International Organizations and Political Risk –

The case of multilateral development banks in infrastructure projects

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Abstract –

The world polity literature has long emphasized that International Organizations (IOs) influence the behavior of States through multilateral coercive and legitimation pressures. In contrast, we argue that IOs can create an alternate system of governance by partnering with firms. In the context of private investment in infrastructure projects, we examine how Multilateral Development Banks (MDBs) partner with firms to lower the likelihood of project distress caused by ex-post re-contracting between States and firms. We argue that MDBs provide operational assistance to projects which ensure greater upfront review and development, more balanced allocation of risks between investors and States, and increased oversight in implementation. MDBs also provide political assistance by leveraging their influence to resolve disputes that arise between firms and host governments during the course of an infrastructure project. We expect the effect of MDBs to be stronger in countries with weak institutional development and where MDBs have greater leverage. Support for these hypotheses is presented using a sample of 2117 infrastructure projects with private investment initiated in 45 developing countries from 1995 to 2009.

Introduction

World polity literature has long emphasized the role of international organizations (IOs) in influencing State behavior. Some IOs like the World Bank, the International Monetary Fund, the World Trade Organization, and the United Nations are widely recognized, but several hundreds of them govern a wide variety of issues such as taxation, foreign direct investment, scientific knowledge, labor markets, food safety, and environmental issues. These organizations are designed to resolve cross-border issues and play a key role in the integration of world society or world polity (Boli and Thomas, 1997; Meyer, Boli et al, 1997; Dobbin, Simmons and Garrett, 2007; Ingram and Torfason, 2010; Polillo and Guillen, 2005; Henisz, Zelner and Guillen, 2005). In this literature, IOs are primarily assumed to have a direct influence on state behavior; governments adopt policies and alter the regulatory environment of the country in response to multilateral coercive and legitimation pressures. This emphasis on how IOs influence state behavior is not surprising, and even expected, since it is states who are members of IOs. However, states can also constrain the reach and actions of IOs through budgetary and other means. Thus, IOs have increasingly adopted an alternate approach to achieve their objectives; by aligning, partnering, and working directly with non-state actors, including firms, on individual projects, agendas, or research themes. The partnership between firms and IOs can create a "multi-actor system of soft and indirect governance" that allows IOs to achieve their objectives in a more effective manner (Abbott et al, 2015: 4). Yet, the value of such collaboration on achieving firm-level goals or outcomes has received less attention. And this is important. If effective, such collaboration can have a profound influence on activities of the firm where influence and involvement of state actors is critical in determining success and profitability.

One such case is private investment in infrastructure projects. Governments around the world have tried to encourage firms to complement public sector investment in infrastructure projects. In each year during the period 2000-2014, between 200 and 450 infrastructure projects worldwide were partially or fully funded by private investment and the total private investment peaked in 2012 at

$140 billion (World Bank, 2015). However, the need for significant additional private investment in this sector continues. The global demand for infrastructure investment is estimated to be nearly US $4 trillion a year, but only about US $2.7 trillion is invested each year (WEF, 2014, Bain, 2014). One reason why firms have shied away from investing more in this sector is because of the political risks they face. Infrastructure projects are capital-intensive, with large sunk costs and location specific assets. Given their economic and social salience, governments are deeply involved their regulation and administration (Sawant, 2010). In spite of this involvement, many projects are poorly developed upfront, exposing both governments and firms to agreements that lack rigor, appropriate allocation of risk, or a clear dispute resolution mechanism. Consequently, contract parties may seek to regularize initial inconsistencies and shortcomings through ex-post re-contracting. In addition, governments may act opportunistically to unilaterally change laws and regulations in favor of the state once upfront investment by the firm is completed. Such ex-post re-contracting can undermine the entire investment, or lead to disputed, distressed, or cancelled projects.

We examine whether the risk of projects becoming distressed is altered when the private firms in the project partner with IOs. In particular, we ask if the participation of multilateral development banks (MDBs) in private infrastructure projects lowers project risk. We propose that MDBs such as the World Bank, the Inter-American Development Bank, or the Asian Development Bank, can bring significant benefits to partner firms. First, they provide operational assistance to ensure greater upfront review and development of the project, generate contracts with more balanced allocation of risks between investors and States, and increased oversight of project partners in implementation. Second, they provide political assistance. They leverage their influence to impact negotiations and resolve disputes that may arise between firms and host governments during the course of an infrastructure project. Consequently, we argue that private infrastructure projects with MDB participation face lower likelihood of ex-post re-contracting or project distress. However, the benefits of MDBs' participation are likely to be influenced by the host state characteristics. In particular, the value of technical assistance offered by MDBs is likely to be lower when host

countries have better developed institutional systems including more stable governments with stronger rule of law and bureaucratic systems. Further, MDBs are also more likely to be influential in resolving disputes in host countries where they have greater leverage, or in countries with greater multilateral debt.

We examine our hypotheses using a sample of 2117 infrastructure projects with private investment initiated in 45 developing countries from 1995 to 2009. Empirical results provide evidence that private investment projects with MDB participation are less likely to be distressed. We are able to rule out the alternate explanation that MDB participation is associated with lower rates of project distress due to the ex-ante selection of low risk projects using a propensity score matching methodology. Further, we find that a host country's institutional development and the extent of multilateral debt negatively moderate the effect. The effect of MDB participation in lowering project distress is greater in countries with weak institutional development and in countries with greater multilateral debt.

Theory and hypotheses

Role of international organizations

IOs are organizations that have countries as members and are designed to govern, coordinate, and facilitate a wide spectrum of cross-border issues that cannot otherwise be addressed domestically (Abbott and Snidal, 1998). World polity scholars have long argued that IOs play a central role in influencing State behavior (Boli and Thomas, 1997; Meyer, Boli, Thomas and Ramirez, 1997). IOs create, carry, and embody the world culture (Meyer et al, 1997). They play an important role in diffusing policies through coercive and legitimating pressures among states embedded in the network (Beckfield, 2008). For example, powerful actors such as the International Monetary Fund (IMF) may influence the policy choices of governments by directing (or withholding) access to resources or by favoring a domestic coalition supporting a given policy (Henisz, Zelner and Guillen,

2005). Alternately, IOs create and perpetuate norms about the appropriate tasks of the modern

State through the establishment of a bureaucracy and organized activities. The role of IOs has been

documented in a wide variety of settings, including the spread of democracy (Torfason and Ingram,

2011), the adoption and retrenchment of neoliberal policies (Henisz, Zelner and Guillen, 2005;

Zelner, Henisz and Holburn, 2009), establishing an independent central bank (Polillo and Guillen,

2005), influencing intellectual property protection (Jandhyala, 2015), and national scientific

development (Finnemore, 1993; Jandhyala and Phene, 2015).

