back a portion of the final product in which the licensed technology is embedded. To outsource a product from the manufacturer, the developer can also rent some related technology to its subcontractor for making the product. The concurrent use of both output markets amounts to countertrade, a little-known business practice that can be adopted to organize international technology transfer (Kogut, 1986; Mirus & Yeung, 1986). For example, Volkswagen, when selling an assembly line to former East Germany, also agreed to buy back one-third of the plant's output (Mirus & Yeung, 1986). This deal can be treated as countertrade, in which Volkswagen not only sold assembly technologies to, but also bought back cars from, the licensee (or, to frame it differently, Volkswagen not only outsourced cars from East Germany, but also licensed the related production technologies to its subcontractor).

Countertrade is usually equated with barter that serves to ease foreign exchange shortages. In reality, it represents two concurrent transactions that are both settled through a cash payment. In another countertrade example, the British company ICI built a methanol plant for the former Soviet Union and promised to buy back a portion of the output (Hennart, 1989). In this deal, ICI received \$250 million for the plant and paid \$350 million for 20% of its output over a 3-year period. With licensing and outsourcing being bundled into a single contract, the fee that the developer collects from the manufacturer for the licensed technology depends in part on the outlay that it pays for the outsourced product, or vice versa. As I will discuss in more detail later, countertrade can build a reciprocity effect into the developer–manufacturer relationship to regulate the behavior of the two specialists and thereafter help to overcome the shortcomings of technology licensing and product



outsourcing, which, if implemented separately, can be too costly to negotiate and contract.

The shortcomings of technology licensing, especially when it is done across borders, have been well documented in the economics and business literature (e.g., Anand & Khanna, 2000). To begin with, it is hard for a developer to price its knowledge, because the value of a technological asset is contingent upon other uncertain factors, such as how profitably a manufacturer can exploit it, or how soon it may become obsolete (Teece, 1977, 1981). Likewise, the manufacturer may have difficulty verifying the quality of the technology that it licenses from the developer. Moreover, technology transfer can be incomplete, since the developer may withhold tacit knowledge from, or refuse to provide continuous technical support to, the manufacturer (Hennart, 1989). The developer must also take actions to prevent the manufacturer from appropriating the licensed technology or leaking it to an illegitimate user (Caves et al., 1983). These shortcomings of technology licensing may occur even in the absence of opportunism – that is, the parties involved may intend to transact in good faith initially, but may later find themselves forced to renege on their contractual obligations under new situational considerations (e.g., scale-back of overcommitment; Verbeke & Greidanus, 2009).

Meanwhile, product outsourcing is not free of contracting problems either. Outsourcing means that a developer transfers all relevant design and production knowledge to a manufacturer, buys back the final product based on the transferred knowledge, and resells it to a customer under its own brand (i.e., without revealing the identity of the supplier; Chen, 2005). For product outsourcing to work, the developer must make its technological assets accessible to the subcontractor, and consequently may lose control over its proprietary know-how to the manufacturer. What makes this control issue worse in product outsourcing is that the developer now transfers its technology to the subcontractor for free. Meanwhile, the manufacturer lacks incentives to optimize its production efforts, since it sells the outsourced product at a pre-negotiated price back to the developer, who alone bears the blame for product failure in the consumer market. These problems of product outsourcing may result from intentional deceit (i.e., opportunism; Williamson, 1985), or from benevolent preference reversals in response to unforeseeable changes in the environment

(e.g., re-prioritization; Verbeke & Greidanus, 2009).

As I will show below, countertrade, which is based on the concurrent use of two output markets to organize developer–manufacturer cooperation, can create a reciprocity effect to mitigate the shortcomings of technology licensing and product outsourcing.

To start, pricing technology-based output is easier in countertrade than in licensing. In countertrade, the developer not only collects a fee for its technology from the manufacturer but also makes a payment to buy back the final product. The developer is less motivated to inflate the licensing fee, because doing so will drive up the price of the product based on the licensed technology. It must incur a loss in disposing of the bought-back product, offsetting the extra fee collected from the manufacturer. At the same time, the manufacturer can use the price that the developer offers to buy back the product as a signal to the value of the technology. This reciprocal effect found in countertrade makes it easier for the parties to agree on the value of a technology whose usefulness is not fully known beforehand (Williamson, 1983).

Cheating in technology transfer by the developer is also less likely to occur in countertrade. For instance, the developer is less motivated to transfer a flawed technology to the manufacturer, because doing so would damage the quality of the bought-back product. For the same reason, the developer has stronger incentives to provide continuous technical support, and less inclination to withhold know-how from its cooperating partner. Countertrade, therefore, can create a reciprocal effect that encourages the developer to pick a superior technology and pass all related information over to the manufacturer, who can now easily verify the value of the licensed technology and ensure complete knowledge transfer.

In product outsourcing, as pointed out earlier, there is a risk that the subcontractor may use inferior materials or bypass production procedures to save on operational costs. However, these shortchanges are less likely to occur in countertrade, because rather than shipping the entire output to the developer, as in pure product outsourcing, the manufacturer keeps a portion. One may contend that cheating on quality by the manufacturer is still possible if it is able to make two separate batches of output – one to keep and one to ship to the developer. Though this possibility cannot be ruled out completely, quality-cheating tends to

be less severe in countertrade compared with product outsourcing, which reduces the cost that the developer must incur to monitor plant operations.⁷

The developer of a technology always faces the challenge of safeguarding its knowledge, no matter how its technology is transferred to the manufacturer. The severity of this issue, however, varies across licensing, countertrade, and outsourcing. The worse-case scenario is most likely to happen in outsourcing, where the developer transfers its technology to the manufacturer for free, and technology loss is thorough and complete. In contrast, knowledge protection is less of an issue in licensing, because the developer not only collects a fee from the manufacturer for the right to use the technology but also can withhold know-how to prolong its technological lead. Although technology loss to the manufacturer is also thorough and complete in countertrade, the developer at least receives a payment for the transferred technology.

The incorporation of countertrade into internalization theory can resolve the limits of my extended model (Chen, 2005). As shown in Figure 1b, countertrade fills the empty center of the two-dimensional space. Thanks to the reciprocal effect created through the concurrent use of two transactions (licensing and outsourcing) to structure developer–manufacturer cooperation, the costs of using both output markets to organize international technology transfer are moderate. The significance of this extended model is that it differentiates these contractual modes that have traditionally been lumped in the swollen middle of the market-hierarchy continuum (namely, licensing, outsourcing, countertrade, and so on). Specifically, the choice of one contractual mode over another is determined by the relative costs of using the two output markets, either *individually* or *concurrently*, to conduct cross-border transactions.

Asset Market

As illustrated in the IC example, a design house and a fabricator can organize their division of labor at the output level to avoid the liability of foreignness in managing their own subsidiary. Should all contractual modes in Figure 1b fail simultaneously, one or both of the parties could then make direct investment in the other's home country, where the design house integrates forward into IC fabrication, or the fabricator integrates backward into IC design, through an equity mode. Either way, the

investing firm becomes an MNE that operates in more than one country. Hence direct investment can be treated as the *second-best* option for organizing cross-border cooperation that cannot be cheaply structured through one or both of the two output markets.

In their international expansions, as pointed out earlier, MNEs need certain capabilities that are innate to local firms but complementary to their own assets. The accessibility of such complementary local assets dictates one basic investment decision – that is, whether to pursue full or partial ownership (Beamish & Banks, 1987; Gomes-Casseres, 1989; Hennart, 1988). If there are no complementary local assets, or if such assets can be handily replicated internally, MNEs should control full equity of their foreign subsidiaries to avoid the burdens of managing co-ownership (Anderson & Gatignon, 1986). In the IC example, the design house could start up a wholly owned plant in Taiwan (which enjoys comparative advantages in production), or the fabricator could establish a wholly owned lab in the US (which enjoys comparative advantages in R&D). Because the ICs designed in one nation would be fabricated in another within the same company that needs no local assets, there would be no cross-border cooperation between two unaffiliated specialists (the *only* case in my model that is not based on a dyadic setup).

Even in the presence of *non-replicable* complementary local assets, the investing MNE may still control full ownership of its subsidiary by purchasing the target assets from indigenous firms, assuming that such assets are *marketable*. For instance, the design house could set up a wholly owned foundry to internalize manufacture, using production assets (e.g., testing devices) supplied by the fabricator. Or, the fabricator could establish a fully owned lab to internalize development, using R&D assets (e.g., design tools) procured from the design house. In both cases, the party who makes foreign direct investment also integrates IC design and IC fabrication by purchasing non-replicable assets from the cooperating partner, rather than by buying the output based on such assets (i.e., design or fabrication services). Simply put, the two parties have moved from an *output* to an *asset* market to organize their interdependence.

Yet the use of an asset market to organize the designer–fabricator cooperation requires the transfer not only of tangible properties but also of intangible capabilities across firms, and therefore

may involve a high transaction cost (Chi, 1994). In cases where complementary assets controlled by two firms are too difficult to replicate internally and procure externally, such non-replicable and non-marketable assets can be pooled inside a greenfield venture started jointly by the parties involved (Beamish & Banks, 1987; Hennart, 1988). When choosing direct investment over licensing to exploit technological assets in foreign nations, for instance, the investing MNE can split the ownership of a greenfield entity with an indigenous firm and then leverage this co-ownership relationship to enlist complementary local assets from the joint-venture partner.

