

Transaction Cost Perspectives on Alliances and Joint Ventures: Explanatory Power and Empirical Limitations

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ABSTRACT

Transaction cost economics (TCE) has been extensively applied by international business scholars to analyze joint ventures and strategic alliances. It provides a theoretical basis to analyze how firms organize their transactions with other firms, and hence their choices of governance structures, for example between JVs and other organizational forms. However, TCE has also been frequently critiqued and empirical findings on some of the constructs derived from TCE find inconsistent results.

This chapter critically evaluates the TCE literature on cross-border business activity to evaluate to what extent this empirical literature actually allows to support or refute TCE-based arguments, and to provide directions for future work research. We identify four major challenges: 1) The level of analysis used to proxy transaction costs, 2) contextual drivers of transaction costs, especially in emerging economies, 3) theoretical ambiguity of TCE arguments with respect to distance and experience, and 4) the assumption that JVs are a flexible (low risk) mode of operation. This discussion leads to suggestions how to design empirical research more consistent with the statements of the theory.

1. INTRODUCTION

Transaction cost economics (TCE) is a probably the most frequently used theoretical foundation for studies of joint ventures (JVs) and strategic alliances (see reviews by Tsang, 2000; Zhao, Luo and Suh, 2004; Tihanyi, Griffith and Russell, 2005; Geyskens, Steenkamp and Kumar, 2006; Brouthers and Hennart, 2007; Brouthers, 2013). TCE addresses the question how firms organize their transactions with other firms, and, consequently, where they draw their organizational boundaries. TCE provides a theoretical grounding to analyze the choice of governance structures, for example between JVs and other organizational forms, such as licensing, contracts or wholly-owned subsidiaries (WOS). However, despite its parsimony and its popularity, TCE has also been frequently critiqued and is arguably the most misinterpreted theory in international business research (Borys and Jemison, 1989; Zajac and Olsen, 1993; Ghoshal and Moran, 1996). Moreover, empirical findings on some of the constructs derived from TCE find inconsistent results. While many studies support the arguments of TCE, other studies find insignificant or even opposite results (Zhao et al., 2004; Brouthers and Hennart, 2007).

This chapter critically evaluates the TCE literature on cross-border business activity with two aims; firstly to evaluate to what extent this empirical literature actually allows to support or refute TCE-based arguments, and secondly to provide directions for future work analyzing cross-border strategic alliances using a TCE perspective. The next section briefly introduces the key theoretical concepts and ideas of TCE that have influenced international business research. We focus in particular on the work of Williamson (1975, 1985), Anderson and Gatignon (1986), Buckley and Casson (1976, 1996, 1998), Hennart (1988, 1993, 2009) and Verbeke and Greidanus (2009). Section three systematically reviews TCE-based empirical studies on international alliances and on JVs in foreign countries in particular. It focuses on the research design and the choice of proxies for TCE constructs, and synthesizes the findings about the impact of these constructs on the choice of JVs as opposed to other governance structures. Section four then evaluates the application and testing of TCE on JVs, outlining four major challenges: 1) The testing of transaction level theory TCE with firm level data, 2) Contextual drivers of transaction costs, especially in emerging economies, 3) Theoretical ambiguity of TCE arguments with respect to distance and experience, and 4) The assumption that JVs are a flexible

(low risk) mode of operation. This chapter concludes by outlining managerial implications and future research avenues.

2. THEORETICAL FOUNDATIONS

We start our review by introducing the key theoretical concepts and ideas of TCE. We start with the intellectual roots established by Williamson (1975, 1985), and their application in marketing by Anderson and Gatignon (1986). We then focus on the contributions of internalization theory as developed by Buckley and Casson (1976, 1996, 1998), Hennart (1988, 1993, 2009), Verbeke and Greidanus (2009) and others. While drawing on different roots in the literature these two lines of theorizing offer a largely consistent body of theory.

2.1. TCE, the Theory of the Firm, and the Theory of the MNE

Transaction costs (TC) are the unobservable costs of using the price mechanism or internal mechanisms for business transactions. Ronald Coase (1937) first identified them by as a key factor influencing how firms organize transactions, and in consequence their organizational boundaries. TC take in many forms, including both directly attributable costs such as ‘costs of negotiating and concluding a separate contract for each transaction’ and ‘discovering what the relevant prices are’ (Coase, 1937) and indirect costs such as the opportunity costs of a sub-optimal factor allocation (e.g. due to time lags or selection of a second best offer). Bruce Kogut (1988) defined TCs of market transactions as “the expenses incurred for writing and enforcing contracts, for haggling over terms and contingent claims, for deviating from optimal kinds of investments in order to increase dependence on a party or to stabilize a relationship, and for administering a transaction”. In other words, they are the costs arising from the loss of efficiency in factor allocation due to imperfect coordination between business partners. The trade-off between the costs of using alternative governance structures, specifically the price mechanism of the market and the hierarchy within a firm, determines the optimal organizational form for a given transaction.

Oliver Williamson (1975, 1985) advanced and popularized TCE, arguing that TC arise from the combination of 'bounded rationality' (Simon, 1956) and opportunistic behaviors of market participants. The expectation of possible opportunistic actions by business partners necessitates preventive actions such as comprehensive contracts, whereas bounded rationality inhibits the writing of such complete contracts. These human traits create hazards for arm's length transactions and thus limit the efficiency of markets. Williamson associate TC in particular with transactions that are subject to three characteristics: asset specificity, uncertainty and low frequency. Asset specificity refers to investments by either partner specifically tailored to a particular transaction and is not redeployable outside the relationship of the parties to the transaction. These investments in partner-specific assets are lost sunk costs in the case of a change of partners (Klein, Crawford and Alchian, 1978). Uncertainty arises either when the contingencies surrounding an exchange are too unpredictable to be specified in an *ex ante* contract (external uncertainty) or when performance of a business partner cannot be easily verified *ex post* (internal uncertainty). Transaction frequency refers to the extent to which transactions recur between the same partners. The three concepts of asset specificity, uncertainty and frequency subsequently have become most popular constructs to develop proxies for the presence of TCs.

In the international business literature, Peter Buckley and Mark Casson (1976) developed internalization theory with a similar logic as Williamson's TCE. Specifically, the internalization literature aims to explain why MNEs establish own subsidiaries abroad rather than engage in arm's length trading relationships. They explain such 'internalization' of foreign activities as a choice driven by the costs and benefits of alternative forms to arrange cross-border transactions (also see Hennart, 1982; Rugman, 1980). A key difference to Williamson's work is their focus on information asymmetries as a cause of market failure. In other words, rather than asset specificity, it is the non-specificity of knowledge transfers that causes markets to be inferior to internal forms of organization. Knowledge has some properties of public goods in that it can be shared at minimal costs and owners can find it hard to exclude others from its use, unless property rights are identified, clearly defined, legally protected, and enforced. Such non-specific knowledge can easily be used by a recipient for purposes not authorized by the transferor, which

may damage the transferor's economic interests. For example, licensees may be able to use some of the received knowledge to establish operations that compete with those of the licensor. Such unauthorized diffusion of knowledge is a key motive for MNEs to internalize cross-border transactions.

An important recent advance to TCE is Alain Verbeke and Nathan Greidanus' (2009) notion of 'bounded reliability', which substitutes for opportunism in Williamson's framework. Specifically, they argue that it is not opportunism *per se* that determines the choice of organizational forms because opportunistic behaviors only happen *ex post*, if at all. Rather it is the anticipation of possible opportunistic behaviors, or a lack of trust in the business partner (Casson, 1995) that determines decisions such as the choice of foreign entry mode. Verbeke and Greidanus (2009) call this 'bounded reliability', which refers to the inability of humans to be sure as to how other human beings will react in unpredictable future situations. The bounded reliability is influenced by contextual factors such as the trust that may exist between two business partners, or the ability to enforce contracts through arbitration or courts. Hence, in Verbeke and Greidanus (2009)'s model TCs arise from the combination of bounded rationality and bounded reliability.

2.2.TCE and Cross-Border Business Transactions

Various costs of transactions are magnified when business partners are separated by large geographic, economic, administrative or cultural differences. All these differences increase the costs of organizing transactions across borders, which makes international business a particular interesting field to develop TC theory. In its original form, TCE distinguishes between firms (hierarchies) and markets (or the price mechanism), and as such informed early international business research on the choice between foreign direct investment and licensing (Contractor, 1984; Kumar, 1987; Davidson and McFetridge, 1985).

However, cross-border business transactions often take place within strategic alliances, which involve complex transactions, which are neither a pure market transaction, nor a pure intra-firm transaction (Anderson and Gatignon, 1986; Hill, Hwang and Kim, 1990; Meyer, Wright and

Pruthi, 2009). Hence, the first challenge for applying TCE is to identify the TC characteristics of strategic alliances (Meyer, 1998: chapter 4). In a strategic alliance, business partners engage in complex bundles of often interconnected transactions; and governance structures are chosen for these sets of transactions. Hence, it is appropriate to apply TCE to sets of transactions between pairs (or groups) of business partners, and hence focus on the relationship between two firms as unit of analysis. It gets however more complex in the case of equity joint ventures (JVs),¹ a specific form of strategic alliance. In a JV, a new organization is created that in turn has separate (but not independent) sets of transactions with each of its parents, each being subject to different TCs. This complexity created challenges for theory development in international business.

