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INVESTING UNDER INSTITUTIONAL UNCERTAINTY: THE CHOICE AND CONSEQUENCE OF GOVERNANCE STRUCTURES

Abstract:

Economic liberalization in emerging emerging economies has presented many investment opportunities to private investors. Despite greater extent of capital inflow, investments in emerging economies still retain many features conflicting with management of a market system. Drawing from transaction cost economics and institution-based view; we investigate private investors' choice of various governance structures under institutional uncertainty. We find evidence that different investments vary systematically in their governance structure to respond in a coordinative manner to uncertainty in the institutional environments and to asset specific investments. Our findings suggest that success of private investments is affected by the choice of governance structures.

Keywords:

Transaction cost economics, governance structures

Introduction

Many emerging economies have introduced market-based reforms, presenting many investment opportunities to private investors. One of the reforms is to invite private investors to invest in state owned enterprises (SOEs), which is encouraged by the World Bank (Cook & Kirkpatrick, 1995). The main change introduced by private investments in SOEs is in governance arrangements (Ramamurti, 2000). Ownership and control are among the most fundamental reflections of influential governance forms. Owners generally have the authority to decide on the firm's strategic goals, develop its competitive strategy, and allocate its resources through internal transactions. Recognizing private investors' ownership and control in former SOEs in emerging economies, this research examines choices of different governance structures of private investments and the consequence of the choices.

Private control of former SOEs may internalize transactions between the state and private entities. In internal governance, a private entity takes over the management part of an SOE while ownership remains with the state and investment decisions are made within the SOE hierarchy. The state and private entities resolve transaction disputes internally within the SOE. Thus, such governance can be characterized as a mode of internal governance (Williamson, 1991).

A private entity and the state may also form a joint venture and operate a greenfield facility, in which they both have ownership claims. Both parties maintain autonomy but are bilaterally dependent in this hybrid governance structure. Investing jointly, the state and the private entity learn a great deal about which investment terms and conditions may be most effective, efficient, and viable in economic, political, and social terms (Doh, Teegen, & Mudambi, 2004), which helps them to adapt to each other's management style in a coordinated manner. Coordination in hybrid is made neither unilaterally (as with market governance) nor by fiat (as with internal governance). Instead, it requires mutual consent (Williamson, 1991). This governance form foresees unanticipated disturbances, provides a "tolerance zone" within which misalignments may be absorbed, requires information disclosure when adaptation occurs, and provides for arbitration (prior to resorting to the courts) in the event of disagreement (David & Han, 2004).

When SOEs' property is acquired by a private entity, the state relinquishes both ownership and control rights, and the private entity obtains both rights of the project. This governance structure avoids political interference in management's decision making with clearly defined property rights (Boycko, Shleifer, & Vishny, 1993). Nevertheless, given the politically sensitive nature of private ownership of infrastructure (Vernon, 1971), private firms cannot totally avoid market transactions with the state. Newly privatized firms in emerging economies often find it necessary to seek financial, technological, and managerial resources and capabilities from more richly endowed firms (Hitt, Dacin,

Levitas, Arregle, & Borza, 2000), which may be SOEs or firms partially owned by the state. In addition, the private entity often acquires only a part of the SOE's assets, resulting in transactions between the private entity and the rest of the SOE after privatization

Drawing from transaction cost economics (TCE) (Williamson, 1985) and institution-based view (North, 1990), we suggest that particular governance structures of private participation projects determine transactions between the government and private entities. Managerial contracts can be conceptualized as internal governance (i.e., the private entities in charge of the management of the "privatized" SOEs under managerial contract are viewed as internal units of the government). Public-private JVs can be viewed as hybrid structure. Straightforward acquisitions result in external governance structure. Two questions thus arise: (1) Under what circumstances do private entities choose certain governance structures but not others? (2) What are the consequences of such choices?

The purpose of this article, therefore, is to address these two important but previously little explored questions. We accomplish this by (1) extending TCE that has a historical emphasis on transactions between private entities to cover transactions between public and private sectors, and (2) further integrating institution-based view with TCE and explore how private investors evaluate the form of governance structures based on the institutional environments.

Literature Review

Transaction cost economics

Ronald Coase formulated his ideas on transaction costs and their effects on coordination in markets and firms (Coase, 1937). As with Coase, Chester Barnard's (1938) analysis of adaptation within internal organizations stimulated later research on organizational adaptation to changed circumstances. While Coase's disciples focused on the boundaries of the firm by assessing factors that impacted the make-or-buy decision, those who followed Barnard focused primarily on intra-organizational coordination. Research in the tradition of Barnard focuses on the design attributes of complex organizations comprising multiple, interdependent subunits that enable them to achieve coordinated adjustments to changes in their environment (Daft, 2001; Galbraith, 1977; Gulati, Lawrence, & Puranam, 2005).

Both Barnard (1938) and Hayek (1945) hold that the central problem of economic organization is coordination (Mahoney, 2005). Whereas Hayek locates coordination in the market, it was the coordination of internal organization on which Barnard focused attention (Williamson, 1991). We extend this tradition of research initiated by Barnard and Hayek to the private participation context and explore governance structures of private investments. We combine Hayek and Barnard's coordination concepts and examine the ability to generate coordinated responses across units, whether it is within or across firm

boundaries. We note that transaction concerns both the state and the private entity to coordinate in the uncertain environment when applied to private participation projects in emerging economies (Mahoney, 2005).

TCE and Institution-Based View

TCE focuses on “transactions and the costs that attend completing transactions by one institutional mode rather than another” (Williamson, 1975:1). The two main dimensions of transactions, according to TCE, are asset specificity and uncertainty. Williamson (1975) defines uncertainty in terms of the inability of decision makers to specify a complete decision tree. Transaction uncertainty exists to the degree that transactions are unstandardized or unpredictable. The greater the level of such uncertainty, the greater the amount of information that an organization has to process and thus the higher the cost.