The above analysis can be summarized through a two-dimensional space similar to the one shown in Figure 1. The core argument is that the party who can handily procure complementary assets from the other (i.e., whose own assets are harder for the other to procure) should start up a fully owned greenfield subsidiary to integrate technology development and product manufacture. If the costs of using the markets for R&D and production assets are both low, as shown in Figure 2a, the design house and the fabricator in the IC example can set up a wholly owned greenfield entity in each other's home country to integrate development and manufacture (full two-way greenfield). If only the market for production assets is efficient (i.e., the transaction cost is low), the design house can integrate forward into manufacture by starting up a fully owned plant in Taiwan (full forward greenfield). If only the market for R&D assets is efficient, the fabricator can integrate backward into development by creating a fully owned lab in the US (full backward greenfield). In cases where the two markets have both failed, R&D and production assets can be pooled within a greenfield venture created jointly by the two partners (greenfield joint venture). Thus the decision on using joint ventures or wholly owned subsidiaries to carry out greenfield investment hinges on the relative costs of using the markets for R&D assets vs production assets.

Note that this two-dimensional space differs from the two-by-two matrix used by Hennart (1988) to theorize joint ventures, which I reproduce as a two-dimensional space in Figure 2b. Whereas Hennart builds his matrix on the relative costs of using two *output* markets (i.e., A licenses to B or B licenses to A), my space is based on the relative efficiency of two *asset* markets (i.e., A sells assets to B or B sells assets to A). Hence Hennart's matrix predicts the

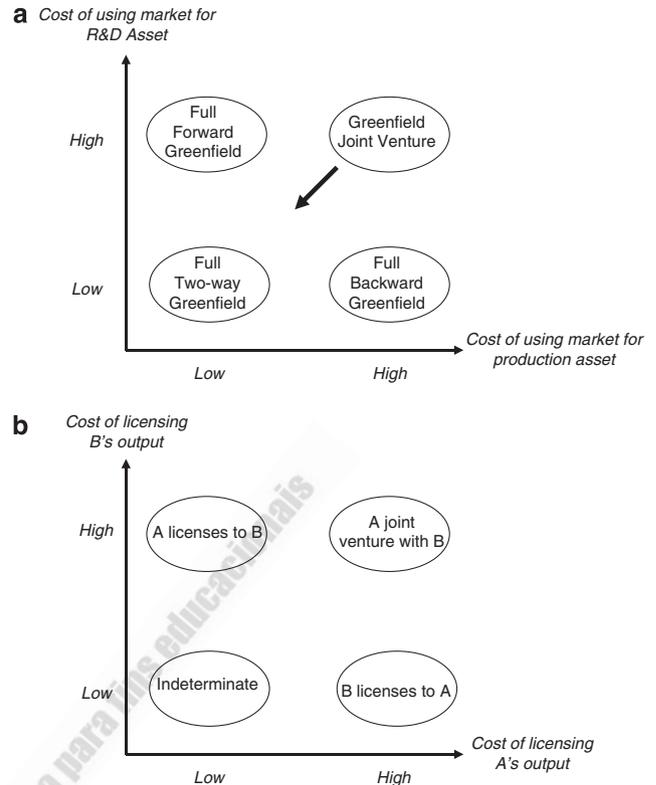


Figure 2 Theories of joint ventures: (a) full vs partial greenfield; (b) licensing vs joint venture (Hennart, 1988).

Note: The terms "forward" and "backward" imply a vertical value chain where upstream R&D is followed by downstream production.

choice between licensing and joint ventures without considering the availability of other contractual or equity modes (such as outsourcing and wholly owned subsidiaries). In contrast, my space captures the decision on joint ventures and wholly owned subsidiaries to carry out greenfield investment after the equity mode has already been chosen over other contractual modes to organize cross-border cooperation.⁸ In addition, my analysis requires joint ventures to be created through split ownership of greenfield entities, but Hennart also allows them to be formed through partial acquisitions of existing firms. (In my analysis of the equity market later in the paper, I will return to acquisitive joint ventures, or partial acquisitions.)

As shown in Figure 2, two companies may create a joint venture to pool within a single business entity complementary assets that are neither replicable nor marketable (see Balakrishnan & Koza, 1993; Beamish & Banks, 1987; Gomes-Casseres, 1989). However, the literature is rather vague as to

how such assets are brought together in a joint venture. This mechanism is usually summed up in a single sentence, that is, two partners bring their assets to a joint venture and get paid for their contributions from the profits earned by the venture (Hennart, 1988). This view suggests that the partners can evade two failing markets by pooling complementary assets within an independent legal entity wherein they share the ownership.

This rosy picture, however, is not what really occurs in joint-venture negotiations. A joint venture is established by two partners to pool complementary assets, carry out joint production, and split the joint profits based on their equity share. Because a joint venture is an independent legal entity that makes its own profit or incurs its own loss, the parent companies do not simply bring their assets to it for free, but contribute them to the joint venture at a fee (Ainuddin & Beamish, 2008). In other words, the partners can pool complementary assets within a joint venture only through negotiated market transactions. Obviously, co-ownership does not allow them to circumvent the two failing asset markets, but instead requires them to haggle in both markets.

Let me return to the IC example. In cases where all output and asset markets have failed to organize the designer–fabricator cooperation, a greenfield joint venture can be created to integrate development and manufacture within the same business entity that sells the IC to the customer. To make this joint endeavor work, as depicted in Figure 3, the two partners (a technology developer and a product manufacturer) must transfer their R&D and production assets to the joint venture. Such transactions cover not only intangible knowledge but also tangible goods (such as equipment, parts, and components). Accordingly, the partners generate income from the joint venture in two ways – by selling their asset to the joint venture at a fee (\$) and by splitting the joint profit based on their equity share ($\pi\%$).

The above analysis reveals a paradox that has so far remained unnoticed in the literature. I proposed earlier in this paper that MNEs are likely to choose direct investment over contractual modes to organize international technology transfer if the two output markets in Figure 1 have both failed. Further, they are inclined to choose joint ventures over wholly owned subsidiaries to carry out direct investment if the two asset markets in Figure 2 have also failed. Although joint ventures

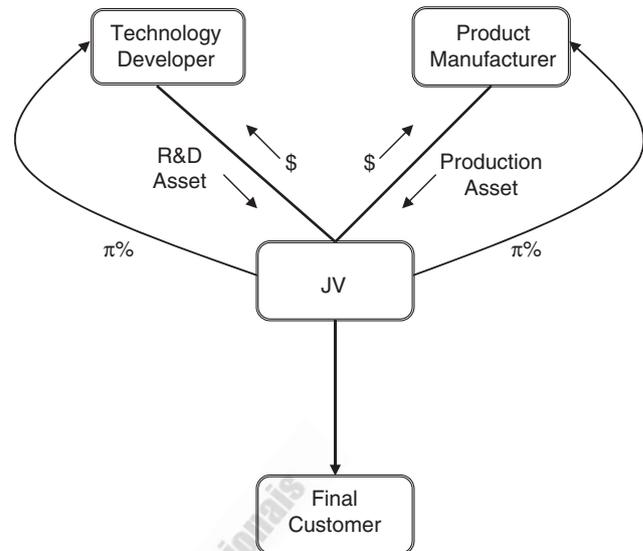


Figure 3 Structure of joint venture.

are driven by market failure, pooling complementary assets within a single business entity requires the use of the same asset markets that have already failed. If the cost of using a single market is considered high, how can one justify the concurrent use of two failing markets to structure a joint venture?

The solution to this paradox lies in the structure of joint ventures. As shown in Figure 3, the parties to a joint venture generate income by selling their asset bundle and splitting their joint profits. This co-ownership relationship can create a reciprocity effect to regulate the behavior of the partners in two ways. First, the use of two transactions to structure a joint venture allows the parent companies to reciprocate, in that cheating or sacrificing by one partner will prompt the other to counteract (i.e., *quid pro quo* or mutual forbearance; Buckley & Casson, 1988). If one party unjustifiably raises the price of its asset, for instance, the other will follow suit by inflating the price of its asset as well. Second, this reciprocal relationship features a *self-enforcing power*, where the partner who acts to help or hurt the joint venture will end up helping or hurting itself. In selling their assets to the joint venture, for instance, the two parent companies may gain from cheating or lose from sacrificing. All such gains or losses, however, will eventually be offset by the same magnitude of decrease or increase in their joint profits. Thanks to this reciprocity effect, the partners are more inclined to behave in good



faith, which in turn lowers the transaction costs that they must incur in using the two asset markets concurrently to structure the joint venture.⁹

This reciprocity effect found in co-ownership can clear the puzzle that joint ventures are, indeed, organized through two concurrent transactions that, if conducted individually, would be too costly to negotiate and contract. When cross-border cooperation is organized through a single deal, the parties involved are not always motivated to behave in good faith, because kindness cannot be reciprocated and ill-will cannot be paid back. The concurrent use of two transactions to structure a joint venture, on the other hand, allows unwarranted gains or losses in one transaction to be offset in another. Consequently, it becomes easier for the partners of a joint venture to come to terms. As shown by the arrow in Figure 2a, the partners incur a lower transaction cost in selling their assets to the joint venture through two markets, relative to what they must incur in dealing with each other directly through a single asset market.

Equity Market

The two asset markets in Figure 2, even though used concurrently, may still fail to support a joint venture. In this case, complementary assets controlled by two firms can be pooled within a single business only through mergers and acquisitions. As such, access to complementary local assets also affects another investment decision, namely, the choice of greenfield investment vs acquisition (Anand & Delios, 2002; Chen & Zeng, 2004; Hennart & Park, 1993). If complementary local assets are replicable or marketable, on the one hand, the investing MNE can start up a greenfield entity, which implies that there is no cross-border cooperation at all, or that such cooperation is organized through an *asset* market, as argued earlier. On the other hand, the investing MNEs can take over the local business that controls the target assets – that is, to embark on an international acquisition, whereby cross-border cooperation is organized through the *equity* market.

When motivated by the access to complementary local assets, international acquisitions can be made in two opposite directions. Let's return to my earlier IC example, where a design house in the US and a fabricator in Taiwan collaborate to serve a common customer. The designer can invest in Taiwan to integrate forward into manufacture by acquiring the business of the fabricator (e.g., a wafer

foundry). Or, the fabricator can take over the operation of the design house (e.g., an R&D lab) and integrate backward into development in the US. The direction of this equity transaction is determined by the relative costs of inspecting the acquisition target and enforcing the acquisition contract in two opposite ways – namely, who is better able to acquire the business of the other (A acquires B vs B acquires A).