However, IOs also face significant barriers to altering state behavior or achieving their objectives.

States participate in IOs on a voluntary basis. States are, in general, reluctant to authorize IOs to

govern them (or other domestic actors like firms or NGOs) using binding international law and strong

enforcement mechanisms. Further, IOs are sometimes viewed as illegitimate external actors trying

to ensure disproportionate gains to a few private or foreign actors at the expense of the local

consumers. Henisz, Zelner and Guillen (2005) note that the backlash against neoliberal reforms

promoted by multilateral institutions such as the World Bank or the International Monetary Fund in

many parts of the world may be driven by such deleterious effects. In addition, national policies or

structures adopted in response to multilateral pressures are likely to be imperfectly implemented or

repealed (Weber, Davis and Lounsbury, 2009; Henisz and Zelner, 2005). In addition, IOs are tightly

controlled by states and sometimes have limited scope for independent action (Krasner, 1982;

Mearsheimer, 1994). Thus, even if IOs have the potential to influence governments' incentives, their

strength may not be high enough to restrain aggressive states that control the IOs' agendas and

budgets. In other cases, IO staff may have clear career incentives to avoid acknowledging failure

even in poorly performing states (Wane, 2004). Thus, challenges remain in performing the roles IOs

have been allocated or achieving the broad mandates they have been given.

Seeking alternate approaches to attain their objectives, IOs are increasingly turning to an indirect

and soft approach referred to as orchestration, whereby they "enlist intermediary actors on a

voluntary basis, by providing them with ideational and material support, to address target actors in pursuit of their goals" (Abbott, Genschel, Snidal and Zangl, 2015: 3). Intermediaries are attracted to work with IOs when these organizations offer governance schemes that either lower the transaction costs involved in establishing collaborative ties with other actors or offer access to otherwise difficult to obtain legitimacy and resources. In their extensive volume, Abbott et al (2015) demonstrate IO orchestration in diverse issue areas, including health, security, trade, finance, human rights and environment through intermediaries such as non-governmental organizations (NGOs), trans-governmental regulatory networks, and other IOs. For example, the Global Environmental Facility (GEF) channels climate adaptation funding through other IOs including the World Bank, UNDP and UNEP which in turn implement projects in target states (Graham and Thompson, 2015).

Although Abbott et al (2015) acknowledge that private firms can also be intermediaries their work primarily considers firms to be targets whose beliefs, preferences, and conduct are to be influenced or managed. However, IOs often align, partner, and work with firms on individual projects, research themes, or agendas; thus considering them as intermediaries in the pursuit of their goals. For example, some inter-governmental organizations fund and participate in scientific research projects with firms to foster innovation outcomes among member states (Jandhyala and Phene, 2015). Others, like the Multilateral Investment Guarantee Agency (MIGA), provide project-level political risk insurance for firms' foreign investments in order to influence state behavior. With a focus on private sector development, the International Finance Corporation (IFC) finances and provides advice for private sector ventures and projects in developing countries. The ideational and material support from IOs is, in turn, directed at influencing the behavior of other actors such as states, regulatory bodies, etc.. Consequently, direct participation of IOs in economic activities has the potential to dramatically transform the governance of transactions and the relationship between firms and

states. Yet, prior literature has paid limited attention to the effects of such collaboration on transactions between firms and states or the likelihood of project success.[1]

We focus on one type of IO – multilateral development banks (MDBs). Like other IOs, MDBs have states as members. MDBs are financial institutions set up by member countries to finance development projects in areas like health, education, infrastructure, law, etc. Some examples include the World Bank, the Inter-American Development Bank, the Asian Development Bank, and the African Development Bank. MDBs provide financial products like loans and grants to sovereign governments or public sector entities, generally on terms more favorable than what might otherwise be available from commercial banks. They also partner with private sector firms committing financial resources to private sector projects that demonstrate developmental impact, act as key agents in raising additional funds from other financial institutions or private equity funds, and provide advisory services. For example, the International Finance Corporation provided nearly $8.5 billion for private sector development in 2014 (IFC, 2014). Similarly, the Asian Development Bank invested $1.82 billion of its funds in 22 projects in 2013, and raised an additional $2.9 billion through co-financing for private sector investors (ADB, 2014). On the other hand, MDBs themselves are dependent on firms for their technical expertise, on the ground capabilities, and their ability to implement projects. In other words, without the intermediaries (firms), MDBs will lack the resources and skills to complete the projects successfully.

By funding and participating in private sector projects, MDBs can transform the governance of the project and the bargaining relationship between private sector and government actors (Buiter and Fries, 2002; Buljevich and Park, 1999). This can be especially critical in regulated industries (eg: telecommunications, electricity, banking, oil, gas, mining, etc.) where governments have the ability to dramatically alter the profitability of investment projects by regulating entry conditions, imposing

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[1] When IOs have been examined in influencing firm-level outcomes such as foreign market performance (Rangan and Sengul, 2009), foreign divestment (Soule, Swaminathan and Tihanyi, 2014), or global innovation efforts (Phene and Jandhyala, 2015), they have primarily been considered as external actors altering the macro-environments that firms compete in rather than as collaborators for firms.

criteria on operations, changing policies, etc (Henisz and Zelner, 2001; Garcia-Canal and Guillen, 2008). We focus on private investment in infrastructure projects and examine the role played by MDBs' participation in altering risk.

Risks in infrastructure investment

Traditionally, investment in infrastructure projects was financed with public funds. Since Britain in the 1980s, however, several countries have experimented with complete or partial privatization of utilities such water provision or electricity generation, and other large infrastructure projects including in the telecommunications and transportation sectors. Since these infrastructure projects are through to provide basic social services and are crucial for economic activity and growth (Grimsey and Lewis, 2002), they attract a high level of government control and regulation. In addition, infrastructure projects are capital-intensive. They require large upfront or sunk costs that are recovered over long periods of time through the productive use of the asset. They are also illiquid; indivisibility makes for a limited secondary market. Further, they are wasting assets (Esty, 2003) - they generate cash flows owing to low variable costs without the need for specialized managerial skills to determine future discretionary investments or run operations. Infrastructure assets also produce stable, predictable cash flows as they generally have long-term sales contracts with a limited number of customers (Sawant, 2010). These characteristics make infrastructure investments particularly vulnerable to the classical "obsolescing bargain" (Vernon, 1971) or ex-post renegotiation. As interests of the private investors and host governments diverge once investments are sunk, each party seeks to change contract terms, laws, regulations, or policies to favor them. This can influence the cash flows from the project significantly, undermining the entire investment, leading cancelled projects or disputes between the parties – what we refer to as project distress.