As discussed by Williamson (1985) and North (1990), institutions are developed by societies to create order and reduce uncertainty in promoting economic exchange and coordination. Institutions are the “humanly devised constraints that structure human interaction” (North 1990, p. 3). Some recent work integrates TCE and institutional perspective (Martinez & Dacin, 1999) and introduces governance inseparability and unanticipated changes as constraints on firm choices (Argyres & Liebeskind, 1999). Some theorists argue that institutional perspective is the most applicable paradigm for explaining firm behavior in emerging economies (Shenkar & Von Glinow, 1994). Research has integrated TCE and institution-based view (Martinez & Dacin, 1999) and focused on the diversity of governance structures across institutional environments. In emerging economies, the level of uncertainty can be magnified because stable institutions have not yet fully developed, while the old order is being eroded at the same time (Peng, 2003). As a new phenomenon in emerging economies, private investments in infrastructure face unstable institutional environments. Factors such as the randomness of the market and institutional environments, or the unpredictable discretion of the government increases the uncertainty in transactions between the private entity and the government (Choi, Lee, & Kim, 1999). Institutional underdevelopment is a hallmark of emerging economies (Meyer & Peng, 2005; Wright, Filatotchev, Hoskisson, & Peng, 2005), and the level of institutional development varies considerably among emerging economies (De Castro & Uhlenbruck, 1997). Uncertainty in institutions has important implications for the design and implementation of privatization programs (Ramamurti, 2000).

Asset specificity

The effect of uncertainty on the choice of governance form is conditional: in the presence of asset specificity, increases in uncertainty will increase the costs of the transaction between parties (Williamson, 1985). Asset specificity refers to the degree to which the assets used in support of the transaction can be redeployed to alternative uses without sacrifice of productive value (Williamson, 1991). Williamson (1985) identifies three types of asset specificity: (1) site specificity, (2) physical asset specificity, and (3) human asset specificity. Site specificity refers to the situation whereby successive production stages that are immobile in nature are located close to one another. Physical asset specificity refers to transaction-specific capital investments that tailor processes to particular exchange partners. Human asset specificity refers to transaction-specific know-how accumulated by transaction parties through longstanding relationships.

In this study, two parties—the private entity and the government—are locked into transactions because both the physical assets and the human assets invested in the site chosen for the investment projects are specified to a non-trivial degree. If the project fails, assets invested by the private entity and the site will not be redeployed to alternative uses without sacrifice of productive value because the state may simply change to other partners (Henisz & Zelner, 2001). When private entities have a high level of investments in the project, they develop the site and invest in physical assets such as machineries that are specialized to the project they embarked on. Human assets specialization is also high since dedicated engineers and managers get involved in the project and develop experience working with the SOE to accumulate specialized information and know-how. By investing specified physical and human assets in the infrastructure projects private entities develop specialized knowledge of managing such investments.

Governance structures

In TCE research, scholars have studied two different modes of organizing entities: firms can either “make” (internal transaction) or “buy” (market transaction) component necessary to complete their product mandates (Coase, 1937; Williamson, 1975). In recent years, researchers have expanded this dichotomous choice to focus on other hybrid forms of organization—alliances—that are an intermediate form between make and buy (Dyer & Singh, 1998; Williamson, 1991). Our study identifies all three governance structures: (1) Managerial contract, entailing an internal governance structure; (2) public-private JVs, considered as a hybrid; and (3) acquisition, viewed as a market governance structure. These three structures are summarized in Figure 1 and discussed next.

Insert Figure 1 about here

Countries vary in the relative influence of authoritative planning vs. market governance of transactions in domestic resource allocation (Murtha & Lenway, 1994), which translates into differences in uncertainty in post-privatization environments. Without uncertainty, even highly specialized assets may be protected contractually (Mahoney, 1992). However, in emerging economies with a more erratic formal institutional environment (Wright et al., 2005), more restricted product markets (Khanna & Palepu, 1997), and weaker formal regulatory regimes (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998), the level of uncertainty is high and transactions between the private entities and the government will be costly (Brouthers, Brouthers, and Werner, 2008; Tong, Reuer, and Peng, 2008). There are “rational economic reasons” (Williamson, 1985, p. 52) for private entities to choose the means of governing transactions that minimize transaction costs.

In the post-privatization era in emerging economies, the institutional environment tends to be relatively unstable and uncertain (Peng, 2003). Privatization depends much on formal institutional frameworks centered on laws and regulations, which are influenced by other reforms, such as the ownership, tax, and administrative reforms (Johnson, McMillan, & Woodruff, 2002; Peng, 2000). The less developed the institutions, the greater uncertainty in transactions between the private entity and the government, and the greater information processing requirements and adaptation pressure on privatization projects. Specifically, transactions between the government and the private entity may face unanticipated changes of formal institutions. If the government can easily change the regulatory environment in the future, private entities thus may have to choose a governance structure that can minimize such risk.