The costs of executing acquisitions can be prohibitive, particularly when the acquired firms possess assets that are neither replicable nor marketable, thus causing the equity market to fail (Chen & Hennart, 2004). As suggested in previous studies (Balakrishnan & Koza, 1993; Chi, 1994; Hennart & Reddy, 1997; Kogut & Singh, 1988), the failure of the equity market may prompt the investing MNE to give up an acquisition altogether and to use instead a greenfield joint venture to elicit the target assets from their local owner. In other words, joint ventures are a substitute mode by which MNEs access complementary local assets when they have great difficulties acquiring the indigenous firm that owns the target assets.

Such a joint-venture solution to the failure of the equity market raises a question about the motive for partial acquisitions, in which MNEs take partial stake in an existing firm and thereby enter a joint-venture relationship with the seller (i.e., acquisitive joint ventures). In the failure of the equity market, as we have seen, joint ventures become the alternative way for two firms to pool complementary assets within a single business. To bypass the failing equity market, this joint-venture relationship should be created through split ownership of greenfield entities instead of through partial acquisitions of existing firms. As long as a greenfield joint venture can be successfully formed to pool complementary assets, the original motive for the acquisition (i.e., access to non-replicable assets) disappears. So, if co-ownership serves only as a way for two parent companies to pool complementary assets, the investing MNE has no apparent reason to acquire an indigenous firm partially and thereafter enter a joint-venture relationship with its previous owner.

The fact is that partial acquisitions not only occur but occur very frequently (Chen, 2008). For instance, Whirlpool acquired a 53% stake in the appliance division from Philips and used this joint venture to enter the European market. Through a partial acquisition of an ongoing operation, Ciba-Geigy also formed a 50–50 joint venture with

Corning to serve the medical diagnostics market in the US. After buying 47.5% equity of Rover, Honda became a joint-venture partner of British Aerospace, the parent of the acquired carmaker (Nanda & Williamson, 1995).

In partial acquisitions (i.e., acquisition joint ventures), the acquirers have the option to buy out (or the current owners to sell off) the remaining equity at a later time. Such a buyout (or sell-off) option can be an explicit contractual clause or simply an implicit understanding between the parties involved. In all of the partial acquisitions mentioned earlier, for example, a buyout option was stipulated explicitly in the contract. A similar option clause can also be seen in other deals. In General Motors' acquisition of a 20% stake in Fiat Motors, for instance, the Italian automaker held the option to sell off the remaining stake on a later date (*Business Week*, 2000). Likewise, when Wal-Mart acquired a 6.1% stake in the Tokyo-based department store Seiyu, it held the option to buy up to 33.4% by 2002, and up to 66.7% by 2007 (Belson, 2002).

The above examples seem to suggest that joint ventures can be formed as *real options* for MNEs to balance the risk–opportunity trade-off in international acquisitions (Kogut, 1991; Reuer & Tong, 2005). When using acquisitions to enter foreign countries, MNEs face the dilemma of taking the risk of early commitment or bearing the opportunity cost of delaying entry. By dividing a full acquisition into two sequential transactions (i.e., the partial offer and the buyout option), they secure an opportunity to expand internationally without making full capital commitments to a foreign firm of unknown value. They can exercise this buyout option to lay claim on full ownership at a later time if the true value of the firm turns out to be as good as, or even better than, their expectation. Otherwise, they simply forfeit the option to minimize their potential losses.

As I will elaborate below, a market-failure component can be instilled into the real-option consideration of international joint ventures. More specifically, the division of a full acquisition into two sequential deals can neutralize the two risk factors that plague the equity market – that is, pre-acquisition inspection of the targets and post-acquisition enforcement of the contracts.

MNEs making acquisitions abroad must identify a target firm and inspect its quality beforehand. Yet *ex ante* screening of acquisition targets can be challenging sometimes. Firms for sale are

frequently lemons, and those in good shape are available only at a price higher than their true value (Akerlof, 1970). Further, sellers typically know more about the value of their firm than potential buyers, especially when acquisitions are motivated by access to tacit and intangible assets owned by the target firms (Balakrishnan & Koza, 1993; Chi, 1994; Reuer & Koza, 2000). Adverse selection and information asymmetry together allow sellers to misrepresent the value of their firms. MNEs making international acquisitions, therefore, must incur extra costs to inspect the targets and shield themselves from sellers' misrepresentations.

Even if a worthy acquisition target can be accurately identified and its value carefully inspected, the buyer still needs to negotiate a contract that can be fully enforced afterward (i.e., *ex post* enforcement of acquisition contracts). Like most contracts, however, acquisition contracts are inherently incomplete and thus lack full binding power to guarantee the absolute takeover of the acquired company (Balakrishnan & Koza, 1993; Chi, 1994). For instance, the seller of an existing firm may withhold market and technical information from the acquirer. Moreover, the seller can steal star executives away from the new owner, or start up a new venture to compete with the business that he or she has just sold. Inevitably, such cheating behaviors will damage the long-term viability of the acquired business, thus forcing the buyer to incur extra costs to enforce the contract and guard against the seller's opportunism.

To neutralize the two factors that drive up the costs of executing international acquisitions, MNEs can instead take only a partial stake in an indigenous firm but reserve the option to buy out the remaining equity after the true value of the target firm has been revealed. Along with the partial offer, as I will argue below, the buyout option plays a constructive role in alleviating the imperfection of the equity market (see Chen & Hennart, 2004).

On the one hand, the initial partial offer serves to facilitate pre-acquisition inspection of the targets. In the equity market, sellers who are willing to retain a partial stake demonstrate more confidence in the future of their firms, as owners of lemons tend to adopt a hit-and-run strategy. Therefore, MNEs can rely on the willingness of the local seller to entertain a partial offer as a signal to the quality of the target firm (Spence, 1974). Moreover, sellers of a partial stake are less motivated to misrepresent the value of a firm, because they cannot collect the

inflated price in selling the remaining equity after its true value has been revealed. They can more credibly convince MNEs that the asking price is fair and honest, which reduces the need for bargaining between the two parties. After taking over the acquired firm (although partially), MNEs can access all inside information to verify its value. This opportunity for post-acquisition learning further drives down the cost that MNEs must incur to inspect the target firm beforehand.

On the other hand, the buyout option facilitates post-acquisition enforcement of the contracts. In partial acquisitions, the total price that sellers can get for their firms depends on the return from disposing of the remaining stake. If a seller behaves opportunistically and as a result harms the value of the acquired firm, he or she must incur a loss in putting the remaining stake for sale at a discount. Therefore the seller should be less inclined to withhold information from MNEs, steal their star executives, or start up another venture to compete with the acquired business. Functioning as a bond to curb the seller's opportunism, the buyout option helps to save on the cost that MNEs must incur to enforce the contract afterward (see Telser, 1980; Williamson, 1983).

Acquisition joint ventures, thus, can be formed as real options for MNEs to alleviate the difficulties they face in using the equity market to gain access to complementary local assets. To put it differently, dividing a full acquisition into two sequential deals can create a reciprocity effect to regulate the behavior of the seller and thereby boost the efficiency of the equity market. For instance, if the seller is honest in representing the value of its firm in the initial partial offer, the buyer will be more likely to offer a better deal in exercising the buyout option later (i.e., *quid pro quo* or mutual forbearance). By handing over its firm without holding back relevant information, the seller helps the new owner take over the acquired firm, which then drives up the value of the remaining share (i.e., *self-enforcing power*). Conversely, if the seller misrepresents the value of its firm, it will have to incur a loss in selling the remaining equity at a discount price later. Other cheating behaviors (such as raiding talent or creating competitive ventures) also harm the viability of the acquired firm and lower the value of the remaining share. The reciprocity effect built into two sequential equity transactions can explain acquisition joint ventures, where MNEs acquire indigenous firms partially and thereafter enter a joint-venture relationship with the sellers.¹⁰

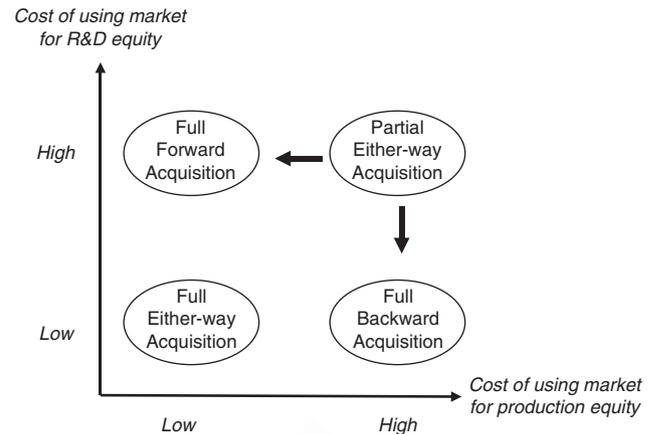


Figure 4 Full vs partial acquisition.

The above argument can be depicted graphically by a two-dimensional space that measures the relative costs of using the equity market in two opposite directions (Figure 4). Let's return to my earlier example in the IC industry. If the cost of using the equity market is low in both directions, either the design house or the fabricator can integrate into production or R&D by taking over the plant in Taiwan or the lab in the US, respectively, in full (full either-way acquisition). If the design house can easily acquire the fabricator but the opposite does not hold, the design house can integrate forward into manufacture by taking over the plant fully (full forward acquisition). In comparison, if the fabricator can handily acquire the design house, but the reverse is not possible, the fabricator can take a full stake in the lab to integrate backward into development (full backward acquisition). In cases where a full acquisition is too costly to execute in both directions, a partial acquisition can be made by either the design house or the fabricator to boost the efficiency of the equity market (partial either-way acquisition). The direction of this partial deal, then, depends on who can best use the power of reciprocity in co-ownership to lower the costs of target screening and contract enforcement (as represented by the two arrows in Figure 4).