Examples of ex-post re-contracting and project distress in infrastructure projects abound. Ramamurti and Doh (2004) describe how the Indian government renegotiated and cancelled Enron's $2 billion power deal in the country, the Bolivian government rescinded a 40 year water contract

with the global consortium Aguas del Tunari, Indonesia reneged on its commitment to buy power from two power projects in 1999, and the Brazilian government lowered the toll rates for a new expressway in 2001. Similarly, about 50% of the concession agreements signed since the late 1980s in Latin America were renegotiated within a few years (Guasch, Laffont and Straub, 2008). As many as two-thirds of the private power projects that had been negotiated in the 1990s were renegotiated by 2005 (Wells & Ahmed, 2007). In Nigeria, the electricity regulator increased grid prices to encourage investment in generation, but followed that with a price rollback to put an instant blight on investment in electricity generation (Economist, 2015).

The factors that lead to ex-post re-contracting and project distress may be broadly classified into two categories. First, many projects are poorly developed upfront, both by governments as well as participating firms. The agreements lack rigor, do not clearly identify potential revenue or the allocation of risk, fail to account for force majeure, and neglect to provide a clear and effective dispute resolution mechanism. Host governments develop model agreements that may have unrealistic or ambiguous criteria. In India, for example, the Ministry of Power's model power purchase agreement requires financial closure to be achieved within 180 days – a time frame that most firms believe to be unrealistic (Kumar, 2015). The regulatory bodies that oversee the investment may be poorly developed and lack the ability to do a thorough review of each project and bidder. For example, although environmental licenses are mandatory for all infrastructure, oil, mining, and energy projects in Colombia, by 2013 the government entity responsible had a staff of only 27 (Stone, 2015). The contracts themselves may be awarded to firms with weak or insufficient capabilities to complete the terms of the project, or ones that fail to account for social and environmental factors. Firms may also overestimate the revenue generation from projects; for instance, more than half the Mexican toll roads reached less than 50% of forecasted volumes (Harris, Hodges, Schur and Shukla, 2003). Further, corruption in license allocation can hamper the long term development. Over the life of the project, these factors may lead to conflicts among the parties. Host governments may adopt policy or contract changes ex-post to correct the initial shortcomings

which may end up negatively impacting the project cash flows. Alternately, private investors seek revisions in contract terms to reflect the realities of the project, leading to cost overruns and delays. When the parties are unable to arrive at mutually agreeable terms, projects are distressed.

Second, government led ex-post re-negotiations can arise in response to political, social or financial pressures in the host country. These pressures can result in ex-post re-contracting by the host government in order to appease or safeguard the interests of a domestic constituency, but results in project distress. Political factors such as election cycles can trigger government led re-contracting as local politicians seek popular support prior to an election or a new administration decides not to honor contract terms granted by a previous administration (Guasch, Laffont and Straub, 2007). Social factors may also spur government action. Attempts by private investors to raise prices or increase collections for services that consumers were previously obtaining for free (or low cost) through public utilities can result in street protests and civil disturbances. Controversies over contract stipulated price increases and difficulties in collecting from consumers can lead governments to engage in ex-post re-contracting. For example, consistent with their concession agreement, AES – a U.S. power company – submitted an annual tariff increase proposal to the government of Cameroon in 2009. However, the tariff adjustment was contested as Cameroon was undergoing significant increases in food and other consumer prices and the Government asked that tariffs be frozen at 2008 levels (Vesey, 2011). In other instances, such as power projects in Indonesia or infrastructure projects in Argentina, macroeconomic shocks may lead to a contraction in real incomes, reducing demand for infrastructure services (Harris, Hodges, Schur and Shukla, 2003). This increases the difficulty of servicing foreign currency debt without significant increase in tariff rates, a politically unpopular step.

Multilateral development banks and infrastructure investment

We argue that, as project partners, MDBs are well suited to address the issues that lead to ex-post re-contracting and project distress. By aligning, partnering, and working directly with firms, MDBs

can lower the risk of a project becoming distressed. Given their financial investment in the project, MDBs are actively involved in several phases of the project. They bring operational expertise, monitor and supervise projects, and provide assistance to deal with potential issues, including delays, cost over-runs, policy reforms that never take place, and coordination failures (Kilby, 2000). Recent evidence suggests that such actions can have a positive effect on project performance (Ika, 2015; Denizer, Kaufmann and Kraay, 2013). Further, MDB support "for private sector projects can be instrumental in mitigating risks associated with government policies and practices" (Buiter and Fries, 2002: 4). We identify two pathways through which MDB participation lowers project risk.

MDB operational assistance:

First, projects with MDB participation are more likely to undergo greater upfront review and development process, thereby lowering the likelihood of ex-post re-contracting and project failure. MDB staff draws on their sectoral and country expertise to negotiate financial and legal terms of the project documents. This ensures a more balanced allocation of risk and incorporates standard protection measures, such as for force majeure and dispute resolution. In the absence of a sector specific regulator, MDBs may incorporate the regulatory mechanisms for monitoring the operations of the public and private players within individual contracts (Yong, 2010). A survey of investors in African infrastructure projects, for example, indicates that they considered the IFC as a valuable partner because it engaged with governments to create a coherent regulatory framework (Castalia, 2011).[2] Similarly, the CEO of Scatec Solar – a Norwegian power company – noted that joining forces with the IFC to invest in renewable energy in West and Central Africa allowed the firm to "combine Scatec Solar's know-how in photovoltaic development, installation and operations with IFC's expertise in financing and working with governments" (Scatec Solar, 2012). Further, the MDB

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[2] We note that although MDB actions during project implementation are directed towards particular problems associated with the project, they may also impact broader institutional conditions. In this way, MDBs may also act as institutional intermediaries or non-market actors that not only support market transactions but also facilitate institution building (Khanna and Palepu, 2000; McDermott, Corredoira and Kruse, 2009; Dutt et al, 2015; Jandhyala and Phene, 2015).

appraisal and review process also critically examines the financial viability of the project and the MDB works with the private firm to improve the sustainability of the project. MDB backed projects may also require a social and environmental review to ensure that it conforms to established performance standards on issues such as labor and working conditions, health and safety, land acquisition, etc. For example, Azure Power – an Indian solar power service provider – sought IFC funding for its power projects across three Indian states. As stipulated by the MDB, the company put in place not only procedures for identifying social and environmental risks and impacts of its projects but also a plan to implement social and environmental management plan consistent with the IFC performance standards.[3] These safeguards ensure that project related grievances or complaints from affected parties are identified and addressed early in the project.

Second, MDBs can lower likelihood of project distress by intervening in the management of the project. As creditors and stockholders of the project, MDBs have adequate leverage to influence the behavior of the other participants in the project (George and Prabhu, 2000). In-house teams of the MDB not only provide operational assistance to the firms in meeting performance objectives but also track and monitor the technical parameters of the project. Further, MDBs can improve project performance through creating more stable secondary systems, for example, in ensuring supply material. Woodhouse (2005) notes that stresses on project performance in electricity generation – such as fuel supply, dispatch, and renegotiation – are lowered in projects with MDB participation.