The market governance structure—namely, acquisition in this context— has been recognized as a quick and simple way to create private owners in emerging economies, but has no established mechanisms to provide credible information to private entities (Spicer, McDermott, & Kogut, 2000). Market governance is least capable of facilitating coordination in transactions between the private entity and the government in an uncertain institutional environment, and may only work well in a more developed economy. In emerging economies, high uncertainty in the institutional environment renders market governance subject to costly haggling and maladaptiveness, and increases the relative attractiveness of hierarchies and hybrids (Williamson, 1985). When the private entity chooses internal or hybrid governance structure, information exchange and feedback with the state are facilitated by the organization, which may reduce uncertainty in the product market. The SOE also learns to take actions through which a private sector template can be institutionalized within its managerial ranks (Johnson, Smith, & Coding, 2000), thus gradually adapting to market-based efficiency. Hence we suggest:

Hypothesis 1a: *Private investments in institutions with higher uncertainty are more likely to choose internal governance or hybrid over market governance.*

Hypothesis 1b: *Institutional uncertainty has more adverse effects on the performance of private investments with market governance than with internal governance or hybrid.*

Asset specificity often provides a potential opportunity for opportunism. The essential element of the decision as to whether internal or external governance will be more efficient is the extent to which the parties invest in durable, nonmarketable assets to facilitate a transaction (Williamson & Ouchi, 1981). Before privatization, the state has to satisfy multiple political claims in managing SOEs, which may result in significant deviation from market-based efficiency (Zahra et al., 2000). At the onset of privatization, this template may still be deeply embedded. Moreover, deals in emerging economies are likely to include post-privatization conditions such as some form of government presence after privatization (De Castro & Uhlenbruck, 1997). Transaction-specific investment made by private entities provides opportunities for the government to behave opportunistically and limits the ability of the market to govern exchange (Williamson & Ouchi, 1981). A private entity that invests specific physical and human assets in the project is at high risk of any opportunistic hold-ups from the government. By having private entities and the SOE work within an organization (under internal transaction or JV), such costly haggling can be minimized, since conflicts can be settled internally rather than through court battles (Conner & Prahalad, 1996).

While the economics literature focuses on efforts of incentive alignment, and the problem of avoiding or mitigating opportunism is a central theme in the design of group incentives (Holmstrom & Milgrom, 1994), the knowledge-based view has a different perspective on firm governance structure. According to the knowledge-based view of the firm, whether a firm performs activities in-house or through market contracts depends on whether doing so makes the generation and exploitation of knowledge more efficient (Conner & Prahalad, 1996; Grant, 1996; Kogut & Zander, 1996). The risk of opportunism increases along with knowledge intensity and cannot be analyzed separately (Coff, 2003 2003). We argue that besides guarding against opportunism of the state, developing knowledge of working with the SOEs is also an important factor in governance choice for private entities.

Masten, Meehan, and Snyder (1991) provide the link between TCE and the knowledge-based view and argue that firms should integrate to take advantage of a decrease in internal organization costs. That is, a firm should organize activities within itself not so much because of the fear of hold-ups in dealing with partners but because of the ease with which the activities can be performed within the firm. Such a focus on internal organization is most effective when the asset specificity in question is human rather than physical or site. They further argue that two parties should integrate because it may be cheaper to perform their joint activity within a firm even if there were no possibility of

haggling when each works autonomously. Conner and Prahalad (1996) also agree that even in the absence of opportunism, transaction costs still exist in knowledge-based transactions. Because knowledge is often tacit and often embedded in organizational routines and specific human assets, it is difficult to duplicate and is acquired largely through personal experience, such as learning by doing or by observing. Knowledge is often “sticky”—difficult and costly to transfer, often requiring frequent interaction to “unstuck” (Von Hippel, 1994). Thus, if the private entities invest specific human assets to develop knowledge required in the projects, they may have to interact with the state often so as to exploit the asset interdependencies to create a sustainable advantage (Conner & Prahalad, 1996). Because of the shared language and routines that develop within firms, tighter coordination between existing know-how and incoming knowledge can be achieved through internal governance. In a nutshell, both TCE and the knowledge-based views suggest that when asset specificity is high, transactions between the private entity and the government may be better off being organized within a firm rather than through the market. By communicating internally within the SOE, private entities may learn to mitigate opportunistic behavior of the state, enhance knowledge generation and cooperate with the state in order to facilitate transactions with the state more efficiently.

Hence we suggest:

Hypothesis 2a: *Private investments with higher asset specificity are more likely to choose internal governance or hybrid over market governance.*

Hypothesis 2b: *Private entity's asset specificity has more adverse effects on the performance of private investments with market governance than with internal governance or hybrid.*

Methodology

Data

The infrastructure industries constitute a majority of privatizations in emerging economies (World Bank, 1999). We acquired a data set of projects in infrastructure industries in emerging economies drawn from the World Bank's Database. Country development data are collected from the United Nations Statistics Division. Data on institutional uncertainty is from the Heritage Foundation's Economic Freedom report, which grades 161 countries on aspects of institution conditions. The projects reached closure during the period 1984-2003. Closure occurs when private entities agreed to a legally binding agreement to invest funds or provide services. A total of 174 out of 2,782 projects have missing data and thus are excluded. After further excluding 58 data points with missing data on institutional development, we have 2,550 projects from 94 emerging economies in the data set.

Private participation is classified into three categories in the original database: managerial contracts, JV projects, and acquisitions. Projects under managerial contract are coded as having an internal governance mode. A total of 652 out of 2550 projects are of this type. There are 1350 public-private JV projects in our data and they are considered as hybrid mode of private participation since both the government and the private entity has ownership claim on the projects. In the rest 548 acquisition projects, a private entity buys an equity stake in a SOE, and they are recognized as market governance projects.

Variables

Survival

Projects status is identified as (1) under construction, (2) operational, (3) concluded, (4) canceled, and (5) distressed (see Appendix 1 for more explanation) in the original data set. We code projects under construction, operational, and concluded as “survived projects.” In distressed projects, the government or the operator has either requested contract termination or are in international arbitration. Distressed projects and canceled projects are considered as “failed projects”. There are altogether 138 out of the 2550 projects that have failed, and 2412 projects that have survived until the data was collected. The dependent variable: survival of the private participation projects is coded 1 if the project is identified as survived and 0 if the project is cancelled or distressed.

