

# **Institution and Multinational Investment**

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## **Abstract**

Property rights institution and contracting institution are two important types of institutions that influence multinational investment. In the previous literature, these two types of institutions were twined together and their separate effects cannot be flashed out. In this paper, we unbundle these institutions and examine their relative influences. We establish the direction of causation between the institutions and multinational investment using instrumental variables method. Our results show that property rights institution has generally strong positive effects on FDI while contracting institution does not. Our findings have practical implications for both government policymakers and multinational managers/investors.

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## **Introduction**

The importance of property rights institution and contracting institution has long been recognized (see De Long, Bradford and Shleifer, 1993; Dixit, 2012; Hart, 1995; North, 1981; Olson, 2000). Property rights institution constitutes the rules and regulations that protect citizens against the power of the government and elite groups whereas contracting institution is defined as the rules and regulations governing business transactions between ordinary citizens or private firms. Previous international business (IB) research has focused on the clusters of institutions that implicitly include both private property protection and contracting elements. For example, North (1981, 1990), in his broad definition of institutions, identified the importance of contractual efficiency and property rights protection, among others, as the main drivers of economic growth. Since these two important institutional elements were often jumbled together within a broad definition or a cluster of institutions, the separate or differential effects of property rights institution and contracting institution, despite their alleged importance, could not be disentangled and empirically compared. It is therefore not clear which of these institutions is more important than the other. Acemoglu and Johnson (2005) made an attempt to unbundle a cluster of institutions, as defined in North (1981, 1990), more succinctly into property rights institution and contracting institution. Subsequent to the unbundling, the overlapping influences of these two types of institutions have been minimized. Acemoglu and Johnson (2005) examined how these two distinctive types of institutions affect macroeconomic performance. Their results showed that property rights institution is more important than contracting institution in affecting real GDP growth.

While previous IB research examined many different types of institutions, studies on how property rights institution and contracting institution affect multinational investment have been relatively scant. Some authors defined and measured institutions by adopting North's broad terminology (see for example, Cantwell, Dunning and Lundan, 2010; Dixit, 2012; Dunning and Lundan, 2008; Fan *et al*, 2009; Filatotchev *et al*, 2007; Meyer *et al*, 2008) but the distinction between property rights institution and contracting institution embodied within North's definitional cluster have not been empirically segregated and hence their relative roles in multinational investment remain unanswered. Some authors adopted narrower views or more micro definitions of institutions in which the clustering effects could be smaller (for example, Chacar, Newbury and Vissa, 2010; Guler and Guillen, 2010; Henisz, 2000; Meyer, 2001; Meyer *et al*, 2009; Wang *et al*, 2012). However, there is a paucity of studies on measuring and examining the importance of either property rights institution or contracting institution even though each of these types of institution falls within the narrower definition of institution. Furthermore, much attention has been devoted to studies on how institutions influence entry modes (see for example, Cantwell, Dunning

and Lundan, 2010 and Dunning, 2004 for the reviews). Entry mode was frequently defined in terms of the degree of partnership or joint venture with investors in a host country. Our major contribution in this paper lies in disentangling or unbundling a cluster of institution, such as defined in North (1981), into property rights institution and contracting institution, as in Acemoglu and Johnson (2005), and examine if these institutions affect cross-border investment flows emanating from multinational activities. Specifically, we examine the impacts of property rights institution and contracting institution on foreign direct investments (FDI), mergers and acquisitions (M&A), and affiliate sales by foreign subsidiaries. While these activities appear to be similar in some aspects, there are also important distinctions. For example, while FDI comprises investments in new plants and machineries in host countries, M&A involves acquiring the established production facilities. Whereas FDI and M&A involve investments in fixed capital and financial assets, affiliate sales constitute output of goods and services. While investments in FDI and M&A are determined *ex-ante* regarding where to invest and produce, affiliate sales by subsidiaries of multinational firms are *ex-post* decisions, that is, location decisions on where to produce are not necessary after the production facilities have been duly set up. Hence, given the different types and nature of the cross-border business investment activities or transactions, the need for property rights protection and the need for contracts may differ from one another.

The unbundled institutions are especially important to international business because in theory they govern the costs and hence the location of multinational investment. The location or cost theory stipulates that investors are faced with high costs if the host countries are maimed by poor property rights protection and poor contracting environment (see Dunning and Lundan, 2008). In the case of FDI, for instance, investors from parent countries are concerned about the long-term safety or protection of their physical and financial assets. Fixed assets such as production facilities, warehouses, building, and machinery remain in the host countries for a long period of time. Hence, multinational firms are likely to be disinterested in this type of investment if their properties are not well protected or if their valuable assets are subject to expropriation by governments, authorities or powerful elite groups in the host countries.

It appears to be very difficult for foreign investors to rectify a poor property rights institution because the powerful elite groups are often in control of policies that govern the protection of their assets. Foreign investors are often barred from taking part in making political and economic decisions in the host countries. Unlike property rights protection, contracting institution between private business entities may be circumvented in the absence of any direct government or elitist forces. Moreover, contractual terms may be altered, manipulated or circumvented to the mutual benefits of both parties. Hence, we conjecture,

as in Acemoglu and Johnson (2005), that property right institution is more important than contracting institution in facilitating multinational investment. Our results show that property rights institution is indeed significant or important in all multinational investment activities under our investigation. Contracting institution is found to be an insignificant or relatively unimportant determinant of FDI. Our results imply that the importance of North's broad definition of institution as well as some other macro institutions depends on the relative impacts of its constituent institutions.