Hubert Anderson and Erin Gatignon (1986) address these conceptual challenges by mapping alternative organizational forms on a single scale that reflects the tradeoff between control and resource commitment that an MNE would face when establishing operations abroad. They then position seventeen types of entry modes on this scale, with non-exclusive, non-restrictive contracts being low control, wholly owned subsidiary being high control, and various forms of contracts as well as joint ventures taking intermediate positions. Anderson and Gatignon (1986) draw directly on Williamson to motivate the determinants of firm's preference of high-control as opposed to low-control modes: transaction-specific assets, external uncertainty, internal uncertainty and free-riding potential. Table 1 presents the propositions pertaining to each of the four constructs. In addition to the direct effects, they propose that the joint effects of external uncertainty and asset specificity positively interact to increase TCs, which induces foreign investors to seek higher levels of control (Anderson and Gatignon, 1986).

*** *Table 1 here* ***

Also other TC scholars used a single scale to map organizational forms. Most notably, Williamson (1991: 280) notes hybrid modes such as '*various forms of long-term contracting, reciprocal trading, regulation, franchising and the like*' as '*located between markets and hierarchies with respect to incentive adaptability and bureaucratic costs*'. Jean-François Hennart (1993) makes this line of thought more explicit by focusing on two types of costs that may occur in transactions: shirking costs and cheating costs. Shirking costs are the costs arising when using

hierarchy mechanism, whereas cheating costs are the costs incurred when using price system. When the governance systems of price and hierarchy are blended, even lower total costs can be obtained. In Hennart's (1993) model, intermediate forms thus are governance structures that combine elements of the price mechanism with hierarchical coordination, and thereby achieve coordination at lower total costs.

Alternatively, JVs and other hybrid forms can be interpreted as organizational modes with no implicit order. Buckley (1985a: 52) argues that '*a simple spectrum running from wholly-owned foreign subsidiary to "simple contracts" is an inadequate representation of the nuances and complexities of the different arrangements.*' Buckley and Casson (1996) map foreign entry modes on two dimensions, volatility and market size, and show that licensing is preferable if high volatility combines with large market size; yet it is less attractive vis-à-vis 'no business' or FDI, if patent rights are poorly protected or if the value of the technology is highly uncertain. JVs become less attractive if uncertainty is high due to for example high cultural distance.

JVs in particular are established under very specific conditions (in addition to JVs necessitated by ownership restrictions of a host country, which are not subject of this review). In particular, Hennart (1988, 2009) identifies the necessary and sufficient conditions under which JVs are preferable to market transactions: an operation would be set-up as a JV if, firstly, an operation depends on contribution from more than one parent firm, secondly, these contributions are subject to high TCs, and thirdly, a full takeover is not feasible. In his study of the bauxite and tin industries, Hennart (1988) identifies distinct types of JVs: *scale JVs* and *link JVs*. *Scale JVs* are created when two or more firms enter together a continuous stage of production, a distribution channel, or a new market where by joining their operations they can benefit from economies of scale. In contrast, a *link JV* connects firms at different stages of a value chain, and hence their motives are not the same but complementary as the JV helps to bypass two sets of inefficient markets for intermediate inputs.

Buckley and Casson (1998) focus on the different types of operations that MNE undertake abroad, and the different types of flows in terms of goods, services and knowledge arising in these types. Buckley and Casson (1998) identify possible entry strategies on the basis of four

dimensions: production location (home vs. foreign), ownership of production and distribution (entrant vs. local rival) and equity share (outright vs. shared). Either production or distribution, or both of them, can be owned by foreign entrant and local partners. This approach has been further developed by Tailan Chi (Chi and McGuire, 1996; Chi and Seth, 2009) and Niron Hashai (Hashai, 2009; Buckley and Hashai, 2009), as well as recent work on the ‘global factory’ by Buckley (2009, 2011).

An assumption, however, in the work of Anderson and Gatignon (1986) and scholars in their tradition is that the nature the transactions are the same. Specifically, as marketing scholars, they (implicitly) analyze foreign entrants aiming to serve a local market through a local operation. MNEs manage a variety of different types of operations, each of which engages in different types of transactions with other firms. A pivotal difference between the approaches to foreign entry by international business scholars like Buckley, Casson, and Hennart and by marketing scholars is that international business scholars consider the TCs incurred by all parties partaking in a transaction, whereas scholars such as Anderson and Gatignon (1986) consider entry mode choice only from the view point of foreign MNEs. In other words, Anderson and Gatignon (1986)’s TCE framework neglect the perspective of owners who own local complementary assets. Similarly, many empirical tests of internalization theory solely focus on the internalization advantages from the perspective of the multinational firm. However, actual organization form is the outcome of a negotiation between all partners in the transaction. Hence, Hennart (2009, 2012) and Meyer, Estrin, Bhaumik and Peng (2009) emphasize that the optimal entry mode choice depends on relative efficiency of the markets for inputs of both MNEs and local owners of complementary assets.

3. TCE BASED EMPIRICAL STUDIES ON JVS

TCE has motivated a large number of empirical studies of organizational forms for foreign entry, and JVs in particular. Table 2 summarizes these studies providing information about the dataset (home country, host country, sample size, time period), TCE constructs, level of TC proxies and major findings/implications. We selected articles for this review using two criteria: 1) the

dependent variable includes JVs or another form of alliance between foreign and local partner(s), and 2) the authors use TCE based arguments to motivate their study, for example by using concepts such as asset specificity and uncertainty. Like earlier reviews (Zhao et al., 2004, Geyskens et al., 2006, Brouters and Hennart, 2007) we note that transaction frequency is an important theoretical construct of TCE that has not been analyzed sufficiently in the empirical literature. We thus do not address transaction frequency in our review.

*** *Table 2 here* ***

3.1.Asset Specificity

Asset specificity has been proxied using both archival and survey based data. The most popular proxies are firm level measures such as the ratio of R&D and/or advertising expenditure over total sales at either industry or firm level (Hennart and Larimo, 1998; Padmanabhan and Cho, 1996; Delios and Beamish, 1999; Makino and Neupert, 2000; Meyer, 2001; Chen and Hu, 2002; Chen and Hennart, 2002; Dikova and Witteloostuijn, 2007). However, these same variables also have been used to proxy different constructs such as information asymmetry or resource endowments, which limit their explanatory power with respect to a particular theory. Alternatively, Gomes-Casseres (1989, 1990) uses business process customization proxied by intra-firm trade, while Hennart (1991) introduce a resource-industry dummy for the same purpose. All these measures capture asset specificity only indirectly, and make somewhat speculative assumptions as to how the characteristics of a firm influence the types of transactions that this firm would undertake.

Rigorous testing should measure TCs at the level of transactions or inter-firm relationships. Hence, several studies employed survey based measures on the value of firm specific know-how and tacit nature of know-how (Kim and Hwang, 1992), on professional skills, specialized know-how and customization (Erramilli and Rao, 1993), on contributed technological expertise, risk of abuse by potential JV partners, and contributed unique skills (Rajan and Pangarkar, 2000), on technology and management transfer (Meyer, 2001) and on human asset specificity, proprietary

products/service and dedicated asset specificity (Brouthers and Brouthers, 2003; Brouthers, Brouthers and Werner, 2003).

Studies using firm-level proxies provide mixed findings. Many studies find high R&D intensity to increase the preference for WOS over JVs (Gatignon and Anderson, 1988; Padmanabhan and Cho, 1996; Delios and Beamish, 1999; Makino and Neupert, 2000; Hennart and Larimo, 1998; Chen and Hu, 2002; Dikova and Witteloostuijn, 2007). Yet, non-significant relationships are found by Gomes-Casseres (1989, 1990), Hennart (1991), Taylor et al. (1998), Meyer (2001), Brouthers (2002) and Chen and Hennart (2002) while a positive relationship between asset specificity and JVs is found by Palenzuela and Bobillo (1999). Inconsistent findings are also found for advertising intensity. While Gatignon and Anderson (1988), and Gomes-Casseres (1989; 1990) find that MNEs prefer WOS to JVs when the degree of advertising intensity is high, Kogut and Singh (1988), Hennart (1991) and Chen and Hu (2002) find insignificant relationships.

Survey-based studies find more consistent support. Kim and Hwang (1992) find that firms prefer WOS as opposed JVs when the level of tacit nature of know-how is high, while Rajan and Pangarkar (2000) find multiple indicators of firm specific assets to be positively associated with high control modes. Similarly Brouthers et al. (2003) and Brouthers and Brouthers (2003) find asset specificity measured at the transaction level to be positively related with WOS as opposed to JVs in manufacturing and service firms. However, Meyer (2001) fails to find evidence that technology and management transfer would influence the choice between WOS and JVs.