An Integrated Model

My analysis thus far has developed a general TCE model of international business institutions. As summarized in Table 1, the model covers three market levels (output, asset, and equity), in which two-way transactions (A sells to B; B sells to A) can be conducted individually, concurrently, or

Table 1 Market interfaces and international business institutions

<i>Market interface</i>	<i>Seller</i>	<i>Buyer</i>	<i>Institutional mode</i>
<i>Output</i>			
— R&D (e.g., IC design service)	— Technology developer	— Product manufacturer	— Technology licensing
— Production (e.g., IC fabrication service)	— Product manufacturer	— Technology developer	— Product outsourcing
— R&D plus production (concurrent reciprocity)	— Both	— Both	— Countertrade
<i>Asset</i>			
— R&D (e.g., IC design tools)	— Technology developer	— Product manufacturer	— Full backward greenfield
— Production (e.g., IC testing devices)	— Product manufacturer	— Technology developer	— Full forward greenfield
— R&D plus production (concurrent reciprocity)	— Both	— Joint venture	— Greenfield joint venture
<i>Equity</i>			
— R&D (e.g., IC design lab)	— Technology developer	— Product manufacturer	— Full backward acquisition
— Production (e.g., IC fabrication plant)	— Product manufacturer	— Technology developer	— Full forward acquisition
— R&D or production (sequential reciprocity)	— Either	— Either	— Acquisition joint venture

sequentially between two specialists (e.g., an IC design house and an IC fabricator) located in two countries, each with comparative advantages in R&D and manufacturing (e.g., the US and Taiwan).

In the context of the developer–manufacturer interaction, the relative costs of conducting two-way transactions at the output level determine the choice of various contractual modes, as opposed to direct investment, to govern cross-border cooperation. The developer can procure production output from, or sell R&D output to, the manufacturer (through product outsourcing or technology licensing respectively). The two output markets can also be used concurrently to organize cross-border cooperation – that is, through countertrade, whereby the developer not only licenses a technology to the manufacturer but also buys back a portion of the product that has been created using the licensed technology (or the developer not only outsources a product from the manufacturer but also provides the technology that is needed to make the product). Direct investment will be necessary only if both of the output markets have failed to support all contractual modes of international business.

When using equity modes to govern international business, the investing MNE faces two decisions: whether to establish wholly owned subsidiaries or set up joint ventures, and whether to start up greenfield entities or embark on acquisitions. The two entry decisions, as shown in

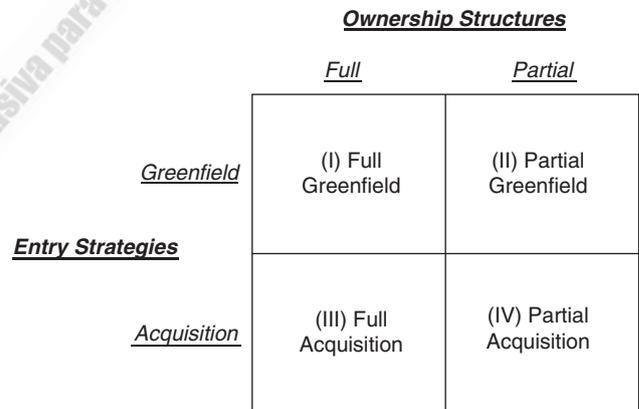


Figure 5 Combinations of equity modes.

Figure 5, create four equity mode combinations (two by two) for carrying out direct investment: full greenfield, partial greenfield, full acquisition, and partial acquisition.

The first decision (full vs partial ownership) can be made in the asset and equity markets, respectively. A wholly owned subsidiary (Cell I in Figure 5) will be chosen over a joint venture (Cell II) to carry out greenfield investment if the investing MNE can procure R&D or production assets through market transactions (i.e., if at least one asset market is efficient). Likewise, a full acquisition (Cell III) will be favored over a partial one (Cell IV) if the investing MNE can easily acquire a target local firm (i.e., if the equity market is efficient in at least one



direction). Although joint ventures are driven by market failure, co-ownership does not allow the partners to circumvent any failing market. Instead, it builds a reciprocity effect into two concurrent or sequential transactions to address the issue of market failure at the asset or equity level (i.e., greenfield or acquisition joint ventures).

The second decision – greenfield investments vs acquisitions – is contingent upon the accessibility of complementary local assets in the asset market relative to the equity market. A fully owned greenfield entity (Cell I) will be started if the investing MNE can easily procure complementary assets from the local owner (i.e., if one of the asset markets is efficient). In contrast, a full acquisition (Cell III) will be made if the investing MNE can easily take over the local business in which the target assets are embedded (i.e., if the equity market works in at least one direction). Lastly, joint ventures can be formed either through split ownership of greenfield entities (i.e., greenfield joint ventures; Cell II) or through partial acquisitions of existing firms (i.e., acquisition joint ventures; Cell IV) to resolve the issue of market failure, depending on the relative power of reciprocity built into co-ownership to boost the efficiency of the asset markets vs the equity markets that have failed in the first place.

To sum up, my analysis integrates both contractual and equity modes of international business under a general TCE model, where cross-border transactions can be conducted individually, concurrently, or sequentially between two specialist firms at three market levels. As shown in Table 1, the model covers nine (three by three) transaction combinations, in that the choice of the most efficient market interface to conduct cross-border transactions is essentially the selection of the optimal institutional mode to govern international business. The decision factor, thus, is the relative efficiency of multiple markets rather than the absolute efficiency of a single one.¹¹

FUTURE EXTENSIONS AND DIRECTIONS

In this section, I point out two possible directions for future researchers to extend this general TCE model of international business institutions. First, my transaction-based analysis can be expanded to also consider institutional contexts and firm capabilities in predicting the choice of the optimal international business institution. Second, the unique approach taken in this study (i.e., its consideration of the power of reciprocity in

correcting for the failure of multiple markets) provides strong implications for future scholars to advance international business studies.

Potential Expansions

Like the original theory of internalization, my analysis is normative in nature, in that the choice of the optimal international business institution is dictated by *transaction characteristics*. Yet transaction characteristics alone cannot fully account for the plurality of entry mode choices widely observable across countries and across companies. My model can be further extended to also consider *institutional contexts* and *firm capabilities* in explaining the across-country and across-company variations in the international business institutions that have been used to govern cross-border transactions with similar characteristics (Dunning & Lundan, 2008a).

Institutional contexts. My model is built on transaction-level analysis, where economic agents purportedly align transactions with governance structures to save on contracting costs, thus holding institutional contexts constant (Williamson, 1996). According to North (1990), the institutional environment varies across societies along the path of economic evolution (e.g., from local and regional to long-distance trades). Former studies have also confirmed that the institutional environments at home and abroad (e.g., cultural, legal, and political factors) play a critical role in shaping international business institutions (see Henisz, 2000; Kogut & Singh, 1988; Oxley, 1999). This institutional notion (or the institutional distance between two nations; Eden & Miller, 2004) is particularly relevant to my model, where cross-border transactions can be conducted at three market levels that are not uniformly efficient across all societies at distinct phases of economic development. In line with more recent work in international business (e.g., Dunning & Lundan, 2008a,b; Verbeke, 2008), my transaction-based analysis can be expanded in three directions to consider the institutional contexts at home and abroad.

First, my analysis does not consider the environmental restraints that have prevented firms from choosing the most efficient market interface to conduct cross-border transactions (and thus the most desirable institutional mode to govern international business). In those nations that ban inward direct investment, MNEs are sometimes

forced to use licensing as a second-best option to exploit technologies, and as a result must use a buy-back clause to boost the enforceability of the licensing contract, which is why countertrade is more widely seen in such nations (Hennart, 1989). Likewise, although joint ventures are sometimes seen as a *suboptimal* governance mode of cross-border cooperation (see e.g., Desai, Foley, & Hines, 2004), they are still ubiquitous in nations that mandate local participation in foreign investment projects (such as China or India; Tseng, 1994). In addition, MNEs that lack full information to optimize their entry mode choice can simply *imitate* an ongoing practice considered legitimate in the host country (DiMaggio & Powell, 1983), which suggests that the pressure of legitimacy, rather than the need for governance efficiency, leads to conformity in international business institutions. Similar environmental restraints at home and abroad can be incorporated into my transaction-based analysis to predict the choice of the optimal international business institution.

Second, my model can be expanded to compare the relative efficiency of the three market levels (output, asset, and equity) across all nations with a unique institutional context reflecting their stage of economic evolution. Generally speaking, the *output* market emerges at the early stage of economic development, and is used more frequently in less developed countries with rudimentary institutional environments. For this reason, contractual modes (licensing, outsourcing, and countertrade) can be widely observed in emerging economies that have difficulties attracting inward investment structured through an asset or an equity market. Developed nations, in contrast, have more sophisticated institutions to support the *equity* market, which is why acquisitions are made disproportionately in advanced economies. In between are newly industrialized countries, where the *asset* market is most active, as evidenced by the large number of transactions used by indigenous firms to obtain R&D assets from abroad or by MNEs to procure production assets locally. Given that the three market levels are not equally efficient across nations, a Northian perspective can be taken, along with my TCE-based analysis, to capture the across-country variations in international business institutions.