International business research, just as in some other disciplines, often encounters empirical problems associated with endogeneity (see Cantwell, Dunning and Lundan, 2010; Kwok and Tadesse, 2006). Empirical studies investigating particularly the relationships between institutions and multinational activities were often fraught with reverse causality and omitted variable bias. For instance, institutions may affect multinational activities, and *vice versa*. An omitted variable may affect institutions and multinational activities at the same time, rendering the independent variables endogenous. It is therefore of crucial importance to control for endogeneity in this type of IB research. The endogeneity issues, however, have largely been neglected in the previous empirical IB research (see Kwok and Tadesse (2006) for a recent review). In this paper, we contribute to the literature by identifying and using proper and well-tested instrumental variables to deal with the potential endogeneity in institutional IB research.

## **Literature Review**

### *Institutions*

Institutional factors have been recognized as one of the most important determinants of IB strategies and multinational activities (Dunning 2004; North 1981, 1990). An institution-based view of IB strategy, in combination with industry- and resource-based views, shed light on the most fundamental questions confronting IB, such as "what drives firm strategy and performance in IB?" (Peng, Wang and Jiang, 2008). North (1981, 1990) provided a broad view of institution (or macro institution) that aims to address the issues of long-term economic growth. He defined institutions as the social, economic, legal, and political organization of a society and argued that good institutions will concurrently support private contracts and provide checks against expropriation by the government or other politically elite groups. In a recent study, Fan *et al* (2008) broadly defined institutions as the general quality of government or strength of constraints on executive power, government track record and contractual efficiency. As we observe, there are a number of individual institutional elements clustered together within the broad definition of institution. For example, both North (1981, 1990) and Fan *et al* (2009) recognized the importance of contracts and property rights, among others, in their broad or bundled concepts of

institutions but their relative importance governing multinational investment have not been explored in the IB literature.

There are also narrower definitions or measures of institutions specific to a particular sector such as banking, finance, education, technology, logistics, and communication. Institution is also individually defined as corruption, patent system, corporate law, financial policy stability, technological support, strength of equity market, etc. (see Guler and Guillen, 2010). In addition, antitrust law strength and unskilled labor market flexibility, and some other more narrowly defined institutional variables, are found to be determinants of entry modes (Charcar, Newburry and Vissa, 2010). The narrower or more specific definitions of institutions appear to be less vulnerable to the biasness due to clustering or bundling. In this paper, the property rights institution and contracting institution may also fall within the confine of a narrower institutional definition as neither of these institutions may be separated further, but these two specific types of institutions have been neglected in the IB literature despite their importance.

There are also demarcations on formal and informal types of institutions. North (1990) defined institutions as formal rules (such as constitutions, political systems, laws and regulation) and informal constraints (such as norms, standards, and values). In the formal institution, emphasis has been placed on the formal features of the state systems while the informal institution often refers to business value and practices across private firms. Dunning (2004) showed that foreign investors seemed to be more concerned with the quality of formal institutions than they were with informal ones. McMillan and Woodruff (2002) mentioned that some firms seek informal institutional support such as personal networks, to substitute for formal institutions. In this paper, property rights institution (firms interacting with government) may be categorized as formal, as it involves dealing with a political system, whereas contracting institution (private firms interacting with one another) may be construed as informal. Dunning (2004) seemed to point to the importance of the property rights institution whereas McMillan and Woodruff (2002) to the importance of the contracting institution. Their claims, however, have not been empirically tested.

Subsequent to the definitions made by North (1981, 1990), various macro definitions have been used. For example, Mudambi and Navarra (2002) demarcated institutions into political institutions such as regime type, the national structure of decision-making and the judicial system, economic institution such as the structure of national factor market and the terms of access to international factors of production, and socio-cultural factor such as informal norms, customs, and religion. Rondinelli and Behrman (2000) identified the role of ethical norms, property rights, private enterprise development,

support of competition, equality of opportunity and safety nets, and democratic governance. Dunning (2004) showed that political stability, favorable policies, exchange control, good corporate governance, good regulatory framework, fairness of the tax system, bureaucratic efficiency, public administration transparency, corruption control, etc. (comprising both institutions and the strategies and policies of organizations relating to these institutions) are among the important determinants of bilateral FDI flows. We observe that these researchers used composite indexes to represent their institutional measures. Their results point to the importance of one bundled institution but not to the relative importance of the different types of institutions embodied in their broad measures. Yet, the importance of a bundled institution depends on the relative importance of its constituent institutions, as it is more practical for policy makers in a host country to improve its institutional environment and for multinational managers/investors to evaluate the institutional risks of their investment based on their relative importance.

Property rights protection comes in several ways. First, there is a possibility of asset seizure (outright expropriation) by governments and powerful elite groups. Expropriation benefits them directly by transferring asset or revenue from multinational enterprises (MNEs) to the government budget or the bank accounts of the elite groups. The government may also receive indirect benefits by transferring assets or property rights of a foreign company to domestic ownership. Second, host government, and its implicit presence in the background of every economic transaction, poses a threat to MNEs through policy shifts in taxation, regulations or other agreements, which then diminishes their asset ownership and expected returns. Third, MNEs face the possibility of expropriation from their own business partners in terms of asset specificity, technological leakage and free riding on brand-name reputation (Henisz, 2000). Property hazard cannot easily be internalized because the government always retains its monopoly power on the legal use of force. Therefore, unless firms are able to seek alternative safeguards, they are less likely to invest in countries with weak property rights protection. Unlike property rights protection, private contracts, as mentioned in Acemoglu and Johnson (2005), are alterable or substitutable in accordance with mutual agreements in the absence of coercion by powerful external forces.