3.2. Internal Uncertainty

Internal uncertainty relates to uncertainties that arise from incomplete knowledge about partners' future actions, what Williamson (1975; 1985) refers to as opportunism, and Verbeke and Graidanus (2009) as 'bounded reliability'. The most commonly used empirical constructs for internal uncertainty are cultural distance and international experience (Hennart, 1991; Agarwal, 1994; Erramilli and Rao, 1993; Padmanabhan and Cho, 1996; Hennart and Larimo, 1998; Chen and Hu, 2002; Chiao, Lo and Yu, 2010; Kuo, Kao, Chang and Chiu, 2012). The assumption here

is that the more 'distant' a business partner, and the less experienced a firm is in dealing with that sort of business partner, the higher the likelihood of unexpected or opportunistic behaviors of the partner.

Cultural distance has often been measured by Kogut and Singh (1988)'s composite index based on Hofstede's four cultural dimensions (Gatignon and Anderson, 1988; Kogut and Singh, 1988; Erramilli and Rao, 1993; Agarwal, 1994; Erramilli, 1996; Hennart and Larimo, 1998; Padmanabhan and Cho, 1996; Chen and Hu, 2002; Cho and Padmanabhan, 2005). Lopez-Duarte and Vidal-Suarez (2013) measure cultural distance by Schwartz and GLOBE's approach. A few studies proxy distance by the geographical locations in which the investments are located (Chang and Rosenzweig, 2001; Quer, Claver and Rienda, 2007). In terms of findings, a majority of studies such as Gatignon and Anderson (1988), Erramilli and Rao (1993), Agarwal (1994), Hennart and Larimo (1998), Taylor et al., (1998), Brouthers and Brouthers (2001) and Quer et al. (2007) find that cultural distance have a positive impact on preference for JVs over WOS, whereas Padmanabhan and Cho (1996), Meyer (2001), Chang, Kao, Kuo and Chiu, (2012) and Lopez-Duarte and Vidal-Suarez (2013) find the opposite relationship and Erramilli (1993), Cho and Padmanabhan (2005) and Demirbag et al. (2009) find insignificant effect.

International experience has been proxied with secondary data along four dimensions: length, scope, diversity and intensity (Clarke, Tamaschke and Liesch, 2013).² The length of international experience refers to the number of years since the establishment of the first foreign subsidiary (Erramilli, 1991; Hennart, 1991; Padmanabhan and Cho, 1996; Contractor and Kundu, 1998; Cho and Padmanabhan, 2005; Meyer and Li, 2009). The scope of international experience is measured by the number of countries in which the parents have established subsidiaries (Kogut and Singh, 1988; Kuo et al., 2012). Diversity of international experience is captured by the breadth of firm's experience across its various products and distribution channels. Intensity of international experience refers to the volume of cross-border activities and is often measured by the number of foreign subsidiaries prior to the observed investment (Gatignon and Anderson, 1988; Kuo et al., 2012). Moreover, Agarwal (1994) indirectly measures international experience with the proportion of assets in foreign countries.

Empirical findings related to international experience tend to be mixed. Gatignon and Anderson (1988), Hennart (1991), Agarwal and Ramaswami (1992), Chu and Anderson (1992), Contractor and Kundu (1998) and Kuo et al. (2012) find that firms with limited or no international experience tend to prefer JVs as opposed to WOS, while Rajan and Pangarkar (2000) find that international experience encourages high control (WOS and majority JVs) as opposed to low control modes (equal and minority JVs). In contrast, Erramilli (1991) and Chiao et al. (2010) find a reverse relationship and Kogut and Singh (1988), Agarwal (1994), and Padmanabhan and Cho (1996) find non-significant relationship. Li and Meyer (2009) even find different effects for different types of host countries in their study of Taiwanese MNEs: location-specific experience facilitates JVs, but only in mainland China, while general international experience makes WOS more likely in developed economies in Asia and Europe.

Direct measures of internal uncertainty at the level of partner firms include survey-based perceptual measures such as problems associated with monitoring performance product/service quality (Brouthers et al., 2003), monitoring and safeguarding proprietary knowledge (Brouthers et al., 2003) and the costs of search, contracting and enforcement (Brouthers and Brouthers, 2003). These studies also provide mixed results. While Brouthers et al. (2003) find that the impact of internal uncertainty is non-significant, Brouthers and Brouthers (2003) find internal uncertainty to be positively related with WOS as opposed to JVs for service firms. Overall, the findings on the impacts of internal uncertainty on organizational form have been far from consistent, an issue that we return to later.

3.3.External Uncertainty

External (or environmental) uncertainty has been operationalized in a number of different ways. Some early studies focus on country risk, operationalized for example using the classification system of Goodnow and Hansz (1972) (Anderson and Gatignon, 1988; Agarwal, 1994). Quer et al. (2007) approach country risk using a classification of countries based on CESCE. Several studies rely on survey data to directly measure country risk, for example, risk of converting and repatriating profits, nationalization risk, as well as political, social and economic stability

(Brouthers, 2002; Brouthers and Brouthers, 2003; Brouthers et al., 2003). Further on, Klein et al. (1990) proxy country risk with managerial perceptions on volatility and diversity surrounding a particular transaction.

While Gatignon and Anderson (1988) and Agarwal (1994) find that country risk leads to the preference of WOS as opposed to JVs, most of the studies such as Klein et al. (1990), Contractor and Kundu (1998), Palenzuela and Bobillo (1999), Brouthers (2002), Brouthers and Brouthers (2003), Brouthers et al. (2003) and Quer et al. (2007) find that lower commitment mode is preferable when entering high risk economies. Erramilli and Rao (1993) indicate that the impact of country risk on the choice between WOS and JV is not significant. Moreover, Delios and Beamish (1999) find that country risk is not a significant determinant of Japanese firms' ownership level. In a meta-analysis study, Zhao et al. (2004) find that country risk is the most influential TCE factor to explain the choice of JVs and WOS.

External uncertainty has also been proxied by market uncertainty or market potential for a firm's product or service (Agarwal, 1994; Taylor et al., 1998; Brouthers, 2002; Chen and Hu, 2002; Cui and Jiang, 2009). Most of these studies support the argument that market potential in the host country increases the preference of Western parent firms to choose WOS as opposed to JVs (Agarwal and Ramaswami, 1991; Agarwal, 1994; Taylor et al., 1998; Chen and Hu, 2002), while Brouthers (2002) finds a non-significant relationship. However, in a recent study, Cui and Jiang (2009) find that Chinese firms prefer JVs over WOS when entering high potential market.

4. CHALLENGES TO EMPIRICALLY TESTING TCE ON JVS

Despite its popularity as a foundation for empirical research, the application of TCE to JVs and strategic alliances faces major challenges that have not been appropriately addressed in the empirical literature. These challenges in designing a TCE-based empirical study explain at least in part the lack of consistency in the results of empirical research. In this section, we elaborate four challenges for empirical tests of TCE arguments on JVs and strategic alliances: 1) the level of analysis used to proxy transaction costs, 2) contextual drivers of transaction costs, especially

in emerging economies, 3) theoretical ambiguity of TCE arguments with respect to distance and experience, and 4) the assumption that JVs are a flexible (low risk) mode of operation.

4.1. The Testing of Transaction Level Theory TCE with Firm Level Data

TCE is by definition concerned with the organization of transactions, or sets of transactions, between or within firms. Hence, of primary interest are the characteristics of transactions (Andersen, 1997; Williamson, 1975, 1985; Madhok, 1997; Leiblein and Miller, 2003; Tsang, 2006), and the methodologically most rigorous approach would measure TC at the level of transactions. However, this is virtually impossible because a rigorous test would require not only the actual TCs but also those of the next best organizational form that the firm did not choose (Meyer, 2001). Moreover, such a test would require *ex-ante* information on both partners, and the JV operation itself (preferably the contribution from both parents as intended at the outset). Some scholars use perceptual measures obtained from managers (Brouthers et al., 2003), but even this approach is imperfect because of discrepancies between managers' perceptions of TC and actually measured costs (Buckley and Chapman, 1997).

Hence, most studies use data at higher level of aggregation, such as the firm, the industry, or the country, to proxy the characteristics of the transactions that the authors presume the firm would conduct in the given context. While it can be theoretically argued why certain types of firms would undertake certain types of transactions, the use of data at levels of aggregation above the transaction creates measurement biases likely to distort the results (Hennart, 1991). The most striking example is asset specificity. Several studies proxy asset specificity by the R&D or advertising intensity of the firm or by the pertinent industry (Hennart, 1991; Dikova and Witteloostuijn, 2007; Chiao et al., 2010). Only few studies operationalize asset specificity at the transaction level (Brouthers, 2002; Brouthers and Brouthers, 2003; Brouthers et al., 2003). Such a mismatch of the level of analysis is likely a cause of inconsistent findings for the relationship between asset specificity and organizational form, as discussed above.

A closely related concern is that most studies proxy transactions cost solely using the characteristics of a focal firm, typically the foreign investor. They thus implicitly assume that the local partners' contributions play no role in MNE's entry mode strategy (Hennart, 2009), or at least that their contributions are not correlated with the focal variables in the empirical test. However, complementary assets held by local partners are a key determinant of entry mode strategy of MNEs. For example, when local firms enjoy privileged access local resources, MNEs are more likely to opt for JVs as opposed to WOS, as observed in resource-based industries (Gomes-Casseres, 1989; Brouthers and Hennart, 2007; Hennart, 2009). These local owners of resources would be interested in getting a deal that enables them to best exploit their resources. Hence, studies that neglect the interests of local partners who control these complementary resources may lead to misleading managerial implications (Hennart, 2009). In other words, observed organizational forms are the outcome of negotiations between (at least) two partners. Thus, when choosing an organizational form, MNEs may have their preferences, but the observed organization form also depends on the transaction costs faced by the local partner.