Uncertainty

We measure institution uncertainty following Doh *et al.*'s (2004) measurement of countries' institutional development. We average three variables in Economic Freedom report: the extent of state intervention in the economy, the extent of capital flows and foreign investment, and the extent of regulation. These variables represent how stable government regulations are and how developed regulatory and formal institutions are. Each variable is reported on a five-point scale. A higher score indicates a high level of institution uncertainty in that country. Data for year 2003 is used since investment projects in our data ends in 2003.

Asset specificity

In internal governance projects, asset specificity is measured as the percentage of the former SOE's equity controlled by the private entity. In hybrid projects, asset specificity is measured as the percentage of the former SOE's equity owned and controlled by the private entity. In market governance projects when the SOE is acquired into private hands, asset specificity is the percentage of the SOE equity owned and controlled by the private entity.

Since these three forms of governance structures have not been studied in previous research, we attempt to measure the asset specificity so that it is comparable across the three modes. When private entities have a certain level of participation in the projects, whether it is in the form of equity control in internal governance projects or both equity ownership and control in hybrid and market governance projects, they invest in physical and human assets and the site, which are specialized to the project they embarked on. Thus, the higher the level of participation, the higher private entities invest in asset specificity in the projects. We use the level of private entities' participation as a proxy for asset specificity.

Governance Structures

Market governance structure is coded 1 when private entities acquire some ownership and control rights from the government. A total of 548 out of 2550 projects are of this type.

Internal governance structure is coded 1 when the government retains the ownership rights in a project, while releasing management control of SOEs to private entities. There are 652 projects with internal governance structure.

Hybrid is coded 1 when the government and private entities jointly invest, own, and manage the mixed enterprises. There are 1350 hybrid projects.

Control variables

Market-supporting institutions may become stronger over time because of cumulative reforms undertaken with individual privatization transactions (Ramamurti, 2000). Given the institutional development over time, recent privatization projects may be less likely to fail. There is a possibility that newly privatized projects, although still under construction now, might have problems in the future given enough time of observation. Since we can only observe projects status till 2003, there might be a failure bias towards earlier privatized projects. It is also possible that new technologies arise over time that lower the transaction costs present in markets (David & Han, 2004). We control for the year lapsed from when the projects were set up till 2003 to reduce this problem.

Other control variables include payment to the government, and countries' economic development measured as per capita GDP in logarithm. A dummy variable is included to control for projects with banks loan or syndication. Four primary sectors of infrastructure—namely, transport, energy, telecommunication, and water and sewerage sectors—are controlled. We also control six geographic areas: (1) East Asia and Pacific, (2) Europe and Central Asia, (3) Latin America and the Caribbean, (4) Middle East and North Africa, (5) South Asia, and (6) Sub-Saharan Africa.

Analysis techniques

In strategic management research, we often wish to draw conclusions about the superiority of the strategy compared to alternatives so that we can aid managers with their business decisions (Shaver, 1998). However, a difficulty in making such assessments is that firms purposely choose their strategies based on their capabilities and environmental conditions (Shaver, 1998). A firm's governance choice is inseparable from its environment and its firm characteristics. Since private entities self-select the strategies we observe, these strategic organization decisions are not random, and are endogenous to the expected performance outcomes. Likewise, private entities self-select private participation modes that result in a higher possibility of survival. Therefore, if we observe some firms choosing one private participation mode and other firms choosing different modes, it would not appear that one strategy unconditionally leads to superior performance. Empirical estimates of strategy performance that do not correct for this problem may be misleading (Masten, 1993).

Econometric techniques to correct for endogeneity arising from discrete strategy choices have been available since the 1970s (Heckman, 1979). Many of these econometric estimators were developed in the context of labor economics. Nonetheless, the econometric problems in that field are structurally similar to problems of strategic management (Hamilton & Nickerson, 2003).

To test our hypotheses, we use a switching regression model¹ (Hamilton & Nickerson, 2003; Shaver, 1998). We estimate this model in two steps. First, we estimate a multinomial logit model to predict the choice of private participation mode (internal, hybrid or market governance) and construct the inverse Mills ratio terms. It is difficult in many strategy data sets to find instrumental variables that affect strategy choice but not performance (Hamilton & Nickerson, 2003). We use a country's economic development as an instrument since it is likely to affect firm choice of private participation mode but may be unlikely to directly affect project survival. In the second step, we estimate the private participation mode—survival equations via ordinary least squares (OLS), including the inverse Mills ratio to obtain unbiased estimates of coefficients. White's robust test is used to correct heteroskedasticity.

Findings

Table 1 shows the number of different private participation modes across geographic areas. Table 2 summarizes the variables, and Table 3 reports the results for first-stage multinomial model. The base category is acquisition mode (market governance) of private

¹ In labor economics, the term "switching" refers to individuals switching between sectors, such as union vs. non-union jobs Hamilton, B. A., and Nickerson, J. A., "Correcting for Endogeneity in Strategic Management Research", *Strategic Organization*, Vol. 1, Page 51-78, 2003..

participation, so that the coefficients are interpreted as affecting the odds of choosing contract (internal governance) or JV (hybrid), relative to the odds of choosing acquisition (market governance). Our instrumental variable—country's economic development—does affect private participation mode: firms in more developed economies tend to choose hybrid over market governance. Country's institutional uncertainty appears to increase the odds of private entities choosing internal governance and hybrid opposed to market governance, indicating that firms self select governance structures according to the level of uncertainty in the institutional environment, thus supporting Hypothesis 1a. Hypothesis 2a is also supported. Asset-specific investment by private entities increases the odds of choosing internal governance and hybrid opposed to market governance, indicating that firms do self select their governance structures given their firm characteristics.

Insert Table 1, Table 2 and Table 3 about here

The results for second-stage switching regression model are presented in Table 4. We regress the survival of the privatized projects on asset specificity, institutional uncertainty and other control variables. The switching regression model is estimated separately in each subsample of private participation mode.