MDB political assistance:

A second pathway by which MDB participation can lower the likelihood of project distress is by offering political assistance. MDB participation can make it politically costly for host governments to engage in ex-post re-contracting. When political, social, or financial cycles create disputes between host governments and firms, MDBs can play a significant role in negotiations and dispute resolution.

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[3] Azure Power project from the IFC Investment Projects database. Available at http://ifcext.ifc.org/ifcext/spiwebsite1.nsf/78e3b305216fcdba85257a8b0075079d/28040aa92be3d10c852576ba000e32a7?opendocument, accessed 22 February 2016

They have high bargaining power as they are involved in the financing of a large number of projects, provide financial aid, and have frequent interactions with governments (Hainz and Kleimeier, 2012). Prior studies indicate that this coercive role of multilateral agencies can influence policy adoption and re-negotiation in private projects (Polillo and Guillen, 2005; Zelner, Henisz and Holburn, 2009). In case of a dispute, MDBs are active in protecting their own financial interests through active negotiations, engaging local actors, and through other systems (Buiter and Fries, 2002). For example, the World Bank has rarely, if ever, had to pay out a claim under its political risk guarantee program, ostensibly because it relies on its 'halo effect' as the preferred creditor to put strong pressure on the government in order to obtain compliance (Deliott Touche Tohmatsu, 2004). Since the interest of MDBs and private firms can be closely tied, the risks faced by the firms are lower when MDBs participate in the project.[4]

Thus, MDBs not only bring in capital but also operational expertise as well as a capacity to engage in ways that purely private-sector players are unable, unwilling, or ill equipped to do on their own. Consequently, projects with MDBs as participants are likely to face lower project risk and are less likely to be distressed. However, to the extent that MDBs directly deal with host country governments, these organizations play a role different from that of the classical orchestrators described by Abbott et al (2015) who do not directly deal with targets. Nonetheless, orchestrators and the intermediaries together are better positioned to achieve shared goals than either of them independently. Thus, we propose

Hypothesis 1 – *An infrastructure project with private investment is less likely to be distressed when a MDB participates in it*.

Moderating role of country and project characteristics

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[4] A notable exception is the case of the World Bank backed Chad-Cameroon pipeline. Although the World Bank's diplomatic efforts were wide-ranging and intensive, including cutting off loans and freezing cash transfers, the Chad government nonetheless unilaterally revised the project agreement (see Gould and Winters, 2007 for a summary).

We argued above that MDB participation, and in particular operational assistance, can help alleviate some of the constraints arising from institutional settings of host countries – for example, through the lack of a well-developed regulatory system, weak rule of law, or a poor investment profile. Prior research has shown, however, that as countries develop stronger institutions, firm strategies based on non-market actors are less important (Li, Park and Li, 2004; Inoue, Lazzarini and Musacchio, 2013; Dutt et al, 2015). In countries with well-developed rule of law, for example, dispute resolution systems are well established and may not have to be explicitly written into contracts. An independent and effective regulatory body may act as a check against ex-post arbitrary policy change by other government actors. Greater the state capacity – or the ability of state institutions to effectively implement official goals – the more likely are adopted government policies effectively implemented (Guillen and Capron, 2016). Indeed, investors in African infrastructure projects noted that when states had developed a supporting legal and regulatory system, they were more attractive for investment (Castalia, 2011). Empirical studies of FDI in infrastructure projects find that in countries with strong institutional development foreign investors are more likely to make major commitments in large-scale projects (Kirkpatrick, Parker and Zhang, 2006). Studies of the telecommunications industry suggest that private investments are associated with greater benefits when there are effective regulatory regimes in the host country (Wallsten, 2001).

The institutional characteristics of the host country lower the added value of MDB participation in in establishing standards, laws, and regulations. In other words, the greater the host country's institutional development, the less firms need to rely on the operational assistance of the MDB in developing stronger projects. Consequently, as a host country's institutional environment develops, the positive effect of MDB participation should decline. Thus, we hypothesize that

H2: Host country institutional development moderates the relationship between MDB participation and project distress such that the effect of MDB participation on the likelihood of project distress is stronger in in host countries with weaker institutional systems.

We also argued that MDB participation lowers risk of project distress because of the leverage of multilateral actors bring to negotiations in case of a dispute, i.e. through political assistance. It has been documented that countries dependent on powerful multilateral actors are more likely to adopt policies, structures or activities advocated by those actors (Meyer et al, 1997). In the cross-national context, scholars have shown that coercive effects of multilateral agencies are particularly strong when countries depend upon these agencies for vital resources (Henisz, Zelner and Guillen, 2005; Polillo and Guillen, 2005). Biglaiser, Lee and Staats (2015) note that host countries who received IMF funding or were frequent borrowers from the fund were less likely to undertake ex-post re-contracting with foreign investors as they were particularly sensitive to the potential for future funding to be cut off.

In a similar vein, we argue that MDBs are likely to be more effective in negotiating on behalf of private investors in countries where the extent of the host country's multilateral debt is higher. In these instances, host governments fear financial repercussions of challenging MDB negotiation positions and MDBs can effectively link the dispute at hand with access to future resources. In other words, multilateral debt allows MDBs to gain greater bargaining leverage with host governments. Thus, we propose that

H3: Host country multilateral debt moderates the relationship between MDB participation and project distress such that the effect of MDB participation on the likelihood of project distress is stronger in host countries with greater debt.

Empirical analysis

Data and sample

To test the hypotheses, we draw on the World Bank's Private Participation in Infrastructure Projects database (http://ppi.worldbank.org/). This database records information about private investment in the energy, telecommunications, transportation, and water sectors and covers low- and middle-

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income countries. Data are compiled from publicly available information sources such as major news agencies, databases, and government websites. A project is included in the database when it reaches financial or contractual closure. Although this database does not capture every private investment – those involving local and small-scale operators are likely to be omitted – it has the most comprehensive coverage of private investments in developing countries. Thus, we rely on this database for the analysis.

Our unit of analysis is an infrastructure project. For each project, we identify the year in which the project achieved financial closure, the host country for project implementation, the private sector sponsors, the size of the financial investment in the project, the type of private participation, the sector of investment, participation of an MDB, and if the project faced distress in subsequent years. We complemented these data with host country characteristics. We excluded projects that were located in multiple countries and those for which the status of the project was unavailable. We also omitted projects that were re-awarded following a cancellation or conclusion, were merged with other projects, or were otherwise renewed. Although the World Bank database tracks investments from 1984 to the present, we focus on the period 1995-2009 in order to exclude the major political and economic transitions during late 1980s-early 1990s and to allow sufficient time after financial closure to observe the status of the project.[5] After accounting for missing data, the final sample consisted of 2117 private infrastructure projects that reached financial closure between the years 1995 and 2009. These investments were located in 45 developing countries. Table 1 lists the countries with the number of private infrastructure projects in each and Table 2 indicates the number of projects that were launched (i.e. reached financial closure) during each year of our sample time period.