This discussion highlights that future research needs to be much more careful in measuring TCs. Firstly, TCs need to be proxied as close to the actual transaction (or sets of transactions) as feasible. Secondly, studies need to incorporate the TCs incurred by all partners of a transaction or an alliance, not only those incurred by the focal firm.

4.2. Contextual Drivers of TCs in Emerging Economies

Studies that focus on firm characteristics to proxy TC implicitly assume that TCs are not affected by variations in the external environment, such as institutions shaping the efficiency of markets (Meyer and Peng, 2005). This assumption may not hold true when applying TCE in emerging markets such as China or Central Eastern Europe (CEE). The core elements of TCE such as opportunism and uncertainty are major concerns in emerging markets (Wright, Filatotchev, Hoskisson and Peng, 2005). However, these drivers of TC are associated primarily with idiosyncrasies of the environment, and only secondarily with the characteristics of the firms (Luo, 2007). Hence, focusing on the sources of TCs that are the main focus of earlier empirical

research, such as asset specificity and internal uncertainty, may not suffice when analyzing emerging markets. Lack of information systems and weak legal systems (i.e., weak law enforcement in courts) increase search, monitoring and enforcement costs in emerging markets (Meyer and Peng, 2005). Moreover, regulatory ambiguity and corruption tends to be pervasive, which makes opportunistic behaviors of business partners in emerging markets difficult to identify and to constrain (Choi, Lee and Kim, 1999; Li and Meyer, 2009). However, capturing such environmental characteristics is a major challenge for empirical research.

In multi-country studies, the environmental features that drive TC have been captured by indices of institutional development. For example, Meyer (2001) operationalizes institutional development by European Bank for Reconstruction and Development (EBRD) indices and found that MNEs prefer WOS as opposed to JVs and contracts in economies that have progressed further in institutional reforms. Meyer et al. (2009) use economic freedom indices obtained from Freedom House and find that under high level of institutional development, JVs are less preferred to full acquisitions or WOS greenfields, but this effect is negatively moderated by the transfer of intangible assets. Dikova and Witteloostuijn (2007) measure the host country's institutional advancement by World Bank's Governance Indicators and find institutional advancement in CEE to positively moderate the preference of technological intensive firms to choose JVs. Hence, there is strong evidence for national institutions to influence the choice of organizational form, but this effect is moderated by the characteristics of the transaction.

However, institutions vary not only between but also within countries, yet it is more difficult to find suitable proxies at lower levels of aggregation. Focusing on provinces in Vietnam, Meyer and Nguyen (2005) proxy market efficiency by the presence of state owned firms, and find that that the less efficiency are markets, the more foreign investors would use JVs as opposed to greenfields to access critical local resources in a province. Chiao et al. (2010) use perceptual measures and find that perceived institutional differences moderates the relationship of TCE variables and ownership mode strategy in China.

Despite these differences in methodologies, this stream of research provides fairly strong evidence that institutions in emerging markets shape the TCs. However, how, why and which

institutions matter still remains an area of divergent interpretations and theorizing. Hence, future studies probing into emerging markets should consider how the external environment moderates TCs, for instance by probing deeper to identify which aspects of institutions matter, especially with respect to institutions that vary within countries – e.g. across industries or across provinces. Moreover, the interaction between environmental and firm-level characteristics merits further research building on Meyer et al. (2009), and Dikova and Witteloostuijn (2007). Finally, even studies that do not focus on contextual variations in their theorizing need to be acutely aware of the importance of institutional influences because it not only requires appropriate controls, but may limit the generalizability of single context studies.

4.3. The Theoretical Ambiguity of Effects of Experience and Distance

Two variables have been particularly prominent in the TCE literature on JVs and strategic alliances: “experience” and “distance” (Andersson and Gatignon, 1986; Hennart, 1991; Kogut and Singh, 1988; Hennart and Larimo, 1998; Meyer, 2001). They exist in many variations, such as the length and breadth of experience in a particular country, or worldwide (Li and Meyer, 2009; Clarke et al., 2013), or as distance between the home and host countries in terms of culture, geography, administration, or economic development. The theoretical argument is that that experience is expected to reduce internal uncertainty, whereas distance tends to increased internal uncertainty, both of which increase the cost of market transactions. In other words, the likelihood of running into problems with business partners due to opportunistic behaviors is larger the greater the differences are between host and home country, and the less experienced a firm is in the host country.

How does this effect influence entry mode choice? The mainstream argument suggests that WOS by distant or inexperienced investors would face these increased TCs in their relationships with local suppliers, distributors or customer. A local JV partner would have local knowledge, and therefore face substantially lower costs in managing transactions with local businesses. Hence, it has frequently been hypothesized that high distance and low experience are associated with investors establishing a JV rather than a WOS (Gatignon and Anderson, 1988, Erramilli and Rao,

1993, Agarwal, 1994, Hennart and Larimo, 1998, Taylor et al., 1998). This argument however is *fundamentally flawed*, and suggests an incomplete understanding of TCE!

Decisions over organizational forms are, according to TCE, based on the costs of using the market *relative* to using an internal form of organizing (Hennart, 1988; Li and Meyer, 2009) or, in this case, a strategic alliance. The word ‘relative’ is important here. In the above theoretical arguments, esteemed theorists assume that their focal variable, distance or experience, impacts on the cost of using the market but they neglect the impact of the same explanatory variable on the alternative form of organizing. In fact, distance and lack of experience increase many aspects of doing business, for example search and contract enforcements (i.e. costs associated with markets), coordination and decision coordination costs (i.e. costs associated especially with joint ventures), as well as costs of hiring, monitoring and incentivizing local employees (i.e. costs associated especially with WOS). Hence, distance and lack of experience increase the costs of any form of organizing, not just the TCs of using the market.

This ambiguity is particularly evident in the case of JVs. Foreign investors with limited experience are often advised to use JVs to lower the costs of accessing local knowledge and relationships. However, their lack of experience will also make it more costly to select an appropriate partner, and to manage the relationship with that partner. Experienced firms are able to select an appropriate partner and to better manage JVs, which in turn, increases the probability to opt for JVs (Li and Meyer, 2009). This is to suggest that experience, on one hand, reduces the need for a local partner and hence encourages foreign investors to establish WOS. On the other hand, experience facilitates cooperation between foreign investors and local partners. The same argument can be made for distance.

TCE explanations of organizational form are always about the TCs of external markets (i.e., searching, monitoring and enforcement costs) *relative* to internal coordination (i.e., training, staffing and communication). The constructs of experience and cultural distance simultaneously affect external and internal costs in the same direction. Hence, the impact of distance and lack of experience depends on the relative strength of the relationship between these constructs and costs of using respectively internal or external coordination. The theory does not tell which of these

effects is stronger. Therefore, we have to conclude that properly applied TCE does not allow us to predict the relationship between distance, experience and foreign entry mode choice. The relationship between distance/experience and the choice of organizational form is theoretically ambiguous.

Researchers can, however, explore under which conditions either of the impact is likely to be stronger. In other words, the relative importance of the effect on respectively internal and external organizational forms is contingent on type of experience, the local context of the operation and MNE's own context (Figure 1). For example, Li and Meyer (2009) find that the positive relationship between general IB experience and the choice of high-control (i.e., WOS) as opposed to low-control organizational forms (i.e., JVs) is stronger in developed economies, whereas the negative impact of country specific experience on the needs to obtain high level of control is stronger in developing countries. Such types of contingencies provide opportunities to advance TCE research because they allow investigating the interdependence between external and internal factors shaping TCs in a particular market.

*** *Figure 1 here* ***

4.4. JVs Do not Enhance Flexibility

International business scholars often implicitly assume that a JV is a less risky and more flexible organizational form than a WOS when operating in volatile and uncertain market (Anderson and Gatignon, 1986; Gatignon and Anderson, 1988; Kim and Hwang, 1992; Erramilli and Rao, 1993). Despite advantages of JVs such as lower resource commitment and shared costs and risks, JVs suffer from internal risks such as conflicts between the parent firms. JVs are based on long-term contracts such that one of the JV partners cannot simply abandon the relationship (Meyer and Tran, 2006). Moreover, any strategic decision in the JV requires mutual agreement between the parent firms. Even if a foreign investor owns a substantial majority equity stake, they need the cooperation of the local partner to rarely push through proposed strategic actions. A local partner

attains influence not only through its equity stake, but indirectly through people delegated to work in the JV, through relationships with external stakeholders (say, trade unions, or government officials), and possibly through ownership of key assets such as real estate or distribution channels. Hence, characteristics other than ownership, such as trust between the partners, become critical for the effective management of a JV (Madhok, 2006). Without that, JV is a highly *inflexible* mode of operating because the foreign investor is constrained in making strategic changes. The time the parent firms need to react to radical internal and external environment change is bound to be longer (Peng and Meyer, 2011).