#### *Influence of Institutions on Multinational Investment*

Empirical studies have been conducted to show how national level institutions condition the behavior of MNEs (see Dunning and Lundan (2008) for a review) and how host's country institutions significantly affect its inflows of FDI (Delios and Henisz, 2003; Lamsdorff, 1999). Kostova and Dacin (2008), in a theoretical survey, mentioned that MNE's survival is determined by the extent of its alignment with the institutional environment and therefore organizations have to comply with external institutional pressures. Li, Lin and Lu (2014) theoretically established the importance of institutional change as a driving

component of firm strategy in emerging economies. Filatotchev *et al* (2007) found that corporate governance significantly influences location choices by the firms. Kostova and Zaheer (1999) examined how various types of institutional complexities inhibit MNEs from gaining access to host countries. Meyer (2001) showed that host country institutions in transition economies have influential impact on the choice of entry modes (measured as degree of ownership/partnership). Rodreguez *et al* (2005) found that the type of corruption in the host country would affect the choice of entry modes (measured also as degree of joint venture). They argued that the higher the pervasiveness of corruption, the higher is the likelihood that an MNE will choose to enter a wholly owned rather than a local partner. Wang *et al* (2012) showed how different home-country government levels and types of involvement, through the generation of institutional pressures (for example, by interfering with the use of firm resources) impacts internationalization behavior. Meyer *et al.* (2009) showed how IB strategies are pursued using different entry modes in different institutional contexts. Specifically, alternative modes of entry allow firms to overcome different kinds of market inefficiencies related to both characteristics of the resources and to the institutional context. Henisz (2000) posited that the effect of institutions on the choice of market entry mode (majority-owned versus minority-owned) varies across multinational firms based on the extent to which they face expropriation hazards from their joint-venture partners in the host country. As more domestic constituents are implicated in the expropriation, a partnership between a multinational and a host-country firm is, on average, politically more costly to expropriate for the government than a solely multinational enterprise. Hence, firms faced with an institutional environment posing high probability of expropriation are more likely to choose a minority-owned venture as a market entry mode.

The above literature points to the paucity of studies on the influences of property rights and contracting institutions. The IB literature often used broad institutional clusters. For example, Mudambi, Navarra and Sobbrío (2003) examined how the national level institutions condition the behavior of domestic and foreign MNEs. Dixit (2012) focused on governance structure defined as insecurity of property rights and contracts; Filatotchev *et al* (2007) focused on corporate governance, measured as a composite index; Cantwell, Dunning and Lundan (2010) focused on macro-level institutions, as in North (1990); Fan *et al* (2009) focused on general institutional quality, which is also an aggregate institutional proxy; Dunning and Lundan (2008) focused on the formal and informal institutional constraints; and Meyer *et al* (2009) focused on broad economic freedom index comprising business freedom, trade freedom, investment freedom and financial freedom. The IB literature also used individual and more disaggregate types of institutions, such as corruption (Kwok and Tadese, 2006; Guler and Guillen, 2010), specific political hazard (Henisz, 2000), specific labor, financial and product markets (e.g. Chacar, Newbury and Vissa, 2010), liability and antitrust laws (Chacar, Newbury and Vissa, 2010), individual

institutional reforms such as price liberalization and privatization (Meyer, 2001), and level and proportion of government involvement (Wang *et al*, 2012), but little research focused on either property rights institution or contracting institution. In this paper, we fill the gap in the literature by unbundling the effects of property rights institution and contracting institution.

The IB literature mainly focused on how institutions affect entry modes, which are commonly defined as different equity stake or different degree of cooperation or joint venture with their partners in the host country (e.g. Filatotchev *et al*, 2007; Henisz, 2000; Meyer, 2001; Meyer *et al*, 2008). The IB literature also examined the influences of institutions on the size of FDI (Wang *et al*, 2010), firm performance (Chacar, Newbury and Vissa, 2010), as well as other entry strategies (e.g. Guler and Guillen, 2010). In contrast, we investigate the unbundled institutional effects on multinational investment.

### *Endogeneity Issues*

Past studies also point to significant impacts of the entry modes of MNEs on the institutions (the reverse causality). Kwok and Tadesse (2006) examined how the presence of foreign-owned subsidiaries changes the institutional environment of corruption. They proposed three avenues through which the MNEs may have an effect on its host institutions: regulatory pressure effect, demonstration effect and professionalization effect. Cantwell, Dunning and Lundan (2010) mentioned that institutions and MNEs evolve together or affect each other, implying that institutions and MNE's activities may be endogenous. On the one hand, MNE's activities may affect change in the local institutions: for example, an MNE may engage in political activities to advance specific kinds of regulation that gives it an advantage over its competitors. MNEs may also align themselves with domestic firms in lobbying the government for economic protection or support (Cantwell, Dunning and Lundan, 2010). MNEs could also shape the institutional environment of corruption (Kwok and Tadesse, 2006). On the other hand, institutional environment shapes MNE's activity and decision process. Institutions motivate them to adjust and give them the capacity to operate in a variety of host-country environments. Over time, MNEs have shifted to more open business network structures that provide greater flexibility in adapting to changes in the institutional environment (Chesbrough, 2006). Kwok and Tadesse (2006) provided some control for endogeneity by resorting to a couple of instrumental variables such as electricity power consumptions and telephone lines but they did not test whether or not these instrumental variables were orthogonal to their institutional dependent variable.

Though the existence of endogeneity in previous studies of the relationships between institutions and entry modes is acknowledged, as in Kwok and Tadesse (2006) and Cantwell, Dunning and Lundan



(2010), proper controls for endogeneity are either absent or insufficient. In our empirical design, we use well-documented and well-tested instruments to control for the potential endogeneity between our unbundled institutions and multinational investment activities. This constitutes another major contribution to the IB literature.

### **Theory and Hypothesis Testing**

Variations in institutional regimes around the world suggest that there is scope for international analysis of the links between institutions and IB strategies. A theoretical proposition for this is that good institutions reduce transaction costs of cross-border activities by reducing uncertainty and establishing a stable structure to facilitate interactions and therefore enhance competitive advantage of global investors (Dunning and Lundan, 2008; Meyer, 2001). Good institutions reduce information asymmetries, and therefore lower risks or costs of doing business (Meyer, 2005). Good institutions support effective functioning of the market in such a way that firms can engage in business transactions without incurring undue costs or risks (Peng, 2008).