Measures

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[5] Industry experts and the World Bank infrastructure team estimate that project distress is typically observed within the first 3-4 years after financial closure. We accessed and downloaded the data up to 2013 from the World Bank database in October 2014.

Dependent variable

For each project, the database tracks the progress through the life of the project and reports the most current status in the project status field. Our dependent variable, *project distress*, is coded using this project status data. It is a dummy that takes the value 1 if a project has faced significant challenges and has not been completed as contracted.

We code a project as being distressed if one of the following two conditions is present. First, the private sector players may have completely exited the project before fulfilling contract terms or while a significant period of the license or concession remaining (15% or more). The private players exit by selling or transferring economic interest back to the government, remove all management and personnel from the project, cease operation, service provision or construction, or initiate formal dispute resolution through international arbitration. Second, the contract may be terminated by the host government in response to perceived contract violations by the private sector firms (eg: poor or inadequate service) or due to other political, economic and social pressures.

The dependent variable is coded 0 if the project was concluded at the end of the contract period or if the project started providing services to the public and was deemed operational. Approximately 8% of the projects in the sample are coded as distressed.

Two caveats are relevant in the construction of our dependent variable. First, our dependent variable measures project distress rather than contract renegotiations. In other words, we code a project as being distressed only when it is not completed as contracted and the private sector player exits from the contract. We do not consider contract renegotiations – which may include price reductions to private players, reallocation of government resources, or other forms of intervention such as stipulating the use of a particular form of fuel – as project distress as long as the renegotiated agreement is acceptable enough that the private sector player continues to run and operate the project. In this sense, our coding of project distress is conservative. This distinction is

also important in comparing the incidence of project distress we observe (8%) with prior studies documenting renegotiation rates of 20-60% (see Zelner et al, 2009; Wells and Ahmed, 2007).

Second, we capture the current distress at the project level, rather than historical project-year level. In other words, the database only allows us to determine if a given project is distressed at the time of accessing the data. If, however, the project faced significant challenges in the intervening years since financial closure, but these issues have since been resolved, the database would not allow us to observe this. In such cases, our coding of the project distress variable would correspond to 0. This suggests that the time since start of the project could have an effect on our findings and projects started in more recent years are more likely to be coded as distressed. Thus, we control for the year in which the project achieved financial closure in our empirical analysis.

Independent variable

The main independent variable, *MDB participation*, is a dummy that captures financial support by a MDB for the project.[6] The types of financial support include equity or quasi-equity investment, political risk or partial credit guarantees, loans, risk management products like derivatives, options, or forwards, and syndication where MDB is the lender-of-record. A single project can be supported by multiple MDBs and several financial instruments; the average project with MDB participation receives support from 1.3 MDBs and has 1.6 different instruments. The variable *MDB participation* takes a value of 1 in about 14% of the sample.

Moderators

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[6] The MDBs covered include Asian Development Bank (ADB), African Development Bank (AFDB), Central American Bank for Economic Integration (BCIE), West African Development Bank (BOAD), Corporacion Andina de Fomento (CAF), Southern Africa Development Bank (DBSA), East Africa Development Bank (EADB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Inter-American Development Bank (IADB), International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), Inter-American Investment Corporation (IAIC), Islamic Development Bank (IDB), and the Multilateral Investment Guarantee Agency (MIGA).

The first moderator captures the host country's institutional development. Following prior literature (Doh, Bunyaratavej and Hahn, 2009; Click and Weiner, 2010), we used the composite political risk data from the International Country Risk Guide (ICRG) (PRS Group, 2009). Data on political, financial, and economic factors are compiled to present a composite *institutional development index* ranging from 0 to 100.[7] A higher value on this index indicates stronger institutional development.

The second moderator is the host country's multilateral debt. We measure this as *multilateral debt as a percentage of total external debt* of a host country. The data are from the World Bank's World Development Indicators.

Control variables

We include controls at the project, sector, and country levels corresponding to the year in which the project achieved financial closure. The control variables are drawn from the World Bank's Private Participation in Infrastructure Projects database, except where indicated.

At the project level, we note that although a majority of the projects in our sample have only a single firm as a sponsor (private or state-owned enterprise with at least 15% equity participation), about 30% of the projects include 2 or more firms. The presence of multiple firms on a single project can present divergent goals that may increase the risk of project distress. Alternately, diverse interests may increase the probability of reaching a settlement in case of a dispute with the host government as it provides flexibility in negotiations (Post and Murillo, 2014). We control for this through a dummy variable, *multiple sponsors*. We next include the total *cross-border sponsors* in the project as prior literature on the liability of foreignness suggests that foreign-owned and operated projects may be more likely to face political risks (Zaheer, 1995). A project sponsor is considered to be foreign if its home country is different from the country where the project is to be implemented.

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[7] The components of this index include government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucratic quality.

Since the size of the project is likely to have an influence on its success, we include the *total financial commitment* to the project as the log value of the amount the project company commits to invest in physical assets for the project. We next control for whether the project received any financial support from the host government through payments or guarantees for payment, debt, revenue, exchange rate, construction cost, or interest rate using a dummy – *government support*. The expected sign on this control variable is not clear; host governments may be less likely to expropriate projects in which they invest, but may also be more likely to provide financial guarantees in particularly risky projects where it might otherwise be hard to attract private investors.

We also control for whether the *project company is publicly traded* or not. Publicly listed companies may face lower expropriation risks as host governments may be less likely to undertake asset value decreasing policy changes if domestic voters and audiences may be negatively affected (Delios & Henisz, 2000). Through a series of dummy variables, we also capture the type of private participation in the infrastructure project – concession (omitted), divestiture, greenfield, and management and lease control.

At the sector-level, we control for the infrastructure sector in which receives the investment – energy (omitted), telecommunications, transportation, and water.

At the host country level, we include the log of the host country's per capita GDP (*ln(GDP/C)*), *GDP growth*, and the net inflows of foreign direct investment as a percentage of GDP *(FDI/GDP)* as economic characteristics may have a likelihood on project distress. These data are obtained from the World Development Indicators database.

We indicated above that projects with financial closure in more recent years could face higher incidence of project distress due to the nature of the coding in the database. Thus, we include year dummies capturing the year of the project's financial closure. Finally, projects in the same host

country could share particular risks of distress arising from unobservable country level factors. Thus, we include country dummies in our analysis.