The idea that a majority owner in a JV enjoys full control over a joint venture is an illusion that unfortunately is common in the ivory towers of academia. Yet, this assumption is very far from the realities of JVs in emerging economies. The autobiographies by Leblanc (2008) and Clissold (2009), two expatriates involved in managing JVs in China in the 1990s, very vividly illustrate these points. There is also compelling evidence that 50:50 JVs are actually doing quite well in China (Lin and Wang, 2008), despite being considered unworkable by many advisors, especially those with a legal background. While China in the 1990s may have created extreme situations, the general point holds true elsewhere too: local stakeholders – be they minority shareholders, employees, or local politicians – have their own bargaining points that they can use to shape what happens in a JV. Hence, many aspects of TCs are in fact higher in JVs than that in either market transactions or in hierarchies, especially the opportunity costs of coordination failure, or of slow response to emergent market opportunities.

Table 3 highlights the risks related to four types of equity modes of entry: wholly-owned greenfields, full acquisitions, newly established JV and partial acquisition. Newly established JVs suffer less from investments risk due to lower capital commitment, and normally no post-establishment integration risk (unless parts of an existing operation are moved to the new operation, as was common in Vietnam as certain times, Nguyen and Meyer, 2004). However, they are highly exposed to coordination risk and hence more likely to miss emergent market opportunities because they are too slow to react. Investors in partial acquisitions face limited investments risk due to low capital investments, however, partial acquisitions are exposed to high risks of integration problems and conflicts between co-owners (Meyer and Tran, 2006).

Hence, the JVs are only low risk in the sense that the maximum financial loss is less compared to owing the same size operation outright. Full acquisition and greenfield operations may require more investment up-front (and higher financial risks), but they are in fact more flexible to react to changing environments.

*** *Table 3 here* ***

5. SUMMARY AND CONCLUSIONS

TCE provides a very developed and sophisticated foundation for the analysis of the choice of organizational forms, and strategic alliances in particular. It has become the most commonly used theoretical approach to analyze the merits of cross-border JVs relative to alternative organizational forms such as arm-length markets, contractual arrangements (i.e., licensing, franchising) and WOS. However, the empirical evidence for core TCE constructs such as asset specificity and (internal and external) uncertainty is far from satisfactory. We attribute this to four challenges arising for empirical testing of TCE (Table 4). While our review focused on tests of TCE based on empirical analyses of ownership choices, similar challenges also pertain to TCE informed studies of JV performance (Lu and Høbert, 2005; Chang, Chung and Moon, 2013) and of ownership change (Puck, Holtbrügge and Mohr, 2009).

*** *Table 4 here* ***

First, TCE has been designed to analyze actual transactions, yet the measurement of costs at the level of transactions (or inter-firm relationships) is methodologically very challenging. Many studies thus proxy TCE constructs such as asset specificity at the (foreign) parent firm level. The same variables, i.e. R&D/advertising intensity of the firm, have also been used to proxy non-TCE constructs such as firm resources in studies of resource- or knowledge based theories. This

limits the explanatory power of TCE. For the future studies, we propose that asset specificity and uncertainty should be measured as close to the transaction level as feasible. Moreover, future work ought to consider the transaction costs incurred by *all* partners involved in the actual transaction.

Second, traditionally empirical TCE studies argue that distance and lack of experience would increase the external TCs of market transactions, and hence, JVs would be preferred because they facilitate access to local knowledge and thereby reduce the costs of interacting with local suppliers and customers. However, internal TCs such as coordination costs incurred in JVs are also likely to be high for distant and inexperienced firms. Hence, both distance and experience impact on the cost of both internal and external coordination, and within a TCE framework they do not lead to unambiguous predictions regarding their impact on organizational forms. The mixed empirical findings related to JVs can be partly explained by this theoretical ambiguity of the impacts of distance and experience on the TCs of different organizational forms. Future research ought to analyze how focal variables influence external transaction costs *relative* to internal costs of coordinating and organizing in the case of JVs, possibly by exploring moderating effects.

Third, many TCE studies assume that the market is relatively static and well developed, and hence, TCs do not vary within the sample due to variations in the external environment. These assumptions may not hold true for emerging economies, and therefore, characteristics of firms may not be very effective to capture transaction cost drivers in countries such as CEE and China. Weak information and legal systems increase search, monitoring and enforcement costs (Meyer and Peng, 2005; Luo, 2007), while regulatory ambiguity and corruption tend to increase external uncertainty in emerging markets (Li and Meyer, 2009). These environmental influences can be studied directly, controlled for through control variables, or assumed only to create random noise in a given dataset. Clearly, we find the latter approach unsatisfactory. Researchers studying JVs in emerging markets may thus want to examine how the external environment moderates TCs.

Finally, most of TCE based studies implicitly assume that JVs are a flexible organizational form, and hence, MNEs prefer to use JVs as opposed to WOS to enter high risk environments. As

discussed above, JVs are normally formed on the basis of long-term contracts and any strategic changes need to be mutually agreed between all JVs partners. In consequence, JVs are in fact a highly inflexible organizational form and therefore not suitable for high risk environments where foreign MNEs may need to get out quickly. Future research applying TCE to JVs and strategic alliances ought to consider the conditions under which alternative organizational forms are more flexible, and provide more rigorous treatment of alternative types of risks that entrants are exposed to.

NOTES

1. We use the term JV exclusively to refer to equity joint ventures, and hence do not repeat the term equity each time.
2. IB literature has identified several types of experience: international experience, host country specific experience and decision specific experience (Clarke et al., 2013). In this review we focus on international experience because this experience is frequently used to proxy internal uncertainty. The theoretical arguments regarding its treatment in the literature largely also extend to other forms of experience.

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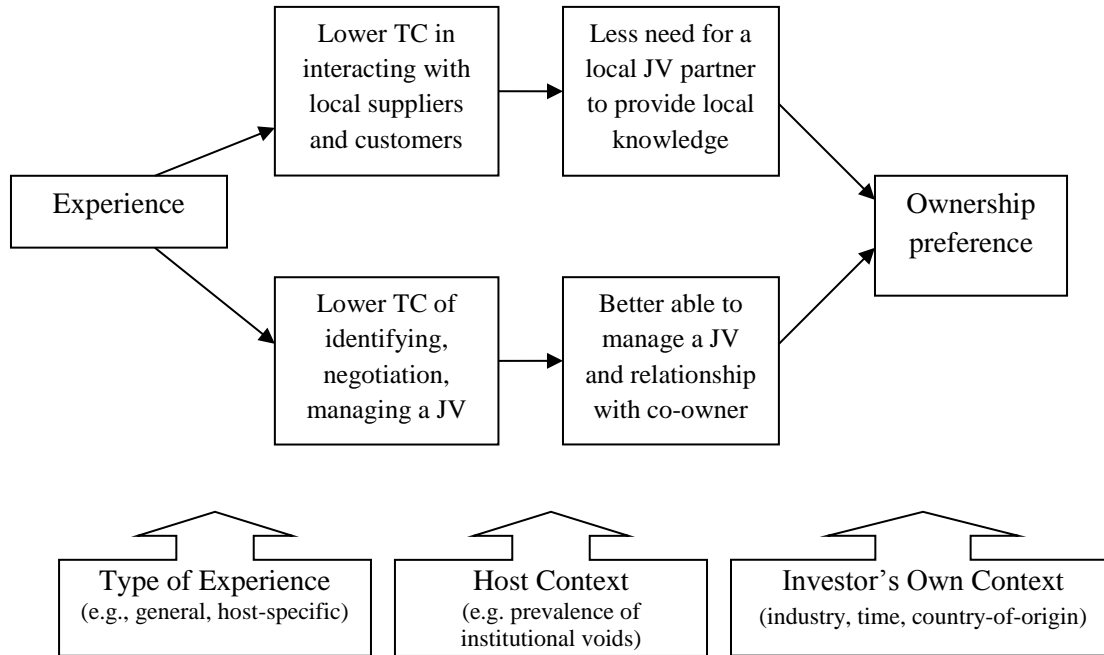
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Figure 1: Contexts influence the relative strength of contradictory primary effects



Source: Extension of a Figure in Li and Meyer (2009).

Table 1: Anderson and Gatignon (1986)'s transaction cost propositions

TCE constructs	Propositions
Transaction specific assets	1) Highly proprietary products and processes (+) 2) Unstructured and poorly understood products and processes (+) 3) Customized products (+) 4) Immature products (+)
External uncertainty	1) Country risk (non-significant) 2) Country risk X transaction specific assets (+)
Internal uncertainty	1) International experience (+) 2) Socio-cultural distance (-)
Free-riding potential	Valuable brand name (+)

+ = increase the need for high control mode.