While the industry- and resource-based views may be relevant, the cost theory advanced by the afore-mentioned researchers is probably the most appropriate for explaining why and how institutions affect FDI across countries. Institutional constraints are fundamentally cost constraints. Foreign investors will incur very high costs of doing business in host countries with poor property rights institution and/or contracting institution and will avoid investing in these countries. The relative costs attached to the different international business activities (FDI) and hence their differential flows from one country to another, are predicted to be affected by the relative importance of the property rights and contracting institutions. These are elaborated as follows.

#### *FDI*

The quality of a nation's institutions has become an important component of both its overall productivity and its drawing power to attract inbound FDI (Dunning, 2004). Institutions are location bound extra market instruments designed to facilitate multinational activity (such as FDI) by reducing the transaction costs of such activity. Transaction costs include search, negotiation and enforcement costs, as well as all the other "hassle" costs of doing business and uncertainties arising from possible opportunism, moral hazards and incompleteness in commercial dealings (Dunning, 2004). In the context of this paper, the transaction costs also include (a) the direct and indirect expropriations by powerful authorities due to a

poor property rights institution, which result in tangible and intangible asset and production losses, and (b) inefficiencies and hence the costs of delay and business failures due to a poor contracting institution.

In the case of FDI, foreign assets can be “swallowed” by government, elite groups, or powerful authorities of the host countries. Whereas blatant expropriation of foreign assets is not so common nowadays, properties of foreign firms can be insecure in various ways. There are cases that weak property right protection results in policy shifts such as changes in tax policies rendering the repatriation of profits to be restricted. Dixit (2012) conjectured that weak governance structures often handicap less-developed countries and transition economies to attract FDI. In this paper, multinational investment from one country to another is predicted to be adversely affected by poor property right institutions mainly because it is predominantly in the forms of fixed durable assets or physical capital which are invested in host countries for a long time period. Unlike trading in final goods and services, fixed capital goods (such as machinery and factory) are less internationally mobile and it is not easy to move these types of assets from one country to another. International asset immobility enhances the chance of expropriation by powerful and often corrupt authorities. Furthermore, fixed durable asset investments are characterized by long durations of investments. The likelihood of being expropriated increases over time with unprecedented changes in government policies or political regimes. Foreign investors become nervous about building their long-term assets in countries where property rights institution is lacking or, equivalently, where the subsequent costs of the investments are very high, or the total present values from the streams of future revenues flows are expected to diminish. Hence, in the case of FDI, we hypothesize:

*H1: Property rights institution significantly influences FDI.*

FDI flows may also be influenced by efficiency level in host countries’ contracting institution. Acemoglu and Johnson (2005) found that poor contracting institutions do not affect long run macroeconomic performance partly because one type of contract that retards a business transaction could be replaced by another type that facilitates it. In the absence of the IB literature, we follow the economic literature and hypothesize:

*H2: Contracting institution does not significantly influence FDI.*

## **Empirical Strategy**

### *Dependent Variables*

Our dependent variables are the various bilateral investment *FDI* undertaken by multinational firms. Bilateral FDI stock is obtained from Organization for Economic Cooperation and Development (OECD)'s database. Our multinational investment data correspond to the year 2000, the choice of which is based on the availability of the institutional data in 2000. All our dependent variables (in US\$ million) are expressed in logarithmic form.

### *Independent Variables*

To proxy for the contracting institution, we use the three different measures developed by Djankov *et al* (2003), which entail the costs of enforcing a business contract. The first is an index of *legal formalism*, measuring the number of formal legal procedures necessary to resolve a simple case of collecting an unpaid check. It is expressed as an index ranging from 1 (lowest formalism) to 7 (highest formalism). The second is an index of *procedural complexity*, measuring the difficulties in resolving the case of an unpaid commercial debt. It is also expressed as an index, which ranges from 0 (least complex) to 10 (most complex). The third is the *number of procedures* necessary to resolve a court case involving this same commercial debt. All the three measures explicitly deal with a dispute between private parties without access to political power.

To proxy for the property rights institution, we use Polity IV's *constraint on executive* measure, as it comprises notion of relationship between property rights institution and political institutions. The measure *constraint on executive* captures the degree of constraints on politicians and powerful elites. It is expressed as an index ranging from 1 (lowest level of constraint) to 7 (highest level of constraint). To supplement this measure, we also resort to two other proxies: Political Risk Services' assessment of *protection against government expropriation* and the Heritage Foundation's assessment of *private property rights protection* (see Acemoglu and Johnson 2005). *Protection against government expropriation* denotes the average risk index of expropriation of private investment by government between 1985 and 1995. The index ranges from 0 to 10 with a higher score implying greater risk protection. *Private property rights protection* is also an index ranging from 0 to 5 with a higher score indicating better private property rights protection.

### *Instrumental Variables*

A novelty of this paper is our control for endogeneity. There are two pertinent issues here. Take FDI as an example. First, there is a possibility of simultaneous causality, meaning that in our present context, institutional environment can impact FDI flows whereas FDI flows may also impact institution. In the

presence of simultaneous causality, ordinary least square (OLS) regression leads to simultaneous bias: the OLS coefficient thus obtained measures only the magnitude of *association/correlation* rather than the magnitude and direction of *causation*. Second, bilateral FDI flows could be due to factors that are unobservable by researchers or omitted in the model. An unobservable or omitted factor that influences property right institution for instance may also concurrently influence FDI flows. For example, geography, in terms of location advantage, may be a factor behind both the development of a better property right institution and a country's attractiveness to FDI. Although omitted variable bias due to observable factors can be addressed directly by including the observable variables as control variables in the regression, yet, omitted variable bias due to unobservable factors presents a greater challenge. Both simultaneous causality and omitted variable bias are types of endogeneity problems that are common in international business research which explores the relationships between foreign investments and institutions.