Methods

As indicated above, our unit of analysis is the infrastructure project and our dependent variable is a categorical variable capturing whether the project was distressed. Consequently, we present the main results using a logit model. In addition, we account for selection biases and determine the treatment effect of MDB participation on project distress using a propensity score matching technique in robustness tests. Other tests with different model specifications are also presented in the robustness section.

<p align="center">Results</p>

Table 3 presents the summary and correlation statistics for the variables used in the estimation. The main results are reported in Table 4. Model 1 includes all the control variables in the analysis. Models 2-6 include the main independent variable – MDB participation.

Examining the control variables, we find, as expected, projects with cross-border sponsors are more likely to be distressed. Larger projects, or those with greater financial commitments, tend to have a higher likelihood of project distress. Government supported projects are also more likely to be distressed, suggesting that such support may directed to particularly risky projects. While the type of private participation does not appear to influence the likelihood of project distress, there appears to be significant variation across sectors. In particular, projects in the water/sewerage sectors are more likely to be distressed compared to energy projects. Projects in fast growing countries are also more likely to be distressed, although this effect is weak.

Turning to the main effect of MDB participation, we find the coefficient of this variable to be negative and statistically significant in Model 2. This suggests that MDB participation is associated with a lower likelihood of project distress. The magnitude of the coefficient suggests that the ratio of

the odds for projects with MDB participation to the odds for non-supported projects to face distress is 0.5 (=exp(-0.697)). In other words, the odds of project distress for projects with MDB participation are about 50% lower than corresponding odds for projects without MDB participation. Thus, we find support for H1.

We note that projects in China, Brazil, and India dominate our sample. Thus, in Models 3-5, we exclude the projects in each of these three host countries by turn. We find the results to be consistent. Next, we exclude the telecommunications sector from the sample. This is because the telecommunications sector represents the smallest one in the sample (about 9% of projects). In addition, unlike projects in other sectors, telecommunication networks are usually nationally integrated and represent a single national system. In Model 6, the coefficient of MDB participation has similar sign and magnitude as Model 2, and the effect is significant.

Next we turn to examining the proposed interaction effects. These results are reported in Table 5. In Model 7, we include the interaction of MDB participation with host country institutional development (higher values on this index indicate stronger development). As hypothesized, this interaction is positive and significant, suggesting that the beneficial effect of MDB participation on project distress is weakened in countries with greater institutional development. Following Brambor, Clark & Golder (2006), we examine the marginal effect of MDB participation and the corresponding standard errors for different levels of host country political risk scores. We find that the average marginal effect of MDB participation on project distress decreases as the host country's institutional development is stronger, and this effect is significant in approximately 90% of the sample (at the lower end of institutional development). We graph this effect, along with the 95% confidence intervals, in Figure 1. To quantify the interaction effects, we find that MDB participation in projects located in host countries with mean level of institutional development lowers the likelihood of project distress by approximately 39% (holding other variables at their mean values). However, MDB participation lowers the likelihood of project distress of about 13% when host country institutional

development is high (1 standard deviation above its mean value). We also split the sample into projects located in host countries with high (above sample mean) and low (below sample mean) institutional development and report these split sample regressions in Models 8 and 9 respectively. Consistent with Model 7, we find that MDB participation has no significant effect in the sample of countries with strong institutional development (Model 8), but an expected negative and significant effect in the sample of countries with weak institutional development (Model 9). Together, these models provide support for H2.

In Model 10, we include the interaction of MDB participation with host country multilateral debt. Although this interaction is negative, as expected, it is not significant at conventional levels. Examining the marginal effects, we find that the average marginal effect of MDB participation on project distress increases as the host country's multilateral debt increases. However, this effect is weakly significant only in approximately 25% of the sample representing the higher end of multilateral debt. We graph this effect, along with the 95% confidence intervals, in Figure 2. MDB participation in projects located in host countries with mean level of multilateral debt results in a decrease in project distress of approximately 33% (holding other variables including at their mean values). However, MDB participation is associated with a decrease in project distress of about 48% when host country multilateral debt is high (1 standard deviation above the mean in this measure). We also split the sample into projects in Low multilateral debt countries (below sample mean) and High multilateral debt countries (above sample mean) and report these split sample regressions in Models 11 and 12 respectively. We find that MDB participation has an expected negative and significant effect in countries with high multilateral debt (Model 12), but no significant effect in countries with low multilateral debt (Model 11). Together, we take these models provide partial support for H3.

Finally, in Model 13, we include the full model and find the results to be similar to those described above.

Robustness tests:

Selection effects

An alternate explanation for the negative effect of MDB participation on project distress may be that MDBs are better able to choose low risk projects ex-ante, as opposed to bringing additional value to the projects they participate in. We can think of these two roles of MDBs respectively as that of a 'scout' or a 'coach', borrowing the terminology from Baum & Silverman (2004) who make a similar analogy in the case of venture capital backed start up performance.

While it is not entirely evident which of these mechanisms is at play, Buiter and Fries (2002) provide some insight into project selection by MDBs. They note that MDB participation is typically centered on projects that meet two criteria. First, returns to private investment are strongly dependent on government policies and practices. Second, the projects have scope for structuring the terms and conditions of the investment such that it strengthens the functioning of markets or improves governance and business practices – such as in transition economies or countries where the economy and institutions are undergoing significant change. Using these criteria, it appears that MDBs may be choosing projects with *higher* ex-ante risk, not lower. Empirical results corroborate this idea; MDBs are more likely to participate in projects where political risk is higher (Hainz and Kleimeier, 2012). Thus, this bias may potentially makes it harder to find the hypothesized effect of MDB participation. In addition, although MDBs have multiple objectives, at least one goal is to continue lending money that is available (Dreher, 2004). Consequently, donors continue to provide aid or loans even when recipients do not meet targets (Svensson, 2000). In some MDBs like the World Bank, bureaucratic pressures have given rise to a lending culture where staff promotion opportunities and resource allocations reflect loan officers meeting lending targets rather than results on the ground (Thomas, 2004; Dreher, 2004). Given these incentives, loan officers' subjective assessment of project quality may induce them to invest in a wide range of projects rather than selecting on low risk projects. Further, by providing financial assistance, MDBs may also achieve

another of their objectives – they can get a place at the table to discuss policy matters (Thomas, 2004). Finally, prior studies on national development banks – who share many objectives and capabilities of MDBs – suggest that they do not preferentially direct their investments to better performing firms (Inoue, Lazzarini and Musacchio, 2013).