Third, my model can be extended to evaluate the relative power of reciprocity in resolving the issue of market failure across societies. Supposedly, reciprocity should be more powerful in regulating

the behavior of economic agents in institutional contexts that promote cooperation (relative to others that promote competition). For instance, reciprocity can be found in cross-licensing, which is more widely seen in Japan than in the US, due in part to the variations in patent laws between the two countries (see Gomes-Casseres, 1992). Compared with its US counterpart, the patent system in Japan offers narrower protection, and prior consent from current patent holders is needed for a follower to upgrade an existing technology (Scotchmer, 1991). This distinctive system is credited for widespread R&D collaboration in Japan, a collective society where reciprocity is considered a norm even among competitors (in contrast to the individualistic US, where unilateralism is acceptable in business settings). In addition, reciprocity can be built into some social networks (e.g., business groups and trade associations) that play a more critical role in facilitating market exchanges in collectivist societies than in individualist societies (Khatri, Tsang, & Begley, 2006). Thus another way to expand my analysis is to compare the relative power of reciprocity in regulating economic agents across societies featuring distinct institutional contexts (e.g., legal systems or social cultures).

Firm capabilities. As we can observe, firms often choose *different* market interfaces to conduct cross-border transactions of *similar* characteristics. These across-company variations in international business institutions can be attributed to firm heterogeneity in resource endowments (Barney, 1991; Wernerfelt, 1984). Some prior studies have attempted to incorporate this resource-based view into transaction cost economics (e.g., Madhok, 2002; Mahoney & Pandian, 1992). Others have even argued that the choice of equity modes over contractual modes to govern international business can be attributed to *hierarchy success*, a resource-based view that challenges the *market-failure* approach to transaction governance (Kogut & Zander, 1993, 1996; Madhok & Tallman, 1998). As shown below, my analysis can be expanded in multiple directions to consider firm capabilities in predicting the choice of the optimal international business institution.

In fact, the original theory of internalization contains a resource-based component, where non-location-bound capabilities owned by MNEs can be combined with location-bound assets owned by local players (the so-called resource



complementarity: Dunning & Lundan, 2008b; Rugman & Verbeke, 2002; Verbeke, 2008). This resource-deployment view is consistent with former findings that technological and marketing capabilities both affect the equity modes (partial vs full ownership, or greenfield investment vs acquisition) chosen by MNEs to carry out direct investment (Chen & Hennart, 2002; Hennart & Reddy, 1997; Kogut & Chang, 1991). Such findings reveal an indirect path whereby firm capabilities influence the selection of the most desirable institutional mode to organize international business. More precisely, firm capabilities determine the type of assets to be sold or procured in the host country (i.e., the transaction characteristics), which then dictates the market interface that should be used to conduct cross-border transactions (see Foss & Foss, 2005, for a similar argument).

There also exists a direct path whereby a special category of firm resources – *governance capabilities* – affects the choice of the optimal international business institution (Hoetker, 2005; Leiblein & Miller, 2003). For instance, R&D competency enables a firm to thwart contractual hazards in licensing, and thereby encourages its choice of market over equity modes to organize technology transfer across companies (Mayer & Solomon, 2006). Governance capabilities are particularly important to my multi-market setup, where the failure of one market interface does not always result in internalization, because the parties involved can resort to a substitute market that they are more capable of managing. Hence firm capabilities can be used, side by side with transaction characteristics, to justify the choice of one institutional mode over another to govern international business.

Further, the choice of the optimal international business institution depends in part on the ability of a firm to magnify the power of reciprocity in boosting market efficiency. When inter-firm cooperation is structured through two concurrent or sequential transactions, the party who has more resources with which to reward or retaliate in one transaction is better able to induce compliance by the trading partner in another transaction. The seller of a firm, for instance, is more inclined to cooperate in accepting the partial offer if the buyer owns more resources to reciprocate in exercising the buyout option. In fact, bargaining-power balance between two firms is dynamic in nature, where the party who garners extra power in one transaction can more handily bring the trading

partner to terms in another. As suggested in Inkpen and Beamish (1997), for instance, a joint venture will become very unstable if one partner is gaining power at the expense of the other over time. This power (or resource) view can supplement my transaction-based analysis in justifying the use of a particular institutional mode to govern cross-border cooperation.

Likewise, the capacity of a firm to manage the institutional environment in the host country can affect the market interface that it will use to transact with indigenous firms. Some previous studies, for instance, have confirmed that host-country experience plays a role in determining the equity mode used by MNEs to carry out direct investment (e.g., Beamish & Banks, 1987; Chen & Hennart, 2002). Prior experience, indeed, represents the ability of an investor to handle the host-country environments, another category of firm capabilities that can be included in my model to explain why sometimes firms organize similar transactions in different ways.

The above discussion has suggested several directions to take firm capabilities into account in identifying the most efficient market interface to conduct cross-border transactions. Such firm capabilities include the assets to be exploited or explored abroad, the capacity to govern certain market transactions, the resource for reciprocating the trading partner, and the ability to manage the local environment. Thus heterogeneity in resource endowments can help to explain why firms use distinctive institutional modes to govern cross-border transactions that are considered similar in their characteristics.

Implications for Future Research

My model departs from the extant international business literature in three ways. First, it has illustrated that cross-border cooperation can be organized through *multiple markets*. Second, it has shown that *two-way transactions* can be conducted between the parties involved. Third, it has established the *power of reciprocity* in correcting for market failure. These three distinctions open up new frontiers for future research to advance international business studies.

Multiple markets. According to my general TCE model, the selection of one institutional mode over another to govern international business also requires MNEs and indigenous firms to move from one market to another to organize cross-border



cooperation. Such a multi-market framework offers a fertile theoretical ground where the relative efficiency of two (or even more) markets can be used to compare entry mode choices beyond the traditional licensing-investment paradigm in internalization theory. The relative costs of using the markets for production output vs production assets, for instance, can predict the choice between *outsourcing contracts* and *full greenfield plants* made by firms to exploit a proprietary technology overseas. Similarly, the use of *licensing contracts* or *full greenfield labs* by firms to obtain a new technology abroad hinges on the relative efficiency of the markets for R&D output vs R&D assets. My multi-market setup thus presents a broader vantage point from which future researchers may analyze entry mode choices, particularly after institutional environments and firm capabilities are used along with transaction characteristics to make the comparisons.

Further, the three market levels identified in this study differ from one another not only in transaction costs but also in transaction frequency. Generally speaking, transactions conducted at the equity level tend to be one-shot or infrequent, but those conducted at the output level are frequent and repetitive. In terms of transaction frequency, the asset market falls in between the two. Accordingly, MNEs and indigenous firms face a trade-off between high-frequency/low-cost and low-frequency/high-cost transactions in choosing a market to organize their cooperation (see Williamson, 1975, 1985). Although taking over an existing firm is much costlier to execute than buying output from the firm, the acquisition is a one-shot transaction and may turn out to be more efficient than repetitive transactions conducted at the output level. The multi-market setup offers a platform for future researchers to explore the cost-frequency trade-off that has thus far remained largely untouched in transaction cost economics.

MNEs and indigenous firms, when moving from one market level to another to organize their cooperation, are also redrawing their operational boundaries. In licensing, for instance, a developer simply rents R&D *output* to a manufacturer without integrating forward into production. In greenfield investment, however, the developer integrates forward into technology exploitation, using production *assets* supplied by the manufacturer. This licensing-investment paradigm corresponds not only to the choice of market or hierarchy to coordinate the developer-manufacturer cooperation,

but also to the use of an output or an asset market to conduct cross-border transactions. Irrespective of the choice of licensing or direct investment, the parties still need to cooperate with each other, although their cooperation must be shifted from one market level to another. Fundamentally, the licensing-vs-investment dichotomy is less about the choice between market and hierarchy, and more about the choice between an output and an asset market. Another issue for future studies to address, indeed, is how two specialist firms redefine their operational boundaries by shifting cross-border cooperation from one market interface to another.

Although my model is built on a multi-market setup, it does not cover the possibility that cross-border cooperation is organized through two or more market levels simultaneously. A greenfield joint venture, for example, can be structured through an asset and an output market, in which one partner *sells* its asset outright, but the other only *licenses* its asset, to the joint venture. Also, if the reciprocity effect built into co-ownership is too weak to sustain a greenfield joint venture, the more vulnerable party can negotiate an option to buy out the joint venture on a later date. In addition to two *asset* transactions used by the partners to structure the joint venture, this buyout option represents a third transaction that can possibly be conducted in the *equity* market and will offer extra incentives for the potential seller (i.e., the put holder) to behave in good faith. Future research can increase the generalizability of this multi-market model by expanding it to analyze other international business institutions that involve the use of two or even all three market levels at the same time.

Two-way transactions. My model reflects the dyadic nature of cross-border transactions that can be conducted in two opposite ways between MNEs and indigenous firms. The direction of this buyer-seller relationship at all three market levels depends on who is better able to buy out the value of the other (i.e., whose own value is more difficult for the other to buy out). This dyadic perspective has uncovered critical areas for future research to advance international business studies.

The elephant in the room is product outsourcing (which is the mirror image of technology licensing), a popular contractual mode of international business that has attracted little attention from former studies. One typical arrangement is called original equipment manufacture (OEM; Chen, 2005), where product developers send design and



production knowledge to subcontractors, pay a pre-negotiated price to buy back the product based on the transferred technologies, and resell it to consumers without revealing the identity of its suppliers. For instance, US computer makers (such as Dell and HP) have been outsourcing personal computers from foreign subcontractors for years. Nike shoes, Levi's blue jeans, Mattel toys, and Zenith televisions are all outsourced products. No one knows exactly the scale of product outsourcing, which accounts for a large portion of US imports from manufacturers in newly industrialized, developing, and less developed countries.

One vital issue in product outsourcing is technology loss to subcontractors who turn out to be formidable rivals later (Chen, 2004). The tension between technology sharing and knowledge protection is well documented in the alliance literature (Li, Eden, Hitt, & Ireland, 2008; Luo, 2001; Norman, 2004). Technology loss is more of a problem in product outsourcing, where knowledge transfer is complete and thorough but the parties keep only a *contractual* relationship that can be easily terminated (relative to an *equity* relationship, which is harder to break). The risk of technology loss has raised critical questions about product outsourcing. On the one hand, what can a developer do to safeguard its technologies from being appropriated by subcontractors? On the other hand, how can a manufacturer use outsourcing as a learning platform to catch up with its client? According to my model, transaction characteristics (e.g., product maturity or technology innovativeness) certainly serve to determine the winner and loser of the technological race. Institutional contexts and firm capabilities also play supplementary roles in shaping the outcome of product outsourcing.