To test Hypothesis 1b, we compare the coefficients of institutional uncertainty across the column models for three different governance modes. We find the coefficient for institutional uncertainty is not different from zero for internal governance or hybrid at 5% level. The coefficient for institutional uncertainty is -4.9 and significant at 5% level for market governance. This means institutional uncertainty has more adverse effects on survival of private participation projects with market governance than with internal governance or hybrid, supporting Hypothesis 1b. Given that the standard deviation of institutional uncertainty is 0.488, this finding means one standard deviation higher in institutional uncertainty will increase the odds of failure by 11 times ($4.9 \times 0.488 = 2.4$, $e^{2.4} = 11$).

To test Hypothesis 2b, we compare the coefficients of private participation across the column models for three different governance modes. We find the coefficient for asset specificity is not different from zero for internal governance or hybrid. The coefficient for asset specificity is -0.184 and significant at 5% level for market governance. It means asset-specific investment has more adverse effects on survival of private participation projects with market governance than with internal governance or hybrid, supporting hypothesis 2b. Specifically, for those private entities that choose market governance, a 10% increase of asset-specific investment will increase the odds of failure by 6 times ($e^{1.84} = 6$).

Insert Table 4 about here

Discussion

This study explores attributes of institutional environments and firm investments. We find evidence that different investments vary systematically in their governance structure to respond in a coordinative manner to uncertainty in the institutional environments and to asset specific investments.

In the post-privatization era in emerging economies, the institutional environment tends to be uncertain. We recognize institutional uncertainty as an important factor in emerging economies and integrate TCE and institutional theory to explain firm governance structure choices. We also recognize that TCE suggests firms should integrate to minimize opportunistic behavior whereas the knowledge-based view suggests firms should integrate to facilitate knowledge transfer and coordination. We argue that TCE and the knowledge-based view delineate distinct yet complementary aspects of the effect of governance mode.

There are two major findings in our study. First, we find that private participation projects in an institutional environment with a higher level of uncertainty tend to choose internal or hybrid governance structure rather than market governance structure; private entities with a higher level of asset specific investments are also likely to choose internal or hybrid governance structure. This finding addresses our first research question: Under what circumstances do private entities choose certain forms of governance structures? It also suggests that in emerging markets, private entities rely more on forming alliances with the government than on market mechanism to cope with the uncertain institutional environment.

This may have ramifications for private entities to choose the transaction type and the governance structure in face of institutional uncertainty and asset specificity. Private entities may gain control in privatization through various self-selected governance modes. North (1990) argues that institutional rules develop upon path-dependent projectories. One source of path dependency in institutional change is that the conformity to public sector template is likely to continue in the newly privatized projects and there is great level of uncertainty in terms of how institutions change. This creates the necessity for the private participation projects to adopt the governance mode that facilitates transactions between the state and the private entities in an uncertain institutional environment.

To answer the second research question — what's the consequence of the choice of governance structures? — we examine how governance choices affect opportunistic behavior in transactions and knowledge transfer in cooperation between private entities and the government. We find that higher institutional uncertainty and asset specificity have more adverse effects on the survival of private participation projects with market governance than those with internal or hybrid governance.

Our findings imply that private participation projects may control institutional uncertainty and negative effects related with asset specificity through certain internal arrangements, but not through market governance. The empirical evidence suggests that the self-selected private participation modes may account for success or demise of private participation projects.

Conclusion

Our study taps into an important and current issue in emerging economies: transactions between the government and private entities in private participation projects. Three contributions emerge. First, we extend TCE beyond the usual consideration of incentive conflicts. TCE have emphasized opportunistic behavior and incentive alignment in transactions. However, in addition to incentive conflict, failures of transaction may arise because parties read and react to signals differently, even though their purpose is to achieve a timely and compatible combined response (Gulati et al., 2005; Williamson, 1991). We focus on the limitations in governance structure in private participation projects. The novelty of our approach lies in suggesting that different privatization modes used to organize transactions between the government and the private entity differ in their capacity to align actions through processes. We suggest that private entities recognize the differences in governance structures in terms of facilitating knowledge generation and cooperating with the state and self-select the governance mode that better facilitates transactions with the government.

Second, we recognize the level of institutional development as a factor of uncertainty in privatization environments. Uncertainty is usually treated as a trigger to opportunistic behavior in traditional TCE research. We recognize that institutional uncertainty is also a pressure for private entities to adapt to cooperation with the state and requires greater information exchange in transactions. Environment is a source of uncertainty to organizational sub-units which have important implications for the design of governance structure. We extend TCE by suggesting that uncertainty in the institutional environments requires the design of governance mode that better facilitates coordination in transactions.

Third, this research provides a timely guide to privatization process in emerging economies. Prior research on privatization does not recognize the different structures of private investments (Zahra et al., 2000). We disagree with the view that there is a uniform of privatization and explicitly study private participation with three governance modes. Our study suggests that there are differences in the ability to facilitate transactions among private participation projects with different governance modes. We argue that in order for a private participated project to survive, the private entities need to choose a governance mode that best facilitates transactions with the state. Our results generally support this

argument. The marginal effect of institutional uncertainty and asset specificity are most adverse on private participation projects with market governance that least facilitates transactions. Although we are unable to detect any difference between internal governance and hybrid mode of private participation in terms of the effects of environmental uncertainty, our results recommend a caution for choosing market governance structure in an environment with high institutional uncertainty.

Our study is at the level of aggregates such as “arm’s-length” or “internal transaction”. Future research on coordination within or between firms needs to be conducted at a level of detail that enables us to distinguish the actual coordination mechanisms used to manage transactions. We hope that future research will challenge and extend what we have found here. Doing so will help ensure that research in this area ultimately contributes to the understanding of how these private participation projects evolve, perform, and hopefully prosper in the future.