Our empirical strategy in tackling the endogeneity problem is to make use of well-established instrumental variables (IV) and apply an IV estimator called two stage least squares (2SLS) to estimate the causal effect. Specifically, these instrumental variables serve as the sources of *exogenous* and distinct sources of variation in property rights institutions and contracting institutions, effectively isolating the part of variation of institutions due to exogenous instruments from other part of variation of institutions due to endogenous factors. As a result, it establishes the *casual* relationship between unbundling institutions and multinational investment.

We refer to the literature to guide our choice of the instrumental variables. The colonial history has been identified, as in Djankov *et al* (2002, 2003), Acemoglu and Johnson (2005), and Acemoglu, Johnson, and Robinson (2001, 2002), to be an important exogenous source of variations affecting the development of both contracting and the property rights institutions, and it is quite impossible for a direct feedback from FDI flows to colonial history. Specifically, Djankov *et al* (2002, 2003) showed that the legal system imposed by colonial power has a strong effect on all three measures of contracting institutions and little effect on our measures of property rights institutions. We thus use the *legal origin* of a country to instrument the three measures of contracting institutions. It is a dummy variable, with "1" denoting English legal origin and "0" otherwise. On the other hand, mortality rates for potential European settlers has been shown to have a large effect on current property rights institution and virtually no impact on our measures of contracting institution (see Acemoglu, Johnson, and Robinson (2001, 2002)). *Settler mortality* is estimated from the mortality rates of European-born soldiers, sailors and bishops when stationed in the colonies. We therefore use mortality rate facing European settlers during the early period

of European colonization to instrument the three measures of property rights institution. In our empirical analysis, *settler mortality* is expressed in logarithmic form.

#### *Control Variables*

First, we control for host and parent country sizes (*Parent and Host Country Real GDP*) which may affect the level of multinational investment. A larger host country may imply a bigger market while a larger parent country may imply more supply-side potential for firms to go abroad. Real GDP, in US\$ trillion (2005 constant price) is expressed in logarithmic form. Second, we take into account bilateral geographical distance (*Distance*) between the two most populous cities in the parent and host countries. It is expressed in logarithmic form. The variable measures the degree of liability of foreignness and hence the cost of setting up a business. Third, we introduce several dummy variables that previous literature have identified to be relevant to multinational investment such as whether the pair countries are geographical contiguous (*Contiguous*), share common official language (*Common Language*), have or had colonial link (*Colony*). These three control variables are dummies, which equal to “1” if parent and host countries are contiguous, or share the same language, or have/had the same colonial heritage. Fourth, some of the multinational investment may be driven by resource seeking motive. To control for this, we include share of a host country’s export of natural resource relative to its total export (*Resource Export*). It is the ratio of fuel, ores and metals exports to the total merchandise exports in the year 2000. In addition, multinational firms may be attracted to a host country with a stable macroeconomic environment, measured by average inflation rate in the past two decades or so (*Inflation*). It is the logarithm of average annual consumer price index (CPI) from 1970 to 1998. Finally, we control for host country’s government consumption (*Government Consumption*). It is the average ratio of government consumption expenditure to GDP from 1970 to 1989.

\*\*\*\*INSERT TABLE 1 HERE\*\*\*\*

#### **Empirical Results**

Table 1 presents descriptive statistics (means and standard deviations) for all the variables used in our empirical analysis. Take bilateral cumulated FDI for instance (first row). For the world sample with 1710 country pairs of bilateral FDI stock across 188 host countries and 162 parent countries where positive data is available, the average FDI stock in a host country from a parent country is US\$ 2.8 billion in 2000. For the ex-colonies sample with 589 country pairs of bilateral cumulated FDI stock across 96 host countries and 76 parent countries where positive data is available, the average FDI stock is US\$ 3.15 billion.

Former English colonies attract more FDI (US\$ 5.17 billion) than former French colonies (US\$ 1.04 billion). In each of the two groups of ex-colonies, former colonies with lower settler mortality during the colonization period attract on average more FDI than those with high settler mortality. Similar pattern emerge for M&A and affiliate sales (Rows 2 and 3).

The three measures of contracting institution capture the cost of enforcing a business contract with higher index/score indicating greater cost. Consider legal formalism for example (Row 4, Table 1). The *legal formalism index* measures the procedural formalism in resolving a commercial dispute, ranging from one to seven with a higher score indicating greater formalism (more costly). In the sample of 61 former European colonies, the average index is 3.78. The ex-English colonies have on average a lower score (2.79) than ex-French colonies (4.68), suggesting that enforcing a commercial dispute is less costly in the ex-English colonies (with better contracting institution). Similar patterns emerge for the other two measures of contracting institution, *procedural complexity* and *number of procedures*.

Our key measure of property rights institution is *constraint on executive*, an index ranging from one to seven with higher score indicating greater constraint on the politicians. We are interested in whether countries with lower settler mortality rates have better property rights institutions. The index of constraint on executive is on average higher in the former English colonies with lower settler mortality (5.53) than those with higher settler mortality (3.38). The same index is also higher in the ex-French colonies with lower settler mortality (5.11) than those with higher settler mortality (3.37), suggesting that countries with lower settler mortality rates have better property rights institutions. Similar pattern emerge for other two measures of property rights institution (Row 8 and 9, Table 1).

In this paper, in view of the endogeneity, we report in Table 2 the correlation results from univariate regressions rather than Pearson correlations. There are two advantages: (a) the biasness of the correlations due to the endogenous influence can be compared (OLS versus 2SLS) and (b) the validity of the instruments can be verified. However, Pearson correlations provide correlation matrix across all the variables, including the control variables, and for brevity, we report the results in web appendix 1.