Table 2. Empirical studies applying TCE to JVs

Study	Empirical design	Choice set	TC constructs	Level of TC Proxies	Major findings / implications
Gaignon & Anderson (1988)	1267 U.S. manufacturing FDI's worldwide	WOS and JV	R&D intensity, Advertising intensity, Cultural distance, International experience, Country risk	Transaction and country level proxies (archival data)	1) R&D/advertising intensity and international experience increases the preference of WOS over JVs. 2) Country risk and cultural distance increase JVs as opposed to WOS.
Kogut and Singh (1988)	506 foreign firms operating in the U.S. during 1981 to 1985	JV, greenfield and acquisition	Cultural distance, Cultural attribute (uncertainty avoidance), U.S. asset size, non-U.S. asset size, Diversification, Country specific experience, Multinationality, Firm size, R&D intensity, advertising intensity, Industry dummy	Firm, industry and country level proxies (archival data)	1) Cultural distance and uncertainty avoidance are positively associated with JVs and greenfields as opposed to acquisitions. 2) U.S. asset size increases the likelihood of JVs over acquisitions and acquisitions over greenfield. R&D intensity increases the probability of JVs as opposed to acquisitions. 3) Greenfields are preferable to acquisitions for manufacturing firms and non-U.S. asset size. 4) Country specific experience, multinationality, advertising intensity and diversification are not significant.
Gomes-Casseres (1989)	1532 U.S. manufacturing investments in Canada, United Kingdom, Germany, France. Brazil before 1975	WOS and JV	MNE's industry experience, Relatedness of investments, Familiarity with host country, Industry GNP of host, Intra-system sales, Resource based industry, marketing intensity, R&D intensity, Proprietary products, Proprietary processes.	Firm, industry and country level proxies (archival data)	1) MNEs' industry experience, familiarity with host country, intra-system sales, marketing intensity and proprietary product are positively associated with WOS. 2) Industry GNP, resource based industry are positively related with JVs. 3) R&D intensity and proprietary products encourage JVs when the MNEs invest outside its main line of business.
Gomes-Casseres (1990)	U.S. manufacturing investments worldwide before 1975	WOS and JV	R&D intensity, Advertising intensity, MNE's industry experience, Resource-based industry, Industry GNP of host, Familiarity with host country, Parent assets, subsidiary assets, industry competition, GDP growth of the host country, Restrictive host government.	Firm, industry and country level proxies (archival data)	1) MNEs prefer WOS when industry and host country experience are high, when intra-system sales are high and when the degree of marketing intensity is high. 2) Resource-based industry, industry GNP of host are positively associated with JVs. 3) Parent assets increases the preference WOS, subsidiary assets, industry competition, GDP growth of host country and restrictive host government encourage JVs. 4) Restrictive host government negatively interacts with resource-based industry and subsidiary assets to influence JVs, whereas restrictive host government strengthen the positive impacts of familiarity and GDP growth on JVs.
Klein (1990)	375 Canadian	Hierarchical	Channel volume, Asset specificity,	Transaction	1) Channel volume and asset specificity increase the

	export firms around globe	modes (WOS, sales personnel), intermediate modes (JV and commission agents), market mode (merchant distributor)	External uncertainty	level proxies (questionnaire data)	probability of firms to opt for hierarchical modes. 2) Diversity of environment surrounding a transaction is positive associated with market or intermediate modes as opposed to hierarchy-domestic mode. 3) Volatility of environment surrounding a transaction encourages market or intermediate modes as opposed to hierarchy-subsiary mode.
Erramilli (1991)	140 Swedish service MNEs' investments worldwide before 1991	High control and low control modes	Soft-service firms, International experience, Relational friction, Cultural distance	Firm and country level proxies (archival and questionnaire)	1) Soft service firms are more likely than hard service firms to opt for high control modes. 2) Cultural distance increases the probability of firms to choose high control as opposed to low control modes.3) International experience encourages low control as opposed to high control modes.
Hennart (1991)	158 Japanese manufacturing subsidiaries around the U.S. before 1985	WOS and JV	R&D intensity, International experience, Advertising intensity, Diversification, Industry sales growth; Industry concentration ratio, Resource intensive industry; Relative size of subsidiary/parent and age of affiliate	Firm and industry level proxies (questionnaire data)	1) Diversification, resource intensive industry, industry sales growth increase the preference of MNEs to opt for JVs as opposed to WOS. 2) International experience and age of subsidiary are positively associated with WOS as opposed to JVs.
Chu & Anderson (1992)	1267 U.S. manufacturing FDIs worldwide	WOS and JV	R&D intensity, Advertising intensity, Cultural distance, International experience, Country risk	Transaction and country level proxies/archival data	1) R&D intensity, advertising intensity and international experience are positively related with WOS. 2) country risk and cultural distance encourage JVs.
Agarwal & Ramaswami (1991)	285 FDIs by 97 U.S. equipment leasing firms in UK, Brazil and Japan before 1985	Non-investment, export, JV and WOS	Firm size, Multinational experience, Ability to develop differentiated products, Market potential, Investment risk, Contractual risk	Firm and country level proxies (questionnaire data)	1) Firm size, multinational experience and market potential increase the preference for WOS as opposed to JVs. 2) Firm size, multinational experience and contractual risk increase the choice of export, JV and WOS over non-investment modes. 3) Ability to develop differentiated products and market potential are positively associated with export over non-investment modes. 4) Market potential and investment risk encourage WOS as opposed to non-investment modes.5) Ability to develop differentiated products, market potential and contractual risk increase JVs and WOS over exports.
Kim & Hwang (1992)	96 U.S. FDIs in the Asia Pacific, South America, Europe, North	Licensing, JV and WOS	Global concentration, Global synergies, Global strategic motivation, Country risk, Location unfamiliarity, Demand uncertainty, Intensity of competition,	Firm and country level proxies (questionnaire)	1) Global concentration increases the preference for WOS over licensing and global synergies and global strategic motivation are positively associated with WOS and JVs as opposed to licensing. 2) Country risk and

	America, Africa and Middle East before 1988		Value of firm specific know-how, Tacit nature of know-how	data)	location unfamiliarity increase the probability of licensing. 3) Firms with tacit know-how are more likely to use WOS and JVs.
Erramilli & Rao (1993)	381 U.S. service subsidiaries worldwide during 1993	WOS and JV	Asset specificity, Capital intensity, Inseparability, Cultural distance, Country risk, Firm size	Firm and country level proxies (questionnaire data)	1) Low degree of asset specificity increases the preference of JVs over WOS. 2) This relationship is strengthened with inseparable services, increased country risk and smaller firms.
Agarwal (1994)	148 investments by U.S. firms worldwide during 1985-1989	WOS and JV	Independent variable: Cultural distance, Country risk and market potential. Moderators: Multinationality, Technological intensity, Size, Country risk, Market potential	Firm and country level proxies (archival data)	1) Cultural distance is positively associated with the choice of JVs, whereas country risk and market potential increases the probability to opt for WOS. 2) The strength of the positive relationship between cultural distance and JVs is reduced for MNEs with high degree of multinationality.
Erramilli (1996)	337 US, France, and UK advertising firms before 1991	Majority JV, equal JV, minority JV and non-equity modes	Home country power distance index, Home country uncertainty avoidance index, Home country market size, Parent firm size, Multinationality, Size of foreign subsidiary, Host market size, Cultural distance, Host government ownership restrictions	Industry and country level proxies (archival data)	1) Home country power distance and uncertainty avoidance increases the preference of majority ownership. 2) The use of majority ownership increases as home market size increases, but this relationship becomes weaker as parent firm size increases. 3) The use of majority JV increases as the size of host markets, parent firms and foreign subsidiaries increase, and decreases as the degree of multi-nationality and host government ownership restrictions increase.
Padmanabhan & Cho (1996)	839 Japanese manufacturing subsidiaries worldwide between 1969-1991	WOS and JVs	R&D intensity, International experience, Cultural distance, Host country experience, Parent firm size, Subsidiary size, Relatedness of investment, Government restriction.	Firm and country level proxies (archival data)	1) Parent's familiarity with host country, R&D intensity and cultural distance has positive influence on the Japanese firms 'choice of WOS. 2) Government restriction has a negative influence on WOS.
Erramilli et al. (1997)	177 FDIs by Korea firms worldwide during 1988 - 1990	Minority JVs, equal JVs, majority JVs and WOS	Technological intensity, Diversification, Capital intensity, Host country factors (developed vs. less developed economies)	Firm level proxy (archival data)	1) Technological intensity and more developed economies are positively associated with higher-equity modes, whereas diversification increases the probability to choose lower-equity modes. 2) The impact of technological intensity, diversification and capital intensity on ownership are contingent on host country factors (developed vs. less developed economies)
Contractor & Kundu (1998)	1131 hotels worldwide	WOS, JVs, management service contract and franchising	Country risk, Cultural distance, Level of economic development, Ratio of FDI by GDP, Parent firm size, International experience, Extent of foreign business,	Firm and country level proxies (archival and	1) International experience, extent of foreign business, lower income economies, management and quality control are positively associated with higher control modes. 2) Size, country risk and global reservation