Nonetheless, it is difficult to dismiss the selection hypothesis entirely. At a recent energy conference, the IFC indicated that its criteria for investment in power projects include a supportive country environment and legal framework, well structured and clear regulatory and contractual framework, committed and experienced investors, operators, and developers, a robust financial structure, a good business case, and control of construction costs (IFC, 2013). All these characteristics seem to suggest that the IFC seeks to invest in projects with low risk of project distress. MDBs did not invest in a water project in Lagos, Nigeria although several proposals have been made from the late 1990s as they were unable to agree with local authorities on how to satisfy corporate demands, raise capital, and convince the Nigerian public that private international companies would not make unreasonable profits from the sale of water (Vidal, 2015). On the other hand, the executive director of one of Ghana's largest banks notes that the IFC's attractive loans to multinational companies "crowd out local banks and private-equity firms by taking the juiciest investments and walking away with a healthy return" (Brettonwoods Project, 2013).

To effectively determine if the 'coach' role of MDBs drives project performance, we need to construct reliable comparison groups between projects with and without MDB participation. In other words, the ideal comparison is between a project with MDB participation and the *same* project without MDB participation. While it is impossible to observe counterfactual circumstances, we could ask if projects that differ on MDB participation, but are otherwise similar on a set of observable project characteristics, show different rates of project distress. A propensity score matching methodology allows us to achieve this objective (Rosenbaum and Rubin, 1983). The propensity score for a project i is the conditional probability that i is treated (MDB participation), given the project's

vector of observable covariates. The intuition behind this approach is that if assignment to treatment is captured by the observed covariates, then the propensity score can be used to create a matched sample in which assignment to treatment is effectively random conditional on observables, thus approximating a controlled experiment. In our study, the treatment group consists of projects with MDB participation and the control group consists of projects without MDB participation, even though the ex-ante likelihood of those projects having MDB participation, i.e. their propensity scores, are nearly identical to the projects in the treatment group.

We first calculate the predicted probability of treatment, i.e. a project receiving MDB participation, using a probit estimation. We calculated the propensity score using variables reflecting the selection criteria for MDB participation listed above and which are not affected by treatment (i.e. are fixed over time or are measured before MDB participation). Specifically, we include project-level characteristics (multiple sponsors, cross-border sponsors, total financial commitment, government support, publicly traded project company, and PPI type), sector dummies, host country risk characteristics (log of per capita GDP, GDP growth, FDI/GDP, institutional development, and multilateral debt), and country and year dummies. The probit model with dependent variable as MDB participation is shown in Table 6. We then match projects with MDB participation to those without MDB participation based on these criteria using the STATA command psmatch2 (Leuven and Sianesi, 2003). The procedure generates matches for 296 of the 297 projects with MDB participation. In Table 7, we report the average effect of MDB participation on project distress for both the unmatched sample and the matched samples. The average effect of the treatment on the treated (ATT) indicates that the likelihood of project distress is significantly lower for the treated group compared to the control group in the matched sample. This provides further evidence that our main finding that MDB participation lowers the likelihood on project distress is not driven purely by selection.

It is also critical to assess how well the propensity score matching procedure creates comparable samples between the treatment and control groups. Thus we perform balancing tests to ensure that projects in the treatment and control groups were not statistically different from each other prior to the treatment. The mean values of the two sub-samples, along with t-tests of difference between means and bias are reported in Table 8. We find that the treatment and control groups to be similar with no variable having a significant difference in sample means. The mean bias is also low, at 3.7, and the standardized biases for the unmatched and matched groups are plotted in Figure 3. These tests provide confidence that our matching process resulted in treatment and control groups that are similar in observable characteristics.

Finally, we also run an additional regression model on our matched sample. In Model 15 (Table 9), we report logit models of project distress using the matched sample.[8] We find the effect of MDB participation to be negative, significant, and have a similar magnitude as the results reported in Table 4. However, we interpret the findings from this model cautiously as the matched sample is based on propensity scores that are estimated, and not known.

Other robustness tests

Table 9 includes a series of other robustness tests. Since infrastructure projects in our sample are grouped into 45 countries, the probability of distress may be more similar for projects within a specific country than across countries. Thus, Models 16 and 17 present results from a multi-level estimation (using the Stata function melogit) where projects are nested in host countries. The results from these models are consistent with those reported earlier.

Next, we use an alternate measure of MDB participation. In model 18, we include the number of MDBs involved in a project. The results are robust to the alternate measure of MDB participation.

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[8] As noted above, our matched sample consists of 296 treated and a similar number of untreated projects. After accounting for missing data on some of the predictors of project distress, our final sample in this model consists of 509 observations.

Finally, we note that the effectiveness of MDB participation in private infrastructure projects may depend on their own experience. In particular, MDBs have developed better mechanisms to assist private infrastructure investors following their strategies of limited success in surviving the political upheaval during the Asian financial crisis of the late 1990s and the Argentine crisis during the early years of the next decade. Thus, we examine whether MDB participation has a different effect in two sub-samples – projects that achieved financial closure during or prior to 2002 (pre-2002, Model 19) and those that achieved financial closure after (post-2002, Model 20). Consistent with our expectation, MDB participation had a greater effect on project distress in the latter period (chi2 = 2.94; p = 0.086).

Discussion

Although world polity literature has long considered IOs to be important global actors in influencing state behavior, the primary assumption has been that primary influence of IOs is on state policy. Governments either adopt policies and practices or refrain from doing so in direct response to coercive and legitimation pressures of IOs. In this paper, we explore an alternate mechanism by which IOs act – by partnering with firms, they have an additional pathway to not only influencing policy makers, but also impacting firms' outcomes. In the context of private infrastructure investments, we show that projects with MDB support are less likely to be distressed. We argue that MDBs are effective because they are able to provide important operational and political assistance. Moderating effects of country level characteristics offer support for these mechanisms, and suggest that operational assistance may play a greater role in MDB effectiveness.

The expanded role of IOs is consistent with the idea of orchestration identified by Abbott et al (2015) whereby IOs enlist intermediary actors on a voluntary basis and provide them with ideational and material support in order to target actors in pursuit of IO governance goals. However, the mechanisms described here are also different in some ways. First, in Abbott et al's (2015) analysis, firms are typically targets whose behavior is to be monitored, although they acknowledge that firms

may also be intermediaries. We explicitly examine how IOs can partner with firms to achieve their governance objectives; thus firms are intermediaries. Abbott et al (2015) also assume that by orchestrating, the IO has no immediate link to the target. Rather, only the intermediary directly addresses the target. However, we document how IOs and firms work together to address the target – in this case the state – to push for more credible property rights.

The findings also contribute to the growing literature on open system intermediaries (Dutt et al, 2015; Mair, Marti and Ventresca, 2012; Kistruck, Beamish, Qureshi and Sutter, 2013). Like business incubators, social intermediaries, and other organizations discussed in this literature, MDBs do not seek to fully appropriate the benefits they provide by partnering with private investors. Their multiple goals, including development objectives, institution building, and private sector support, suggest that MDB supported projects can be considered truly successful only when they are also able to benefit unaffiliated private investors through the development of laws, regulations, norms, and markets.