There are three panels (top, middle and bottom) in Table 2 corresponding to each of the three dependent variables. Each cell in Table 2 corresponds to a separate regression. Take for instance the correlation between FDI and “*constraint on executive*” (Row 4, panel 1). For both the whole world and ex-colony sample, this correlation is statistically significant at one percent level, estimated using either OLS without due regard to causality or 2SLS. Controlling for endogeneity, the 2SLS results provide

statistically meaningful relationship between *constraint on executive* and FDI. On average, a one unit rise in *constraint on executive* leads to a 47 percent increase in FDI inflow to a host country (equivalent to an increase of US\$ 1.48 billion). Controlling for endogeneity, our benchmark from 2SLS in Table 2 show that there are strong causal relations between property rights institutions (executive constraints, protection against risk of expropriation and property rights) and multinational investment while evidence for causal relations between contracting institutions (legal formalism, procedural complexity and number of procedures) and multinational investment are weak.

\*\*\*\*INSERT TABLE 2 HERE\*\*\*\*

A merit of Table 2 is found in its report of the first stage regression results that point to the relationships between the institutional variables and their instruments. It is well known that a valid instrument must satisfy two conditions: It should be correlated with the endogenous regressor (*Instrument Relevance*) but orthogonal to other omitted characteristics (*Instrument Exogeneity*). While it is accepted in the literature that a country's *legal origin* and *settlement mortality* satisfy *Instrument Exogeneity* condition (by not affecting multinational investment directly), the *Instrument Relevance* condition can be established through inspection of the highly significant correlations between the institutional variables and the instrumental variables (last column of Table 2), pointing to the validity of our instrumental variables in controlling for the inherent endogeneity.

Our main results, controlling for endogeneity and factors other than institutions, are reported in Tables 3. Each column reports results from a 2SLS regression of the multinational investment on the unbundled institutions. The effects of institutions on FDI are reported in Table 3 which shows that all the property rights institution proxies are significant at 1 percent level, hence corroborating hypothesis 1a. The 2SLS results also point to substantial impacts of property rights institution on FDI flows. For example, a one-unit improvement in *constraint on executive* leads to a 84 percent increase in multinational investment for a host country (equivalent to an increase of US\$ 2.65 billion). Table 3 also shows that all the contract institution proxies are not significant at the 10 percent level, hence corroborating hypothesis 1b.

The above results may be explained as follows. Contracts between private firms could somehow be altered or substituted but property rights protection instituted by powerful authorities could not be circumvented. In the case of multinational investment, the fixed physical capital assets stay in the host country for a long period of time, hence the risk of losses in the long run, due to some policy changes by

the powerful groups or individuals, could be quite substantial, and yet the investors are not able to reverse their misfortune. It is reasonable to conclude that weak property rights institutions in the host countries result in significantly less entry of multinational investment into these countries.

\*\*\*\*INSERT TABLE 3 HERE\*\*\*\*

### **Robustness Check**

We run additional regressions for robustness check (results available from the web appendix). First, to check the sensitivity of our results to an alternative instrument, we replace *settlement mortality* with *population density* in 1500, another colonial history variable that has been found to be strongly correlated with property rights institution in the literature. We repeat the exercise by running 15 set of regressions as in Table 3 to 5 using *population density* in 1500 as an instrument for the property rights institutions (see web appendixes 2 to 4) and find similar results that contracting institution has no significant impact on multinational investment, whereas property rights institution has. Thus, results from an alternative instrument lend credence to our main hypotheses.

Second, we check if our results are driven by a few outliers. We exclude four English ex-colonies (Australia, Canada, New Zealand and the US), which are the dominant players in multinational investment. Our main hypotheses that property rights institutions are important determinants of multinational investment while contracting institutions are not still hold for the subsample which excludes these four major English ex-colonies (see web appendix 5).

Lastly, we extend our data on bilateral cumulated FDI to the year 2012 and check if our results are robust to those in 2000. We run 2SLS regressions using both *settlement mortality* and *population density* in 1500 as alternative instruments for the property rights institution variable while keeping *legal origin* as instrument for the contracting institution. Our results confirm our main findings that property rights institutions but not contracting institutions matter for FDI (see web appendix 6).

### **Conclusions and Implications**

Property rights institution and contracting institution have long been identified to be important determinants of multinational investment across countries. Previous IB research, however, was not able to provide a meaningful comparison of the relative influences of these two types of institutions because



these institutions are either neglected or bundled together within a cluster of institution. In this paper, we unbundle these institutions, using empirical measures/instruments identified in Acemolgu and Johnson (2005), and examine the relative disaggregate influence of property rights and contracting institutions on the multinational investment. While acknowledging that the two important types of institutions may still overlap with each other to some extent, their differences after the unbundling are more distinctively identifiable or measurable: for example, the property rights institution is between the state and the citizen and the contracting institution is between citizens without any influence from a powerful individual or group. Several important results emerge from this paper. First, our empirical analysis shows that property rights institution is important in all the types of multinational activities under study, indicating that in the absence of property rights protection, multinational investment will be severely thwarted. An improvement in property rights institutions via an increase of one-point scale in *constraint on executive* for instance leads to enormous inflows of multinational investment to the host countries. Second, contracting institutions are found in this paper to be relatively unimportant in all the multinational investment activities under study. This result points to the deficiency in using a bundled institutional measure as policy makers in host countries and investors in parent countries have to rely on the specific information concerning the relative importance of the unbundled constituent institutions in order to be effective in enhancing cross border investment flows.

The problem with simultaneity between institution and multinational investment has recently been recognized in the IB literature. Using well-established instruments to account for the endogeneity, we find that property rights institution is more important than contracting institution. Previous studies show that in situations where formal institutions (e.g. property rights, rule of law or governance) are weak, informal institutions (networks and contractual alternatives) are extensively used (see also Peng, 2000; Meyer and Peng, 2005). Our paper, however, reveals that countries with poor property rights institutions cannot attract inflows of multinational investments by resorting to good contracting institutions. This is in contrast to many studies that have claimed the role of contractual handicap in thwarting the international investment flows.