Another vital issue in product outsourcing is quality-cheating by subcontractors. Selling a product *unbranded* back to its developer at a *pre-negotiated* price, subcontractors cannot be held responsible by consumers for the performance of the product. Subcontractors hence have an incentive to use inferior materials or bypass production procedures to reduce operational costs, since they can pass the blame for quality failure to their clients (Chen, 2007). The risk of quality-cheating can be vividly seen in millions of recalled toys outsourced by Mattel from its subcontractors in China (*New York Times*, 2007). Yet the prevalence of outsourced products in so many categories also indicates that the risk of quality-cheating can be effectively

curbed. The question is what mechanisms a technology developer can install to screen out defective products made by its subcontractor. The answer to this question lies squarely in transaction characteristics (e.g., product complexity). The severity of this quality-cheating issue also hinges on the relative ability of the parties involved to govern the outsourcing transaction (i.e., governance capabilities) and the institutional contexts at home and abroad (for example, the variation in product safety regulations across two countries).

This dyadic setup can be further expanded to analyze the rise of third-world MNEs (Wells, 1983), an issue that has recently attracted renewed attention from international business scholars (see Buckley, 2002; Luo & Tung, 2007). Indigenous firms, when left alone by foreign investors who unilaterally set up wholly owned subsidiaries, also can expand internationally and thereafter become MNEs themselves. Under the same framework where MNEs from developed economies make market- or resource-seeking investment in foreign countries, recent studies have captured those third-world MNEs moving down the economic ladder to less developed countries (such as Korean and Taiwanese firms entering China; Chen, Chen, & Ku, 2004; Guillen, 2003). More important, some third-world MNEs can evade the institutional restraints at home by investing in developed countries to explore advanced technologies (i.e., capability-seeking investment, Erramilli, Agarwal, & Kim, 1997; Luo & Tung, 2007). Although the original theory of the MNE arose in the context of Western firms using direct investment to *exploit* their advantages in less developed nations (that is, upstream investment; Wells, 1998), my bilateral setup covers downstream investment made by third-world MNEs to *explore* new capabilities in developed economies.

Power of reciprocity. The reciprocity concept is not new in the economics literature, and reciprocal behavior is observable in a wide range of human settings (e.g., scientific communities, Kachra & White, 2008) or even in wildlife (e.g., chimpanzees: see Boesch, 1994; Brosnan & de Waal, 2002). In this study, I explicitly recognize the power of reciprocity in boosting the efficiency of three market levels available to MNEs and indigenous firms for conducting cross-border transactions. This reciprocity argument can help to advance the international business literature in several promising directions.



Countertrade, for instance, corresponds to the concurrent use of technology licensing and product outsourcing to organize cross-border cooperation. This practice has attracted sporadic attention, mainly as a solution to the inefficiency of the technology market, where the buy-back clause is added to lower the cost of contracting technology licensing (Hennart, 1989; Kogut, 1986; Mirus & Yeung, 1986). The fact is that the buy-back clause constitutes a second transaction that is also too costly to conduct; otherwise, the developer–manufacturer cooperation can be organized through the production market alone. As argued in this study, countertrade builds a reciprocity effect into the concurrent use of two output transactions to facilitate international technology transfer. This reciprocity effect can be extended to other international business activities that also contain two output transactions but are not covered in my model (e.g., cross-licensing between MNEs and indigenous firms).

Another widely accepted view in the literature is that joint ventures are formed for MNEs to avoid the high transaction cost of using an open market to procure complementary local assets from indigenous firms. Yet co-ownership does not really allow the partners to bypass any failing market. Instead, it works because the concurrent use of two asset markets to structure a joint venture creates a reciprocity effect to economize on transaction costs. The reciprocity argument offers a solid theoretical foundation for future researchers to open the black box of how two partners pool within a joint venture complementary assets that are neither replicable nor marketable.

Even though greenfield and acquisition joint ventures both rely on the power of reciprocity to address the issue of market failure, the nature of this reciprocity effect differs between the two. A greenfield joint venture is structured through two *concurrent* transactions used by both partners to sell complementary assets to this separate legal entity; an acquisition joint venture is organized through two *sequential* transactions used by one partner to acquire the operation of the other. To be more exact, the reciprocity effect can be created through two concurrent transactions at the asset level or through two sequential transactions at the equity level. Thus the relative power of reciprocity in resolving the issue of market failure at the asset vs the equity level predicts the choice between greenfield and acquisition joint ventures to govern cross-border cooperation,

another topic that has escaped the attention of prior studies.

This study has shown that reciprocity can rein in the opportunistic behavior of economic agents at three market levels. To a large extent my argument rests on intentional deceit by the parties involved (or opportunism; Williamson, 1985), although this behavioral assumption is not necessary for the reciprocity effect to hold. According to Verbeke and Greidanus (2009), market failure can be attributed to malevolent contract violations or benevolent preference reversals by the parties involved. One more subject for future studies to explore, hence, is how the reciprocity effect built into two concurrent or sequential transactions serves to pre-empt *ex ante* overcommitment and *ex post* reprioritization that are benevolent in nature.

CONCLUSION

The past decades have seen a substantial advancement in international business studies. Earliest research focuses more on the rise of MNEs that choose direct investment over such *contractual modes* as licensing to exploit competitive assets abroad. More recent studies instead analyze various *equity modes* chosen by MNEs to carry out direct investment. Nevertheless, the field still lacks a general model that covers both contractual and equity modes of international business.

In this study, I propose a general TCE model that can integrate all international business institutions under a single framework. My model is based on two pillars. First, although market failure is the nucleus building block of international business theories, prior research is rather ambiguous as to which market has actually failed. In this paper, I instead argue that cross-border transactions can be conducted at three market levels (output, asset, and equity) and that the solution to market failure is specific to the market interface used by MNEs and indigenous firms to conduct international business. Second, former studies often start their analyses with a dyadic setup that covers an MNE and an indigenous firm, but conclude with a unilateral decision made by the MNE to bypass the indigenous firm. By maintaining the dyadic setup throughout my analysis, I establish that a reciprocity effect can be found in the bilateral relationship to rein in the behavior of the parties involved and thereafter boost market efficiency.

My model differs from the extant literature in three aspects: the availability of *multiple markets* for



conducting international business; the use of *two-way transactions* to organize cross-border cooperation; and the *power of reciprocity* to boost market efficiency. These three distinct components provide strong implications for future research, particularly after my analysis, which is based largely on transaction characteristics, is broadened to consider institutional contexts and firm capabilities in accounting for the plurality of international business institutions widely observed across countries and across companies.

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NOTES

¹Some scholars argue for the existence of a third mode that is neither market nor hierarchy, that is, networks, which are defined as loosely coupled systems of autonomous firms (e.g., Dhanaraj & Parkhe, 2006; Hakansson & Johanson, 1993). Recent studies have also shown the relevance of social and industrial networks to international business (see, for example, Chen, Chen, & Ku, 2004), particularly in collectivist societies such as China, Japan, or Korea (Richter, 1999).

²Another theory to account for the rise of MNEs is that hierarchy is more effective than market in organizing the exploration and exploitation of technological capabilities across borders (Kogut & Zander, 1993, 1996). To put it another way, it is *hierarchy success* rather than *market failure* that explains the rise of the MNE. A similar argument has also been made in other studies. For instance, Madhok and Tallman (1998) assert that the objective of entry mode choice is *value maximization* in resource deployment instead of *cost minimization* in transaction governance.

³I distinguish the three market levels based on the nature of the seller's business rather than on the usage of the focal product by the buyer. Let me also use an unrelated example to illustrate this distinction. When an automaker sells cars to a taxi company, the transaction is conducted in an *output* market (i.e., the car is the output of the seller), although the buyer uses the product as an asset to serve its clients. If the

taxi company rents the right to use a car to a passenger (or even to another taxi company), the transaction is also conducted at the output level (i.e., transportation services are the taxi company's output). However, when one taxi company resells a car to another taxi company, the parties are transacting in an *asset* market, since the seller has used the car as an asset in delivering its own output. If one taxi company acquires the business of another, I say that the two parties transact in the *equity* market (i.e., the market for corporate ownership).

⁴An exception to this unilateral approach can be found in the literature on international joint ventures (Beamish & Banks, 1987; Gomes-Casseres, 1989; Hennart, 1988), which treats the partners (e.g., MNEs and indigenous firms) equally and symmetrically.

⁵Co-marketing is more pervasive in the real world than most people are aware. In my 2005 paper, I use non-stick cookware as an example to illustrate co-marketing, where cookware makers and DuPont (the developer of Teflon coating) co-market their joint output to consumers. Other examples of co-marketing include, just to name a few, credit cards (Citibank-Visa), lawnmowers (Snapper-Honda), and cellphones (Sony-Ericsson). Generally speaking, co-marketing includes those cases where a product bears at least two brands (e.g., Dell PCs with the Intel Inside logo, a Ford automobile with Goodyear tires, a Gary Fisher mountain bike with Bilstein shock absorbers). When two specialists co-market a final product to consumers, they can keep an arm's length or a contractual relationship (i.e., *arm's length* or *contractual co-marketing*), depending on the absence or presence of performance inseparability.

⁶As noted previously, the distinction between output and asset markets is based on the business nature of the seller. Under single-party marketing (e.g., technology licensing), developer-manufacturer cooperation is organized through the output market if the developer specializes in R&D without the intent to commercialize its technological output. On the contrary, if a firm not only develops a technology but also uses it to increase the value of a final product, then the technology represents an asset upon which the final product is based. In such cases, technology licensing should be classified as an asset transaction that allows the buyer to make the final product, using its newly acquired asset (i.e., the licensed technology).