References

- Argyres, N. S., and Liebeskind, J. P., "Contractual Commitments, Bargaining Power, and Governance Inseparability: Incorporating History into Transaction Cost Theory", Academy of Management Review, Vol. 24, Page 49-63, 1999.
- Barnard, C., The Functions of the Executive. Cambridge, MA.: Harvard University Press. 1938.
- Boycko, M., Shleifer, A., and Vishny, R., "Privatizing Russia", Brookings Papers on Economic Activity, Vol. 2, Page 139-192, 1993.
- Choi, C. J., Lee, S. H., and Kim, J. B., "A Note on Countertrade: Contractual Uncertainty and Transaction Governance in Emerging Economies", Journal of International Business Studies, Vol. 30, Page 189-201, 1999.
- Coase, R., "The Nature of the Firm", Economica, Vol. 4, Page 386-405, 1937.
- Coff, R., "Bidding Wars over R&D Intensive Firms: Knowledge, Opportunism, and the Market for Corporate Control", Academy of Management Journal, Vol. 46, Page 74-85, 2003.
- Conner, K., and Prahalad, C. K., "A Resource-Based Theory of the Firm: Knowledge Versus Opportunism", Organization Science, Vol. 7, Page 477-492, 1996.
- Daft, R. L., Organization Theory and Design. Cincinnati, OH: SouthWestern. 2001.
- David, R., and Han, S.-K., "A Systematic Assessment of the Empirical Support for Transaction Cost Economics", Strategic Management Journal, Vol. 25, Page 39-58, 2004.
- De Castro, J. O., and Uhlenbruck, K., "Characteristics of Privatization: Evidence from Developed, Less-Developed and Former Communist Countries", Journal of International Business Studies, Vol. 28, Page 123-143, 1997.

- Doh, J. P., Teegen, H., and Mudambi, R., "Balancing Private and State Ownership in Emerging Markets' Telecommunications Infrastructure: Country, Industry, and Firm Influences", Journal of International Business Studies, Vol. 35, Page 232-250, 2004.
- Dyer, J. H., and Singh, H., "The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage", Academy of Management Review, Vol. 23, Page 660-680, 1998.
- Galbraith, J. R., Organization Design. Reading, MA: Addison-Wesley. 1977.
- Grant, R. M., "Towards a Knowledge-Based Theory of the Firm", Strategic Management Journal, Vol. 17, Page 109-122, 1996.
- Gulati, R., Lawrence, P. R., and Puranam, P., "Adaptation in Vertical Relationships: Beyond Incentive Conflict", Strategic Management Journal, Vol. 26, Page 415-440, 2005.
- Hamilton, B. A., and Nickerson, J. A., "Correcting for Endogeneity in Strategic Management Research", Strategic Organization, Vol. 1, Page 51-78, 2003.
- Hayek, F. A., "The Use of Knowledge in Society ", American Economic Review, Vol. 35, Page 519-530, 1945.
- Heckman, J., "Sample Selection Bias as a Specification Error", Econometrica, Vol. 47, Page 153-163, 1979.
- Henisz, W. J., and Zelner, B. A., "The Insitution Environment for Telecommunications Investment", Journal of Economics & Management Strategy, Vol. 10, Page 123-147, 2001.
- Henisz, W. J., Zelner, B. A., and Guillen, M., "The Worldwide Diffusion of Market-Oriented Infrastructure Reform, 1977-1999", American sociological Review, Vol. 70, Page 871-897, 2005.
- Hennart, J. F., and Park, Y. R., "Greenfield Vs Acquisition", Management Science, Vol. 39, Page 1054-1070, 1993.
- Hitt, M., Dacin, M. T., Levitas, E., Arregle, J. L., and Borza, A., "Partner Selection in Emerging and Developed Market Contexts: Resource-Based and Organizational Learning Perspectives", Academy of Management Journal, Vol. 43, Page 449-467, 2000.
- Holmstrom, B., and Milgrom, P., "The Firm as an Incentive System", American Economic Review, Vol. 84, Page 972-991, 1994.
- Jensen, M. C., and Meckling, W. F., "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure", Journal of Financial Economics, Vol. 3, Page 305-360, 1976.
- Johnson, G., Smith, S., and Coding, B., "Microprocesses of Institutional Changes in the Context of Privatization", Academy of Management Review, Vol. 25, Page 572-580, 2000.
- Johnson, S., McMillan, J., and Woodruff, C., "Courts and Relational Contracts.", Journal of Law, Economics & Organization, Vol. 18, Page 221-278, 2002.