			Economies of scale, Control quality, Importance for size, Global reservation system, Investment in training	questionnaire data)	system encourage lower control modes.
Hennart & Larimo (1998)	401 Japanese and Finnish manufacturing subsidiaries around the U.S. during 1978-1987	WOS and JV	Cultural attribute (power distance and uncertainty avoidance), Cultural distance between home and host country	Country level proxies (archival data)	Culture distance leads to the choice of JVs.
Taylor et al. (1998)	343 American and Japanese manufacturing investments worldwide before 1998	Licensing/franchising, JVs and WOS	Asset specificity, Cultural similarity, Uncertainty of demand of product, Overall market attractiveness, Frequency of transactions, Inability to get fair price, Parent firm size	Firm and country level proxies (questionnaire data)	1) U.S. firms tend to choose high control modes when the host market potential is high, when it is difficult to receive a fair price, when the frequency of transactions is high and when the size of the firm is large. 2) While TCE variables help to explain U.S. firms' choice of JVs versus WOS, they do not explain the choice of JVs by Japanese investors.
Delios and Beamish (1999)	1424 Japanese firms in East and South-East Asia before 1994	Equity share (5% - 100%)	Contributed assets (R&D intensity, advertising intensity), Complementary assets (Resource intensive industry, Relatedness, Relative size of subsidiary to its parent), Institutional environment (Country risk, Government restrictions, Intellectual property protection), International experience (export intensity, number of foreign investments, year of host country experience, Sogo Shosha as partner)	Firm, industry and country level proxies (archival data)	1) R&D/advertising intensity of industry entered, relative size, intellectual property protection, export intensity and year of host country experience are positively associated with Japanese ownership levels. 2) resource-intensive industry, government restrictions and partnership with Sogo Shosha decrease the Japanese ownership level.
Palenzuela & Bobillo (1999)	265 FDIs by 40 Spanish firms worldwide during 1991-1994	WOS and JVs	Asset specificity, Capital intensity, Firm size, Country risk, Cultural distance	Firm and country level proxies (archival and questionnaire)	1) Asset specificity, capital intensity and country risk are positively associated with JVs over WOS. 2) Asset specificity plays a moderating role in influencing ownership mode choice.
Makino & Neupert (2000)	113 U.S. investments in Japan before 1997	WOS and JVs	Cultural attributes (power distance and uncertainty avoidance), R&D intensity, Diversification, Industry sales growth; Resource intensive industry; Relative size of subsidiary/parent and age of affiliate.	Firm, industry and country level proxies (archival data)	1) PDI, UAI, R&D intensity and local industry growth increase the propensity to choose WOS as opposed to JVs. 2) Diversification, resource intensive industry and relative subsidiary size increase the probability to opt for JVs.
Rajan & Pangarkar (2000)	83 FDIs by Singapore firms in Malaysia, China,	Equity share (zero to 100%)	Global synergy, Strategic motivation, International experience, Host country experience, Relative subsidiary size,	Firm and country level proxies	1) Higher equity mode is preferable when firms pursue global synergies, exercise strategic motivation, contribute firm specific assets and possess higher country level

	Hong Kong, Vietnam, Taiwan, Indonesia, U.S., etc		Firm specific assets, Reputation, Cultural distance, Host country risk	(archival and questionnaire data)	experience. 2) Lower equity mode is preferred when the country risk in the host environment is high.
Brouthers & Brouthers (2001)	231 FDIs by Dutch, German, British and U.S. firms in CEE during 1990-1997	WOS and JVs	Cultural distance, Investment risk, Cultural attribute (power distance, individualism, masculinity and uncertainty avoidance)	Country level proxy (archival and questionnaire data)	1) Total cultural distance and cultural attributes are positively associated with JVs as opposed to WOS. 2) Investment risk in the host country reverse the positive relationship of total cultural distance, individualism, masculinity and uncertainty avoidance and the choice of JVs.
Chang & Rosenzweig (2001)	816 European and Japanese firms operating in the U.S. during 1975 – 1992.	JVs, greenfields and acquisitions	R&D intensity, Diversified entry, Cultural distance, International experience, First firm mode acquisition, First firm mode JVs, First LOB mode acquisition, First LOB mode JVs	Line of business (LOB), firm and country level proxies (archival data)	1) R&D intensity increases the greenfields as opposed to acquisitions for first entries, whereas diversified entry prefers acquisitions over greenfields. Cultural distance and international experience is positively associated with greenfields as opposed to acquisitions or JVs. 2) R&D intensity, cultural distance and international experience are important determinants for initial mode choice, however, their importance diminish for sequential entries. Diversified entry is more important for sequential entries. 3) A first entry by acquisition is associated with subsequent acquisitions. A first entry by JVs is associated with subsequent JVs.
Meyer (2001)	576 FDIs by Germany and UK firms in Czech Republic, Hungary, Poland, Russia and Romania before winter 1994/1995	Trade, contracts, JVs and WOS	Progress of institutional reform, Psychic distance, R&D intensity, Human intensity, Technology transfer, Management transfer, Consumer goods	Transaction, firm and country level proxies (archival and questionnaire data)	1) Host country's progress in institutional reform increases the preference of trade, contracts and JVs to WOS. 2) Psychic distance encourages WOS as opposed to trade, contracts and JVs. 3) MNEs use different forms of entry for technological and management knowledge transfer.
Brouthers (2002)	178 manufacturing and service investments by EU firms in developing and transitional economies before 1995	WOS and JV	TCE variables: General transaction costs, Asset specificity Institutional variable: Legal restrictions Cultural variables: Country risk, Market potential	Transaction and country level proxies (questionnaire data)	1) General transaction costs are positively associated with WOS. 2) Investment risk and legal restrictions are significantly related with JVs. 3) Asset specificity and market potential are not significant.
Chen &	269 Japanese	WOS and JV	Industry reputation barrier, Industry	Firm level	1) Industry brand equity, parent's advertising intensity in

Hennart (2002)	investments worldwide before 1989		distribution barrier, Cultural specific advertising expertise, Industry technological barrier, Access to natural resources, Parents' advertising resources created in the U.S., Parents' advertising resources created in Japan, Parents' R&D capabilities, Parents' industry knowledge, Parents' acquired capabilities	proxies (archival data)	the U.S., are positively associated with the choice of WOS. 2) Industry energy intensity and parent's advertising intensity in Japan encourages JVs.
Chen & Hu (2002)	470 investments in China during 1979 -2002	Contractual JV, equity JV and WOS	Proprietary assets, Advertising intensity, Cultural distance, Market potential by industry, Market potential by provinces, Capital intensity, Planned duration of the project in China	Firm and country level proxies (archival data)	1) Advertising intensity and planned duration of the project are positively associated with WOS as opposed to contractual JVs and equity JVs. 2) Market potential by industry, market potential by provinces and lower degree of capital intensity increases the preference of WOS as opposed to equity JVs. 3) Proprietary assets and cultural distance are positively associated with WOS as opposed to contractual JVs.
Lu (2002)	1194 Japanese FDIs in Austria, Belgium, Canada, France, Germany, Ireland, Spain, United Kingdom, U.S. before 1999	WOS and JV	TCE variables: R&D intensity, Advertising intensity, Resource intensive industry, Diversification, Relative subsidiary size Institutional variables: Own firm's entry mode by country/industry, Other firm's entry mode by country/industry, Successful firm's entry mode by country/industry, Successful subsidiaries' entry mode by country/industry. Moderator: Firm experience	Firm level proxies (archival data)	1) Advertising intensity is positively associated with WOS, whereas resource intensive industry, diversification and relative subsidiary size increase the probability of JVs. R&D intensity, however, exerts insignificant influence on entry mode choice. 2) Later entries tend to follow the entry mode patterns established by earlier entries. 3) Firm experience moderate the impacts of institutional influences on entry mode choice.
Brouthers & Brouthers (2003)	227 manufacturing and service FDIs by Dutch, German and UK firms in CEE	WOS and JV	Independent variables: Asset specificity (human specific assets; proprietary products and services; dedicated assets); Internal uncertainty (the cost of writing and enforcing contract; difficulty of monitoring and controlling product / service quality; dissemination and misuse of proprietary knowledge); External uncertainty (general stability of political, social and economic conditions in the host country; the risk of converting and repatriating income	Transaction level proxies (questionnaire data)	1) Asset specificity is positively related to WOS as opposed to JVs for service firms. 2) Internal uncertainty leads to the choice JVs as opposed to WOS for service firms, whereas WOS is preferable for manufacturing firms when external uncertainty is high.

			from host country; risk of target government actions) Moderator: Service vs. manufacturing firms.		
Brouthers et al. (2003)	218 manufacturing and service FDI by Dutch, German and UK firms in CEE	WOS and JV	Asset specificity (human specific asset; proprietary products and services; general transaction costs), Internal uncertainty (the cost of writing and enforcing contract; difficulty in monitoring performance; difficulty in monitoring /safeguarding proprietary knowledge) and external uncertainty (general stability of political, social and economic conditions in the host country; the risk of converting and repatriating income from host country; risk of target government actions)	Transaction level proxies (questionnaire data)	1) Asset specificity is positively related the choice of WOS as opposed to JVs. 2) External (economic) uncertainty increase the choice of JVs over WOS.
Cho & Padmanabhan (2005)	604 Japanese investments worldwide during 1969-1991	WOS and JV	Cultural distance, International experience, Host country experience, Decision specific experience	Firm and country level proxies (archival data)	1) Standalone cultural distance exerts insignificant impact on ownership mode choice. 2) The level of experience, particularly decision specific experience, moderates the impact of cultural distance on ownership mode choice.
Meyer & Nguyen (2005)	171 investments by European, U.S., ASEAN, Japan, Korea, HongKong and Taiwan firms in Vietnam during 1991-2000	WOS and JV	Efficiency in supporting markets for critical resources, Dominance of State-owned Enterprises, Local oriented FDI	Firm and country level proxies (archival and questionnaire data)	Dominance of state-owned enterprises and local oriented FDI increase the preference of JVs as opposed to WOS
Wei et al. (2005)	10607 investments by overseas Chinese and other investors in China before 1999.	Contractual JV, equity JV, joint stock company and WOS	Host country's experience in attracting FDI in China, Specific location, Resource commitment, Cultural distance, Asset intensity	Firm and country level proxies (archival data)	1) WOS is preferable to CJVs, EJVs and JSCs when the financial resource commitment is larger, the host country's experience in attracting FDI is higher, the investments are located in good industrial location and the asset intensity in the host industry is higher. 2) Lower host country's experience in attracting FDI and investments located in inland area increase the probability of EJVs and JSCs as opposed to WOS and CJVs 3) A good specific location encourages CJVs.