⁷While technology licensing is often a one-shot deal, product outsourcing involves a long-term relationship between buyers and sellers. One can argue that subcontractors are keen to secure future contracts

and hence have incentives to behave. In reality, repeat contracts alone are not a sufficient condition for reciprocity to work unless they are self-enforcing in nature – that is, unless the party who acts to help or harm the other ends up helping or harming itself (Telser, 1980). Recent recalls of toys outsourced by Mattel from China confirm that the use of repeat contracts alone cannot erase the risk of quality reductions, given that some of the outsourcing relationships have lasted over 20 years (*New York Times*, 2007). What makes the risk worse is that most subcontractors earn a low margin with no guarantee for repeat contracts. They can easily slip into the end-game mentality and commit fraudulent actions.

⁸According to Figure 1, MNEs must use direct investment to enter foreign nations when all contractual modes have failed at the same time. Under the equity mode, as shown in Figure 2, they then decide on whether to own a foreign subsidiary fully or partially. Hennart (1988) has combined this two-step process into a single-step decision, in that MNEs make the choice between licensing and joint ventures without considering the availability of the other contractual and equity modes shown in Figures 1 and 2.

⁹The two concurrent transactions can be a one-shot deal used by the parent companies to transfer capital goods to a joint venture. They can also be repetitive transactions used by the partners to sell proprietary parts and components. The parties to a joint venture will have more opportunities to reciprocate if the transactions are continuous in nature, which

implies that the reciprocity effect will be weaker if the venture is structured through two one-shot deals.

¹⁰An explicit option clause is not really necessary for the reciprocity effect to work in boosting the efficiency of the equity market. All the reciprocity effect needs is the *possibility* of a second transaction for the buyer to increase its equity share in the acquired business wherein the seller still retains a partial stake.

¹¹In a recent paper submitted to *JIBS* simultaneously with this paper, Hennart (2009) also recognizes the existence of complementary local assets that are accessible at three market levels (i.e., output, asset, and equity). His paper, however, differs fundamentally from mine in scope and approach. For instance, Hennart pools all three market levels into a single model (Figure 2) for analysis without distinguishing one from another. In this study, I conduct three sets of analysis (Figures 1, 2, and 4), where the solution to market failure is specific to the market level that has been chosen to conduct cross-border transactions. Furthermore, Hennart's analysis covers only three entry modes (licensing, joint ventures, and wholly owned subsidiaries) and mainly from the perspective of knowledge owners, while my model includes more contractual and equity modes (e.g., outsourcing, countertrade, and backward direct investment) and is truly bilateral in nature. More important, Hennart sees joint ventures as a way for the partners to bypass failing markets but does not explain how co-ownership resolves the issue of market failure. In this study, I stipulate explicitly that co-ownership creates a reciprocity effect to regulate the behavior of the partners and thereby boost market efficiency.

REFERENCES

- Ainuddin, R. A., & Beamish, P. 2008. Nora-Sakari: A proposed JV in Malaysia. In C. Bartlett, S. Ghoshal & P. Beamish (Eds), *Transnational management: Text, readings and cases in cross border management*, (5th ed.) New York: McGraw-Hill Irwin.
- Akerlof, G. A. 1970. The market for "lemons": Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3): 488–500.
- Anand, B. N., & Khanna, T. 2000. The structure of licensing contracts. *Journal of Industrial Economics*, 48(1): 103–135.
- Anand, J., & Delios, A. 2002. Absolute and relative resources as determinants of international acquisitions. *Strategic Management Journal*, 23(2): 119–134.
- Anderson, E., & Gatignon, H. 1986. Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, 17(3): 1–26.
- Balakrishnan, S., & Koza, M. 1993. Information asymmetry, adverse selection and joint ventures: Theory and evidence. *Journal of Economic Behavior and Organization*, 20(1): 99–117.
- Barney, J. B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99–120.
- Beamish, P. W., & Banks, J. C. 1987. Equity joint ventures and the theory of the multinational enterprise. *Journal of International Business Studies*, 18(2): 1–16.
- Belson, K. 2002. Wal-Mart dips \$46 million toe into vast Japanese economy. *New York Times*, 15 March.
- Boesch, C. 1994. Cooperative hunting in wild chimpanzees. *Animal Behavior*, 48(3): 653–667.
- Brosnan, S., & de Waal, F. 2002. A proximate perspective on reciprocal altruism. *Human Nature*, 13(1): 129–152.
- Brouthers, K. D., & Brouthers, L. E. 2000. Acquisition or greenfield start-up? Institutional, cultural and transaction cost influences. *Strategic Management Journal*, 21(1): 89–97.
- Buckley, P. J. 2002. Is the international business research agenda running out of steam? *Journal of International Business Studies*, 33(2): 365–373.
- Buckley, P. J., & Casson, M. C. 1976. *The future of the multinational enterprise*. London: Macmillan.
- Buckley, P. J., & Casson, M. C. 1988. A theory of cooperation in international business. In F.J. Contractor & P. Lorange (Eds),



- Cooperative strategies in international business*: 31–53. Lexington, MA: Lexington Books.
- Buckley, P. J., & Casson, M. C. 1996. An economic model of international joint venture strategy. *Journal of International Business Studies*, 27(5): 849–876.
- Buckley, P. J., & Casson, M. C. 1998a. Analyzing foreign market entry strategies: Extending the internalization approach. *Journal of International Business Studies*, 29(3): 539–561.
- Buckley, P. J., & Casson, M. C. 1998b. Models of the multinational enterprise. *Journal of International Business Studies*, 29(1): 21–44.
- Business Week*. 2000. For GM, once again, little ventured, little gained. 27 March: 42–43.
- Caves, R. E., Crookell, H., & Killing, P. J. 1983. The imperfect market for technology licenses. *Oxford Bulletin of Economics and Statistics*, 45(3): 249–267.
- Caves, R. E., & Mehra, S. K. 1986. Entry of foreign multinationals into the US manufacturing industries. In M.E. Porter (Ed.) *Competition and global industries*: 449–481. Boston, MA: Harvard Business School Press.
- Chen, S.-F. 1996. *A theory of private branding and its implication for the relative competitiveness of foreign versus domestic manufacturers*, Unpublished PhD dissertation, Department of Business Administration, University of Illinois at Urbana-Champaign, Urbana, IL.
- Chen, S.-F. 2004. American firms' suicidal outsourcing. *Providence Journal*, 17 December.
- Chen, S.-F. 2005. Extending internalization theory: A new perspective on international technology transfer and its generalization. *Journal of International Business Studies*, 36(2): 231–245.
- Chen, S.-F. 2007. Don't bash China – US toy makers are at fault. *Globe and Mail*, 3 September.
- Chen, S.-F. 2008. The motives for international acquisitions: Capability procurements, strategic considerations, and the role of ownership structures. *Journal of International Business Studies*, 39(3): 454–471.
- Chen, S.-F., & Hennart, J.-F. 2002. Japanese investors' choice of joint ventures versus wholly owned subsidiaries in the US: The role of market barriers and firm capabilities. *Journal of International Business Studies*, 33(1): 1–18.
- Chen, S.-F., & Hennart, J.-F. 2004. A hostage theory of joint ventures: Why do Japanese investors choose partial over full acquisitions to enter the United States? *Journal of Business Research*, 57(10): 1126–1134.
- Chen, S.-F., & Zeng, M. 2004. Japanese investors' choice of acquisitions vs startups in the US: The role of reputation barriers and advertising outlays. *International Journal of Research in Marketing*, 21(2): 123–136.
- Chen, T.-J., Chen, H., & Ku, Y.-H. 2004. Foreign direct investment and local linkages. *Journal of International Business Studies*, 35(4): 320–333.
- Chi, T. 1994. Trading in strategic resources: Necessary conditions, transaction cost problems, and choice of exchange structure. *Strategic Management Journal*, 15(4): 271–290.
- Davidson, W. H., & McFetridge, D. G. 1985. Key characteristics in the choice of international technology transfer mode. *Journal of International Business Studies*, 16(2): 5–22.
- Davies, H. 1977. Technology transfer through commercial transactions. *Journal of Industrial Economics*, 26(2): 161–175.
- Desai, M. A., Foley, C. F., & Hines Jr., J. R. 2004. The costs of shared ownership: Evidence from international joint ventures. *Journal of Financial Economics*, 73(2): 323–374.
- Dhanaraj, C., & Parkhe, A. 2006. Orchestrating innovation networks. *Academy of Management Review*, 31(3): 659–669.
- DiMaggio, P. J., & Powell, W. W. 1983. The Iron Cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2): 147–160.
- Dunning, J. H. 1988. The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies*, 19(1): 1–31.
- Dunning, J. H., & Lundan, S. 2008a. Institutions and the OLI paradigm of the multinational enterprise. *Asia Pacific Journal of Management*, 25(4): 573–593.
- Dunning, J. H., & Lundan, S. 2008b. *Multinational enterprises and the global economy*. Cheltenham: Edward Elgar.
- Eden, L., & Miller, S. R. 2004. Distance matters: Liability of foreignness, institutional distance and ownership strategy. In M.A. Hitt & J. Cheng (Eds), *The evolving theory of the multinational firm*. Advances in International Management, Vol. 16. 187–221. Amsterdam: Elsevier.
- Erramilli, M. K., Agarwal, S., & Kim, S.-S. 1997. Are firm-specific advantages location-specific too? *Journal of International Business Studies*, 28(4): 735–757.
- Fehr, E., & Gächter, S. 2000. Fairness and retaliation: The economics of reciprocity. *Journal of Economic Perspectives*, 14(3): 159–181.
- Foss, K., & Foss, N. J. 2005. Resources and transaction costs: How property rights economics furthers the resource-based view. *Strategic Management Journal*, 26(6): 541–553.
- Gatignon, H., & Anderson, E. 1988. The multinational corporation's degree of control over foreign subsidiaries: An empirical test of a transaction cost explanation. *Journal of Law, Economics, and Organization*, 4(2): 305–336.
- Gomes-Casseres, B. 1989. Ownership structures of foreign subsidiaries: Theory and evidence. *Journal of Economic Behavior and Organization*, 11(1): 1–25.
- Gomes-Casseres, B. 1990. Firm ownership preferences and host government restrictions: An integrated approach. *Journal of International Business Studies*, 21(1): 1–22.
- Gomes-Casseres, B. 1992. *Fusion system corp. in Japan*, Harvard Business School Case 390021. Cambridge, MA: Harvard Business Publishing.
- Guillen, M. 2003. Experience, imitation, and the sequence of foreign entry: Wholly owned and joint-venture manufacturing by South Korean firms and business groups in China, 1987–1995. *Journal of International Business Studies*, 34(2): 185–198.
- Hakansson, H., & Johanson, J. 1993. The network as a governance structure: Inter-firm cooperation beyond markets and hierarchies. In G. Grabher (Ed.) *The embedded firm: On the socioeconomics of industrial networks*. London: Routledge.
- Henisz, W. J. 2000. The institutional environment for multinational investment. *Journal of Law, Economics, and Organization*, 16(2): 334–364.
- Hennart, J.-F. 1982. *A theory of multinational enterprise*. Ann Arbor, MI: University of Michigan Press.
- Hennart, J.-F. 1988. A transaction costs theory of joint ventures. *Strategic Management Journal*, 9(4): 361–374.
- Hennart, J.-F. 1989. The transaction cost rationale for countertrade. *Journal of Law, Economics, and Organization*, 5(1): 127–153.
- Hennart, J.-F. 1993. Explaining the swollen middle: Why most transactions are a mix of “market” and “hierarchy”. *Organization Science*, 4(4): 529–547.
- Hennart, J.-F. 2009. Down with MNE-centric theories! Market entry and expansion as the bundling of MNE and local assets. *Journal of International Business Studies*, 40(9): 1432–1454.
- Hennart, J.-F., & Park, Y.-R. 1993. Greenfield vs acquisition: The strategy of Japanese investors in the United States. *Management Science*, 39(9): 1054–1070.
- Hennart, J.-F., & Reddy, S. 1997. The choice between mergers/acquisitions and joint ventures: The case of Japanese investors in the United States. *Strategic Management Journal*, 18(1): 1–12.
- Hoetker, G. 2005. How much you know versus how well I know you: Selecting a supplier for a technically innovative component. *Strategic Management Journal*, 26(1): 75–96.
- Hymer, S. 1976. *The international operations of national firms*. Cambridge, MA: MIT Press.