Our paper has practical implications for both government policymakers and multinational investors/managers. First, it helps government policymakers to attract more foreign investments by alerting them to the sheer importance of reducing weak property right protection risk and uncertainty. For example, host country governments may resort to some bilateral investment treaties (BITs) which give foreign firms protection against host country manipulations of taxation and regulation by imposing obligations on host countries that reduce the home country investors' perception of property insecurity

hazards (Dixit, 2012). Second, it helps multinational firms in making better decisions on where to target their FDI. Previous IB research showed that a bundled institution embodying both property rights and contracting institutions is important when choosing a country to target their investments. However, this paper points out to investors/managers that property rights institution is much more important than contracting institution. Our paper, therefore, helps multinational investors/managers to enhance their investment returns.

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Table 1 Descriptive Statistics

|  | World Sample      | Ex-Colonies Sample | English Ex-Colonies | English Ex-Colonies   |                        | French Ex-Colonies | French Ex-Colonies    |                        |
|--|-------------------|--------------------|---------------------|-----------------------|------------------------|--------------------|-----------------------|------------------------|
|  |                   |                    |                     | Low Settler Mortality | High Settler Mortality |                    | Low Settler Mortality | High Settler Mortality |
| FDI Stock (US\$ billion)               | 2.825<br>(14.47)  | 3.151<br>(15.69)   | 5.166<br>(21.45)    | 6.061<br>(23.18)      | 0.162<br>(0.50)        | 1.038<br>(3.63)    | 1.397<br>(4.43)       | 0.401<br>(1.09)        |
| Legal Formalism                        | 3.660<br>(1.06)   | 3.776<br>(1.23)    | 2.790<br>(0.82)     | 2.470<br>(0.86)       | 3.096<br>(0.73)        | 4.678<br>(0.72)    | 4.837<br>(0.78)       | 4.475<br>(0.59)        |
| Procedural Complexity                  | 5.768<br>(1.36)   | 5.930<br>(1.54)    | 4.546<br>(1.00)     | 4.566<br>(0.98)       | 4.527<br>(1.02)        | 6.752<br>(1.16)    | 6.951<br>(1.27)       | 6.601<br>(1.04)        |
| Number of Procedures                   | 26.999<br>(12.00) | 28.720<br>(12.81)  | 20.504<br>(7.11)    | 19.931<br>(4.90)      | 21.087<br>(8.76)       | 33.496<br>(12.96)  | 31.210<br>(10.75)     | 35.167<br>(14.12)      |
| Constraint on Executive                | 4.501<br>(2.09)   | 4.124<br>(1.89)    | 4.347<br>(2.00)     | 5.533<br>(1.54)       | 3.384<br>(1.80)        | 4.038<br>(1.77)    | 5.108<br>(1.61)       | 3.366<br>(1.52)        |
| Protection against Gov't Expropriation | 7.099<br>(1.81)   | 6.402<br>(1.46)    | 6.910<br>(1.67)     | 7.610<br>(1.59)       | 6.106<br>(1.36)        | 6.023<br>(1.15)    | 6.502<br>(0.92)       | 5.606<br>(1.17)        |
| Private Property Rights Protection     | 3.315<br>(1.17)   | 3.042<br>(1.05)    | 3.510<br>(1.07)     | 3.793<br>(1.18)       | 3.222<br>(0.85)        | 2.682<br>(0.87)    | 3.210<br>(0.52)       | 2.324<br>(0.88)        |
| Log Parent Country GDP                 | -3.439<br>(2.20)  | -3.459<br>(2.20)   | -3.458<br>(2.19)    | -3.466<br>(2.19)      | -3.452<br>(2.19)       | -3.459<br>(2.20)   | -3.464<br>(2.20)      | -3.456<br>(2.20)       |
| Log Host Country GDP                   | -3.437<br>(2.20)  | -3.653<br>(2.00)   | -3.761<br>(2.35)    | -2.113<br>(2.24)      | -4.916<br>(1.62)       | -3.590<br>(1.69)   | -2.577<br>(1.61)      | -4.227<br>(1.41)       |
| Contiguous                             | 0.012<br>(0.11)   | 0.014<br>(0.11)    | 0.011<br>(0.11)     | 0.009<br>(0.096)      | 0.013<br>(0.11)        | 0.017<br>(0.12)    | 0.016<br>(0.12)       | 0.017<br>(0.12)        |
| Log Distance                           | 8.831<br>(0.77)   | 8.872<br>(0.72)    | 8.897<br>(0.73)     | 8.985<br>(0.68)       | 8.832<br>(0.75)        | 8.851<br>(0.72)    | 8.942<br>(0.71)       | 8.795<br>(0.71)        |
| Common Language                        | 0.176<br>(0.38)   | 0.220<br>(0.41)    | 0.301<br>(0.45)     | 0.279<br>(0.44)       | 0.317<br>(0.46)        | 0.156<br>(0.36)    | 0.148<br>(0.35)       | 0.163<br>(0.36)        |
| Colony                                 | 0.010<br>(0.09)   | 0.006<br>(0.07)    | 0.007<br>(0.08)     | 0.009<br>(0.09)       | 0.005<br>(0.70)        | 0.005<br>(0.07)    | 0.005<br>(0.07)       | 0.005<br>(0.07)        |
| Resource Exports (%)                   | 23.091<br>(28.98) | 21.102<br>(26.15)  | 16.765<br>(25.56)   | 12.985<br>(16.27)     | 19.867<br>(30.83)      | 24.758<br>(26.26)  | 26.065<br>(27.98)     | 23.312<br>(24.13)      |
| Host Country Openness                  | 89.098<br>(48.86) | 83.643<br>(55.26)  | 99.963<br>(73.59)   | 111.891<br>(92.89)    | 91.596<br>(54.72)      | 71.966<br>(29.64)  | 71.075<br>(31.09)     | 72.528<br>(28.68)      |
| Log Inflation                          | 2.839<br>(1.48)   | 2.757<br>(1.31)    | 2.385<br>(0.72)     | 2.012<br>(0.34)       | 2.672<br>(0.80)        | 3.085<br>(1.59)    | 3.524<br>(1.41)       | 2.767<br>(1.65)        |
| Government Consumption                 | 0.178<br>(0.07)   | 0.184<br>(0.07)    | 0.188<br>(0.08)     | 0.148<br>(0.07)       | 0.221<br>(0.07)        | 0.180<br>(0.06)    | 0.151<br>(0.05)       | 0.202<br>(0.05)        |

Mean values are reported with standard deviations in parentheses.