Dikova & Witteloostuijn (2007)	160 EU FDI in Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia before 2002.	1) WOS and JV 2) Greenfield and acquisition	Institutional advancement in the host country, Technological intensity, International strategy (multi-domestic strategy)	Firm and country level proxies (archival and questionnaire data)	1) Institutional advancement in the host country increases preference of acquisition establishment mode and JVs ownership mode strategy. 2) Greater institutional advancement is positively associated with technological intensive MNEs to opt for greenfields as opposed to acquisitions. 3) Greater institutional advancement is positively associated with multidomestic MNEs to choose acquisitions as opposed to greenfields.
Filatovchev et al. (2007)	285 Taiwanese firms operating in China before 1999	Equity share (zero-100%)	Corporate governance variables (independent variables): Percentage of family shareholding, Percentage of insider shareholding, Percentage of shareholdings held by domestic financial institutions, Percentage of shareholdings held by foreign financial institutions. Firm specific variables: Parent firm size, R&D intensity, Advertising expenditure, Affiliates in electronic industry, Affiliates in textile industry, Location specific experience.	Firm level proxy (archival data)	1) Corporate governance variable: percentage of family shareholding and percentage of shareholdings held by domestic financial institutions decrease the probability of Taiwan firms to choose higher equity mode, whereas the opposite relationship was found with percentage of shareholdings held by foreign financial institutions. 2) Firm level variables: larger parent firm and affiliates in electronic industry tend to choose higher equity mode.
Quer et al. (2007)	471 Spanish investments around Europe, Latin America, etc during 1999-2004	Contracts, JV and WOS	Country risk, Cultural distance	Country level proxies (archival data)	Lower commitment entry mode is preferable when the country risk and cultural distance is high.
Meyer et al. (2009)	336 FDI operating in Egypt, India, South Africa and Vietnam before 2000.	JV, Greenfield and acquisition	Institutional variable: Strength of market-supporting institutions Resource-based variable: Resource needs	Country level proxies (archival data)	1) In weaker institutions, JVs is preferable to acquisitions or greenfields to access resources. 2) In stronger institutions, acquisition is preferable to access intangible and organizational embedded resources.
Li & Meyer (2009)	1506 Taiwan electronics firms operating worldwide before 2003.	Minority JV, equal JV, majority JV and WOS	Independent variables: International business experience, Target country experience Moderator: Emerging vs. developed economies	Firm level proxy (archival data)	1) General international business experience encourages WOS in developed economies in Asia and Europe, 2). Country specific experience increases the probability to choose JVs in China
Cui & Jiang (2009)	138 Chinese investments before 2005.	WOS and JVs	Strategic behavior variables: Host industry competition, Host industry growth, Asset seeking motivation,	Firm and country level proxies (1) Chinese MNEs prefer WOS when they adopt global strategy, face severe host industry competition, emphasize asset seeking.

			global strategic motivation. Control variables: Firm size, Country risk, Cultural barrier, establishment method, State-owned enterprise, Industrial and sector features.	archival data)	2) JV is preferred by Chinese firms investing in a high growth host market.
Demirbag et al (2009)	522 subsidiaries of Turkish MNEs around globe during 1990–2006.	Minority JV, equal JV, majority JV and WOS	TCE and institutional variable: Political constraints, Cultural distance, Linguistic distance, Subsidiary density, Knowledge infrastructure. Firm specific variables: Parent firm diversity, Subsidiary size, Entry timing.	Country level proxies (archival data)	1) Political constraints increase the preference of WOS over JVs or majority JVs over equal JVs or equal JVs over minority JVs. 2) Linguistic distance is negatively associated with WOS. 3) WOS is preferable over JVs when the knowledge infrastructure is high. 4) Parent firm diversity increases the preference of JVs over WOS or minority JVs over equal and majority JVs. 5) Subsidiary size encourages WOS over JVs or majority JVs over equal or minority JVs.
Chiao et al. (2010)	819 Taiwan manufacturing firms operating in China before 2003.	WOS and JV	TCE variables: Firm specific assets, Complementary assets. Resource-based variables: R&D capability, International experience, Customer following. Institutional variable: Perceived institutional differences	Firm level proxies (archival and questionnaire data)	1) Firm specific assets, R&D capability, international experience and customer following encourages WOS over JVs. 2) Complementary assets increases the preference of JVs over WOS. 2) When perceived institutional differences are high, complementary assets and international experience increase the preference of WOS.
Chang et al. (2012)	2451 Taiwanese FDIs around 13 countries during 1999 - 2008	WOS and JV	Independent variable: Cultural distance Moderator: Government quality	Country level proxy (archival data)	1) Taiwanese prefer WOS over JVs when entering culturally distant countries. 2) JVs are preferable when Taiwanese firms enter culturally distance countries with high government quality.
Kuo et al. (2012)	1550 Taiwan computer and electronic FDIs operating in China during 1996 – 2006.	WOS and JV	TCE variable: International experience Moderator: Family vs. non-family firm	Firm level proxy (archival data)	1) Internationally inexperienced firm prefer JVs, whereas internationally experienced firms tend to choose WOS. 2) Family owned inexperienced firm are more likely than non-family inexperienced firms to choose JVs 3) Family owned experienced firms are more likely than non-family owned firms to choose WOS.
Lopez-Duarte & Vidal-Suarez (2013)	302 Spanish firms worldwide during 1989-2003	WOS and JVs	Cultural distance (Hofstede, Schwartz, GLOBE), Informal environment, Formal environment	Country level proxy (archival data)	1) Cultural distance (Hofstede) is positively associated with the choice of WOS, whereas Schwartz and GLOBE's cultural dimensions are not significant determinants. 2) The relationship between cultural distance (Hofstede, Schwartz and GLOBE) and ownership mode choice is contingent on political risk.

Table 3: Exposure of modes of entry to different types of risk

Entry modes	Investment risk	Co-owner risk	Integration risk
Wholly-owned Greenfield	Very high (long pay-back periods, illiquid project)	Not applicable	Not applicable
Full acquisitions	High (high up-front capital commitment)	Low (previous owners might represent some risk)	High (integration of an existing organization)
Newly established joint ventures	Moderate (part of the capital contributed by a partner)	High (implementation of strategic decisions needs consensus of both partners)	Low (teams might be transferred from the partner)
Partial acquisitions	Moderate (part of the capital from remaining earlier owners)	Very high (partners needs to agree integration strategy)	High (teams might be transferred from the partner)

Notes: investment risk refers to the maximum loss incurred if the project fails. Co-owner risk refers to adverse events occurring due to conflict or coordination failure between the owners; Integration risk refers to operational risk related to integrating an acquired operation. Source: Adapted and extended from Peng and Meyer (2011).

Table 4: Challenge to apply and test TCE in JV research

	Challenge to TCE theory in JVs research	Future research directions
The testing of transaction level theory TCE with firm level data	<ul style="list-style-type: none"> • Implicit assumption that the characteristics of the firm are a good proxy of TCs it faces for a specific transaction. • Implicit assumption that the local partners' contributions play no role in foreign entry mode decision. 	<ul style="list-style-type: none"> • TCs need to be measured as close to the actual transactions as feasible. • Consider the transactions from the perspective of all partners involved in the transaction.
Contextual drivers of TCs in emerging economies	<ul style="list-style-type: none"> • Implicit assumption that TCs do not vary in the sample due to variations in the external environment. 	<ul style="list-style-type: none"> • Consider how the external environment moderates TC, either study it, control for it, or explicitly assume it only creates random noise
Theoretical Ambiguity of Effects of Experience and Distance	<ul style="list-style-type: none"> • Experience and cultural distance affect both the external and internal TCs, and therefore TCE cannot offer a clear theoretical prediction on their effect. 	<ul style="list-style-type: none"> • Explore the conditions under which the effect on internal or external TCs is stronger.
JVs do not enhance flexibility	<ul style="list-style-type: none"> • Implicit assumption that JV is a flexible organizational form, and hence, is suitable for high risk countries. 	<ul style="list-style-type: none"> • Explore the conditions under which JVs are more likely to be flexible than WOS.