- Khanna, T., and Palepu, K., "Why Focused Strategies May Be Wrong for Emerging Markets.", Harvard Business Review, Vol. 75, Page 41-51, 1997.
- Kogut, B., and Zander, U., "Knowledge of the Firm, Combinative Capability, and the Replication of Technology", Organization Science, Vol. 31, Page 383-397, 1996.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. W., "Law and Finance.", Journal of Political Economy, Vol. 106, Page 1113-1155, 1998.
- Mahoney, J. T., "The Choice of Organizational Form: Vertical Financial Ownership Versus Other Methods of Vertical Integration", Strategic Management Journal, Vol. 13, Page 559-584, 1992.
- Makhija, M., "The Value of Restructuring in Emerging Economies: The Case of the Czech Republic", Strategic Management Journal, Vol. 25, Page 243-267, 2004.
- Martinez, R. J., and Dacin, M. T., "Efficiency Motives and Normative Logic: Combining Transaction Costs and Institutional Logic ", Journal of Management, Vol. 25, Page 1999.
- Masten, S. E., "Transaction Costs, Mistakes, and Performance: Assessing the Importance of Governance", Managerial and Decision Economics, Vol. 14, Page 119-129, 1993.
- Masten, S. E., Meehan, J., and Snyder, E., "The Costs of Organization", Journal of Law, Economics, and Organization, Vol. 7, Page 1-25, 1991.
- Meyer, K. E., and Peng, M. W., "Probing Theoretically into Central and Eastern Europe: Transactions, Resources, and Institutions", Journal of International Business Studies, Vol. 36, Page 600-621, 2005.
- Murtha, T. P., and Lenway, S. A., "Country Capabilities and the Strategic State: How National Political Institutions Affect Multinational Corporations' Strategies", Strategic Management Journal, Vol. 15, Page 113-130, 1994.
- North, D. C., Institutions, Institutional Change, and Economic Preference. New York: Norton. 1990.
- Peng, M. W., Business Strategies in Transition Economies. Thousand Oaks, CA: Sage. 2000.
- Peng, M. W., "Institutional Transitions and Strategic Choices.", Academy of Management Review, Vol. 28, Page 275-296, 2003.
- Ramamurti, R., "Why Are Developing Countries Privatizing?", Journal of International Business Studies, Vol. 23, Page 225-249, 1992.
- Ramamurti, R., "A Multilevel Model of Privatization in Emerging Economies", Academy of Management Review, Vol. 25, Page 525-550, 2000.
- Shaver, J. M., "Accounting for Endogeneity When Assessing Strategy Performance: Does Entry Mode Choice Affect", Management Science, Vol. 44, Page 571-585, 1998.

- Shenkar, O., and Von Glinow, M. A., "Paradoxes of Organizational Theory and Research: Using the Case of China to Illustrate National Contingency", Management Science, Vol. 40, Page 56-71, 1994.
- Spicer, A., McDermott, G. A., and Kogut, B., "Entrepreneurship and Privatization in Central Europe", Academy of Management Review, Vol. 25, Page 630-649, 2000.
- Vernon, R., Sovereignty at Bay. New York: Basic Books. 1971.
- Williamson, O. E., Markets and Hierarchies. New York: Free Press. 1975.
- Williamson, O. E., The Economic Institutions of Capitalism: Free Press: New York. 1985.
- Williamson, O. E., "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives", Administrative Science Quarterly, Vol. 36, Page 269-296, 1991.
- Williamson, O. E., and Ouchi, W. G. 1981. The Markets and Hierarchies Program of Research: Origins, Implications, and Prospects. In A. H. Van de Ven, & W. F. Joyce (Eds.), Perspectives on Organization Design and Behavior: 347-370. New York: Wiley-Interscience.
- Wright, M., Filatotchev, I., Hoskisson, R. E., and Peng, M. W., "Strategy Research in Emerging Economies: Challenging the Conventional Wisdom", Journal of Management Studies, Vol. 42, Page 1-33, 2005.
- Zahra, S. A., Ireland, H. D., Gutierrez, I., and Hitt, M. A., "Privatization and Entrepreneurial Transformation: Emerging Issues and a Future Research Agenda", Academy of Management Review, Vol. 25, Page 509-524, 2000.

Figure 1 Governance Structures of Private Investments

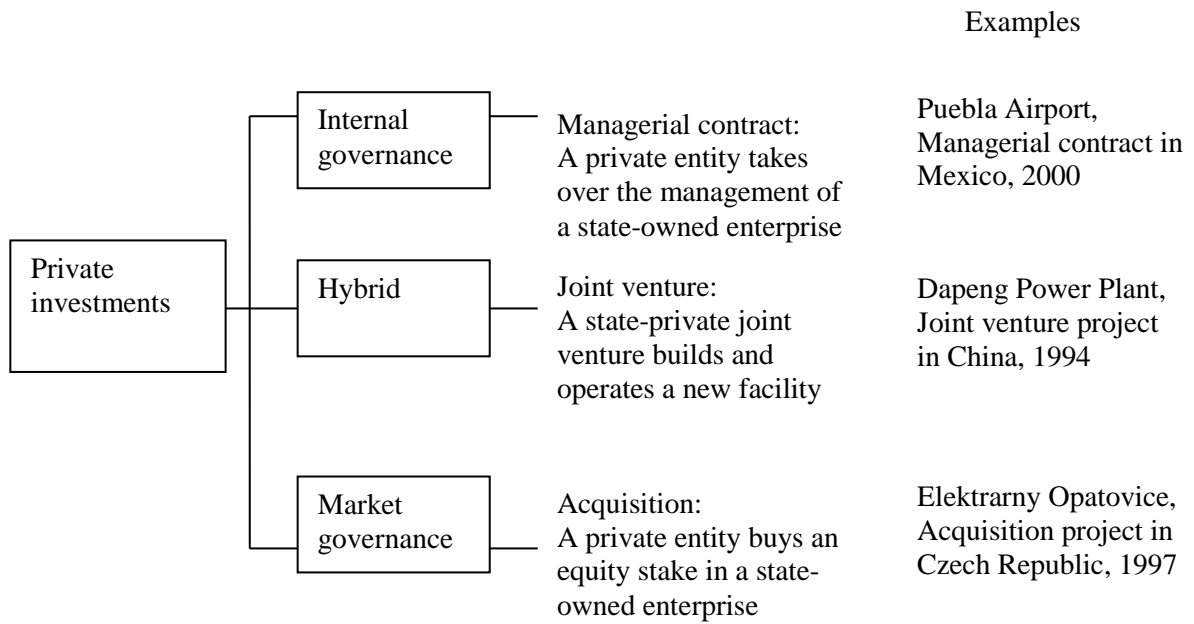


Table 1 Governance structures of private investments in 94 Emerging Economies

	Internal governance	Hybrid	External governance	Total
East Asia and Pacific	163	389	86	638
Europe and Central Asia	59	207	186	452
Lat America and Caribbean	330	445	240	1015
Middle East and North Africa	19	43	3	65
South Asia	20	161	12	193
Sub-Saharan Africa	61	105	21	187
Total (94 countries)	652	1350	548	2550