- Inkpen, A. C., & Beamish, P. W. 1997. Knowledge, bargaining power, and the instability of international joint ventures. *Academy of Management Review*, 22(1): 177–203.
- Kachra, A., & White, R. 2008. Know-how transfer: The role of social, economic/competitive, and firm boundary factors. *Strategic Management Journal*, 29(4): 425–445.
- Khatri, N., Tsang, E., & Begley, T. 2006. Cronyism: A cross-cultural analysis. *Journal of International Business Studies*, 37(1): 61–75.
- Kogut, B. 1986. On designing contracts to guarantee enforceability: Theory and evidence from East-West trade. *Journal of International Business Studies*, 17(1): 47–61.
- Kogut, B. 1991. Joint ventures and the option to expand and acquire. *Management Science*, 31(1): 19–33.
- Kogut, B., & Chang, S. J. 1991. Technological capabilities and Japanese foreign direct investment in the United States. *Review of Economics & Statistics*, 73(3): 401–413.
- Kogut, B., & Singh, H. 1988. The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3): 411–432.
- Kogut, B., & Zander, U. 1993. Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 24(4): 625–645.
- Kogut, B., & Zander, U. 1996. What firms do? Coordination, identity and learning. *Organization Science*, 7(5): 402–518.
- Leiblein, M., & Miller, D. J. 2003. An empirical examination of transaction- and firm-level influences on the vertical boundaries of the firm. *Strategic Management Journal*, 24(9): 839–859.
- Li, D., Eden, L., Hitt, M. A., & Ireland, R. D. 2008. Friends, acquaintances, or strangers: Partner selection in R&D alliances. *Academy of Management Journal*, 51(2): 315–334.
- Luo, Y. 2001. Determinants of entry in an emerging economy: A multilevel approach. *Journal of Management Studies*, 38(3): 443–472.
- Luo, Y., & Tung, R. L. 2007. International expansion of emerging market enterprises: A springboard perspective. *Journal of International Business Studies*, 38(4): 481–498.
- Mayer, K. J., & Solomon, R. M. 2006. Capabilities, contractual hazards, and governance: Integrating resource-based and transaction cost perspectives. *Academy of Management Journal*, 49(5): 942–959.
- Madhok, A. 2002. Reassessing the fundamentals and beyond: Ronald Coase, the transaction cost and resource-based theories of the firm and the institutional structure of production. *Strategic Management Journal*, 23(6): 535–550.
- Madhok, A., & Tallman, S. B. 1998. Resources, transactions and rents: Managing value through interfirm collaborative relationships. *Organization Science*, 9(3): 326–339.
- Mahoney, J. T., & Pandian, R. 1992. The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13(5): 363–380.
- Mirus, R., & Yeung, B. 1986. Economic incentives for countertrade. *Journal of International Business Studies*, 17(3): 27–39.
- Nanda, A., & Williamson, P. J. 1995. Use joint ventures to ease the pain of restructuring. *Harvard Business Review*, 73(6): 119–128.
- New York Times*. 2007. After stumbling, Mattel cracks down in China. 29 August.
- Norman, P. M. 2004. Knowledge acquisition, knowledge loss, and satisfaction in high technology alliances. *Journal of Business Research*, 57(6): 610–619.
- North, D. 1990. *Institutions, institutional change, and economic performance*. Cambridge, MA: Cambridge University Press.
- Oxley, J. E. 1999. Institutional environment and the mechanisms of governance: The impact of intellectual property protection on the structure of inter-firm alliances. *Journal of Economic Behavior & Organization*, 38(3): 283–309.
- Perrow, C. 1986. *Complex organizations: A critical essay*, (3rd ed.) New York: Random House.
- Pisano, G. P. 1989. Using equity participation to support exchange: Evidence from the biotechnology industry. *Journal of Law, Economics, and Organization*, 5(1): 109–126.
- Powell, W. W. 1990. Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behavior*, 12: 295–336.
- Reuer, J. J., & Koza, M. P. 2000. Asymmetric information and joint venture performance: Theory and evidence for domestic and international joint ventures. *Strategic Management Journal*, 21(1): 81–88.
- Reuer, J. J., & Tong, T. W. 2005. Real options in international joint ventures. *Journal of Management*, 31(3): 403–423.
- Richter, F.-J. 1999. *Business networks in Asia: Promises, doubts, and perspectives*. Greenwich, CT: Quorum Books.
- Rugman, A. M. 1981. *Inside the multinationals: The economics of internal markets*. New York: Columbia University Press.
- Rugman, A. M., & Verbeke, A. 2001. Subsidiary-specific advantages in multinational enterprises. *Strategic Management Journal*, 22(3): 819–834.
- Rugman, A. M., & Verbeke, A. 2002. Edith Penrose's contribution to the resource-based view of strategic management. *Strategic Management Journal*, 23(8): 769–780.
- Rugman, A. M., & Verbeke, A. 2003. Extending the theory of the multinational enterprise: Internalization and strategic management perspectives. *Journal of International Business Studies*, 34(2): 125–137.
- Scotchmer, S. 1991. Standing on the shoulders of giants: Cumulative research and the patent law. *Journal of Economic Perspectives*, 5(1): 29–41.
- Spence, M. 1974. Competitive and optimal responses to signals: An analysis of efficiency and distribution. *Journal of Economic Theory*, 7(3): 296–332.
- Stinchcombe, A. L. 1990. *Information and organizations*. Berkeley, CA: University of California Press.
- Teece, D. J. 1977. Technology transfer by multinational firms: The resource cost of transferring technological know-how. *Economic Journal*, 87(346): 242–261.
- Teece, D. J. 1981. The multinational enterprise: Market failure and market power considerations. *Sloan Management Review*, 22(3): 3–17.
- Telser, L. G. 1980. A theory of self-enforcing agreements. *Journal of Business*, 53(1): 27–44.
- Tseng, E. 1994. Human resource management problems in Sino-foreign joint ventures. *International Journal of Manpower*, 15(9): 4–21.
- Verbeke, A. 2008. Multinational enterprises and the global economy. *Journal of International Business Studies*, 39(7): 1236–1238.
- Verbeke, A., & Greidanus, N. 2009. The end of the opportunism vs trust debate: Bounded reliability as a new envelope concept in research on MNE governance. *Journal of International Business Studies*, 40(9): 1471–1495.
- Wells, L. T. 1983. *Third-world multinationals: The rise of foreign investments from developing countries*. Boston, MA: MIT Press.
- Wells, L. T. 1998. Multinationals and the developing countries. *Journal of International Business Studies*, 29(1): 101–114.
- Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2): 171–180.
- Williamson, O. 1975. *Markets and hierarchies: Analysis and antitrust implications*. New York: Free Press.
- Williamson, O. 1983. Credible commitments: Using hostages to support exchange. *American Economic Review*, 73(4): 519–540.
- Williamson, O. 1985. *The economic institutions of capitalism*. New York: Free Press.
- Williamson, O. 1996. *The mechanisms of governance*. New York: Oxford University Press.
- Zaheer, S. 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2): 341–363.



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