Table 2 Correlations between Multinational Investment and Institutions: Univariate Regressions

|  | World Sample                      |                      | Ex-Colonies Sample |                        |
|--|-----------------------------------|----------------------|--------------------|------------------------|
|  | OLS                               | OLS                  | 2SLS               | First Stage Regression |
|  | Dependent Variable: Log FDI Stock |                      |                    |                        |
| Legal Formalism                        | -0.351***<br>[-4.08]              | -0.262***<br>[-2.80] | -0.149<br>[-1.33]  | -2.234***<br>[-34.15]  |
| Procedural Complexity                  | -2.144***<br>[-3.86]              | -0.125<br>[-1.62]    | -0.193*<br>[-1.89] | -2.400***<br>[-26.82]  |
| Number of Procedures                   | -0.023**<br>[-2.38]               | -0.026**<br>[-2.44]  | -0.035*<br>[-1.95] | -13.515***<br>[-17.54] |
| Constraint on Executive                | 0.124***<br>[2.58]                | 0.241***<br>[3.71]   | 0.466***<br>[4.23] | -0.976***<br>[-18.86]  |
| Protection against Gov't Expropriation | 0.095*<br>[1.71]                  | 0.338***<br>[4.62]   | 0.451***<br>[4.36] | -1.026***<br>[-25.92]  |
| Private Property Rights Protection     | 0.315***<br>[4.00]                | 0.559***<br>[5.13]   | 0.619***<br>[4.14] | -0.726***<br>[-26.34]  |

, \*\*, \*\*\* denote significance level at 10%, 5% and 1%, respectively.

Table 3 Institutional Determinants of FDI: Contracting versus Property Rights Institutions (2SLS)

| Dependent Variable: Log FDI Stock      | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| Log Parent Country GDP                 | 1.016***<br>[12.89]  | 1.017***<br>[12.95]  | 1.007***<br>[12.93]  | 1.042***<br>[13.63]  | 1.061***<br>[13.25]  |
| Log Host Country GDP                   | 0.709***<br>[7.63]   | 0.681***<br>[7.66]   | 0.730***<br>[6.58]   | 0.259*<br>[1.84]     | 0.565***<br>[6.56]   |
| Contiguous                             | 0.422<br>[0.27]      | 0.268<br>[0.17]      | -0.201<br>[-0.12]    | 0.580<br>[0.39]      | 0.246<br>[0.16]      |
| Log Distance                           | -1.097***<br>[-4.38] | -1.208***<br>[-4.73] | -1.341***<br>[-4.27] | -0.992***<br>[-4.34] | -1.078***<br>[-4.24] |
| Common Language                        | 0.897***<br>[2.63]   | 0.865**<br>[2.54]    | 0.864**<br>[2.50]    | 0.648**<br>[2.02]    | 0.746**<br>[2.27]    |
| Colony                                 | 1.472***<br>[2.66]   | 1.436***<br>[2.65]   | 1.519***<br>[2.73]   | 1.493***<br>[2.85]   | 1.276**<br>[2.35]    |
| Resource Exports                       | 0.014**<br>[2.36]    | 0.014**<br>[2.38]    | 0.014**<br>[2.42]    | 0.011*<br>[1.81]     | 0.006<br>[0.89]      |
| Host Country Openness                  | 0.018***<br>[4.75]   | 0.017***<br>[5.28]   | 0.018***<br>[4.43]   | 0.007***<br>[3.93]   | 0.006***<br>[3.10]   |
| Log Inflation                          | 0.211*<br>[1.71]     | 0.186<br>[1.35]      | 0.282***<br>[2.73]   | 0.553***<br>[4.29]   | 0.313***<br>[2.86]   |
| Government Consumption                 | 2.221<br>[0.70]      | -0.027<br>[-0.01]    | 4.037<br>[0.75]      | 3.664<br>[1.15]      | -0.715<br>[-0.28]    |
| Legal Formalism                        | 0.335<br>[1.15]      |                      |                      | 0.137<br>[0.63]      | 0.403<br>[1.38]      |
| Procedural Complexity                  |                      | 0.282<br>[1.01]      |                      |                      |                      |
| Number of Procedures                   |                      |                      | 0.048<br>[1.06]      |                      |                      |
| Constraint on Executive                | 0.843***<br>[3.15]   | 0.825***<br>[3.24]   | 0.857***<br>[3.01]   |                      |                      |
| Protection against Gov't Expropriation |                      |                      |                      | 1.121***<br>[3.29]   |                      |
| Private Property Rights Protection     |                      |                      |                      |                      | 1.380***<br>[3.36]   |
| Constant                               | 7.633**<br>[2.49]    | 8.834***<br>[3.04]   | 9.261***<br>[3.44]   | 2.563<br>[0.66]      | 7.663***<br>[2.76]   |
| N                                      | 454                  | 456                  | 456                  | 470                  | 445                  |
| Adjusted R <sup>2</sup>                | 0.314                | 0.328                | 0.307                | 0.366                | 0.388                |

\*, \*\*, \*\*\* denote significance level at 10%, 5% and 1%, respectively.