Table 2 Descriptive statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 Survival	0.946	0.226												
2 Internal governance	0.256	0.436	-0.023											
3 Hybrid	0.529	0.499	0.038	-0.622										
4 Market governance	0.215	0.411	-0.023	-0.307	-0.555									
5 Asset specificity	84.75	23.63	-0.002	0.061	0.213	-0.324								
6 Uncertainty	3.078	0.488	-0.004	0.0004	0.159	-0.194	-0.164							
7 Age	7.197	3.403	-0.116	-0.003	-0.058	0.073	0.015	-0.171						
8 Per capita GDP (log)	3.29	0.388	-0.024	0.053	-0.182	0.165	0.096	-0.572	0.142					
9 Bank loan	0.16	0.367	-0.018	-0.038	0.033	0.000	0.089	-0.101	0.018	-0.021				
10 Payment to gov	72.31	289	-0.021	-0.104	-0.185	0.335	-0.064	0.004	0.006	0.073	0.077			
11 Energy	0.405	0.491	-0.008	-0.388	0.096	0.296	-0.044	-0.069	-0.067	-0.017	0.051	0.006		
12 Telecommunication	0.222	0.416	0.049	-0.289	0.279	-0.031	0.035	0.041	0.104	-0.105	0.037	0.149	-0.44	
13 Transport	0.279	0.449	-0.029	0.5156	-0.267	-0.223	0.038	0.052	0.043	0.049	-0.08	-0.107	-0.513	-0.332

Table 3 Multinomial Logit Regression of governance structures

	Internal governance	Hybrid
Asset specificity	0.04*** (0.004)	0.045*** (0.003)
Uncertainty	0.738*** (0.224)	0.984*** (0.172)
Year elapsed	-0.032 (0.023)	-0.07*** (0.019)
Per capita GDP (log)	-1.032**	0.158

	(0.361)	(0.262)
Bank loan	0.057	0.146
	(0.218)	(0.171)
Energy	-4.817***	-1.576***
	(0.347)	(0.327)
Telecommunication	-5.269***	-0.178
	(0.506)	(0.351)
Transport	-0.488	-0.572 [†]
	(0.352)	(0.359)
East Asia and Pacific	-1.373 [†]	-0.33
	(0.809)	(0.669)
Europe and Central Asia	-1.83*	-2.2***
	(0.821)	(0.67)
Latin America	-1.683*	-1.828*
	(0.79)	(0.656)
South Asia	-2.127*	0.075*
	(0.925)	(0.743)
Sub-Saharan Africa	-0.533	-1.087
	(0.922)	(0.728)
Constant	2.586	-3.327*
	(1.91)	(1.468)

N	2550	2550
Wald chi2	1065.36***	1065.36***
Pseudo R2	0.357	0.357

The base category is market governance.

Numbers in the brackets are standard errors.

† $p < 0.1$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 4 Survival of private participation modes

	Model 1	Model 2	Model 3
	Market governance	Internal governance	Hybrid
Asset specificity	-0.184* (0.074)	0.009 (0.010)	0.010 (0.012)
Uncertainty	-4.923* (1.788)	-0.670 (0.457)	-0.296 (0.375)
Years elapsed	0.191 (0.107)	-0.082* (0.039)	-0.204*** (0.040)
Bank loan	-1.084* (0.504)	-0.001 (0.529)	0.344 (0.445)
Payment to gov	-0.0003 (0.0002)	-0.001*** (0.0003)	-0.0005* (0.0002)
Energy	12.273* (5.060)	-0.254 (2.044)	-0.194 (0.757)
Telecommunication	7.636* (2.948)	0.085 (2.831)	0.918 (0.962)
Transport	3.741 (2.314)	0.554 (0.443)	-1.259 (0.784)
East Asia and Pacific	2.618† (1.372)	0.058 (0.905)	1.120 (0.911)

Europe and Central Asia	9.898** (3.392)	-0.860 (0.841)	0.321 (0.684)
Latin America	6.790* (3.001)	-0.422 (1.601)	0.026 (0.590)
South Asia			-0.249 (0.889)
Sub-Saharan Africa		-0.955 (1.08)	1.658 (1.038)
Constant	1.789 (1.820)	5.24* (2.633)	3.994 (2.907)
correction for self-selection	11.307** (4.066)	-0.096 (1.434)	0.715 (0.903)
N	524	633	1350
Wald chi2	44.67***	33.87**	57.79***
Pseudo R2	0.1433	0.1159	0.1096

In Model 1, variable Sub-Saharan Africa and South Asia are dropped since they predict survival perfectly, 24 observations are not used.

In Model 2, variable South Asia is dropped due to collinearity, 19 observations are not used.

Numbers in the brackets are standard errors.

† p<0.1 * p<0.05 ** p<0.01 *** p<0.001

Appendix 1: Status of Infrastructure Projects

Survived projects:

- **Under construction** projects for which assets are being built
- **Operational projects** that have started providing services to the public
- **Concluded projects** for which the contract period has expired and was neither renewed nor extended by either the government or the operator.

Failed projects:

- **Canceled projects** from which the private sector has exited in one of the following ways:
 - Selling or transferring its economic interest back to the government before fulfilling the contract terms.
 - Removing all management and personnel from the concern
 - Ceasing operation, service provision, or construction for 15 percent or more of the license or concession period, following the revocation of the license or repudiation of the contract
- **Distressed** projects where the government or the operator has either requested contract termination or are in international arbitration.

Source: Private participation in infrastructure database, World Bank.