The context of infrastructure investment also provides a powerful setting to examine the partnership between firms and IO. Prior studies both in the practitioner and academic literatures have argued that property rights guarantees in the transaction, bureaucratic quality, and the strength of political systems play a significant role in promoting private infrastructure investment (Banerjee, Oetzel & Ranganathan, 2006; KPMG, 2010). In practice, this has implied that developed countries will receive greater private investment as factors like rule of law have a glacial pace of change. Yet, the need for private investment is likely to be particularly high in precisely those countries where property rights or bureaucratic quality are not well developed. Thus, understanding alternate mechanism to manage the varying interests of governments and investors is important. In particular, managerially relevant factors – aspects of the investment that managers can control during the initial or operational phases – like the joint participation of MDBs and firms can be a powerful factor for project success.

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Table 1 – Low and middle income countries in the sample

	Country	# projects (1995-2009)		Country	# projects (1995-2009)
1	Albania	8	24	Madagascar	8
2	Argentina	70	25	Malawi	4
3	Azerbaijan	6	26	Malaysia	44
4	Bangladesh	24	27	Mexico	122
5	Bolivia	24	28	Mozambique	8
6	Brazil	406	29	Nigeria	39
7	China	452	30	Pakistan	51
8	Colombia	64	31	Panama	19
9	Congo, Dem. Rep.	4	32	Peru	46
10	Congo, Rep.	6	33	Philippines	55
11	Costa Rica	23	34	Romania	21
12	Cote d'Ivoire	10	35	Senegal	7
13	Dominican Republic	20	36	Serbia	4
14	Ecuador	17	37	Tanzania	17
15	Gabon	4	38	Thailand	59
16	Ghana	9	39	Togo	3
17	Guatemala	21	40	Uganda	15
18	Guinea	7	41	Ukraine	10
19	Haiti	5	42	Venezuela, RB	8
20	India	284	43	Vietnam	27
21	Indonesia	55	44	Yemen, Rep.	6
22	Jordan	8	45	Zambia	5
23	Kazakhstan	12		Total	2117

Table 2: Project distribution over time

Year	# projects
1995	132
1996	179
1997	220
1998	169
1999	115
2000	125
2001	120
2002	138
2003	142
2004	97
2005	132
2006	169
2007	137
2008	120
2009	122
Total	2,117

Table 3 – Summary statistics and correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Mean	0.08	0.14	64.31	17.91	0.32	0.64	4.18	0.11	0.02	0.31	0.06	0.62	0.01	0.46	0.09	0.30	0.15	7.52	5.58	3.19
	SD	0.27	0.35	8.61	14.28	0.47	0.71	1.86	0.31	0.15	0.46	0.23	0.48	0.07	0.50	0.28	0.46	0.35	0.89	3.91	2.19
	Min	0	0	0	0.37	0	0	-3.51	0	0	0	0	0	0	0	0	0	0	5.31	-13.13	-3.36
	Max	1	1	81.25	88.63	1	6	10.12	1	1	1	1	1	1	1	1	1	1	9.02	34.50	22.86
1	Project distress	1																			
2	MDB participation	0.01	1																		
3	Institutional development	-0.03	-0.05	1																	
4	Multilateral debt	0.08	0.17	-0.38	1																
5	Multiple sponsors	0.03	0.12	0.00	0.01	1															
6	Cross-border sponsors	0.10	0.22	-0.01	0.11	0.36	1														
7	Total financial commitment	0.05	0.24	-0.04	-0.02	0.20	0.21	1													
8	Government support	0.00	-0.02	-0.06	0.05	0.03	-0.09	-0.02	1												
9	Project company publicly traded	-0.03	0.09	-0.07	0.03	-0.02	0.02	0.17	-0.04	1											
10	PPI type: Concession	0.05	-0.06	0.02	-0.09	0.09	-0.07	-0.06	0.15	-0.05	1										
11	PPI type: Divestiture	0.07	0.05	-0.12	0.05	-0.08	0.03	0.08	-0.06	0.28	-0.17	1									
12	PPI type: Greenfield	-0.08	0.04	0.04	0.06	-0.05	0.05	0.03	-0.12	-0.08	-0.87	-0.32	1								
13	PPI type: Management & lease	0.00	0.01	-0.02	0.03	0.01	0.03	-0.09	0.02	-0.01	-0.05	-0.02	-0.09	1							
14	Sector: Energy	-0.08	0.07	0.02	0.03	-0.07	0.03	0.03	-0.19	-0.02	-0.49	0.11	0.43	-0.07	1						
15	Sector: Telecom	0.10	0.06	-0.21	0.23	-0.02	0.11	0.27	-0.09	0.15	-0.19	0.12	0.13	-0.02	-0.29	1					
16	Sector: Transport	-0.03	-0.07	0.03	-0.04	0.09	-0.10	0.03	0.13	-0.03	0.49	-0.13	-0.41	0.01	-0.61	-0.20	1				
17	Sector: Water & sewerage	0.07	-0.07	0.09	-0.17	0.00	0.00	-0.30	0.17	-0.05	0.21	-0.08	-0.17	0.10	-0.38	-0.13	-0.27	1			
18	ln(GDP/C)	-0.03	0.00	0.39	-0.62	0.08	-0.05	0.07	-0.07	-0.02	0.08	0.02	-0.08	-0.01	0.05	-0.17	-0.05	0.12	1		
19	GDP growth	-0.03	-0.14	0.17	0.04	-0.16	-0.02	-0.20	0.09	-0.04	-0.07	-0.03	0.09	-0.02	-0.03	-0.10	0.02	0.10	-0.37	1	
20	FDI/GDP	0.09	0.03	0.09	-0.07	-0.02	0.16	0.01	-0.07	-0.03	0.00	0.13	-0.06	-0.01	-0.04	0.08	-0.05	0.06	0.07	0.16	1

Table 4 – Logit models of distress of private participation in infrastructure (PPI) projects
Dependent variable is project distress

	-1-	-2-	-3- No China	-4- No Brazil	-5- No India	-6- No Telecom
MDB participation		-0.697*	-0.585*	-0.870**	-0.683*	-0.748*
		(0.281)	(0.287)	(0.302)	(0.283)	(0.341)
Multiple sponsors	-0.333	-0.313	-0.289	-0.209	-0.32	-0.489+
	(0.223)	(0.224)	(0.238)	(0.242)	(0.228)	(0.261)
Cross border sponsors	0.359*	0.384**	0.356*	0.345*	0.290+	0.351*
	(0.148)	(0.148)	(0.158)	(0.161)	(0.152)	(0.165)
Total financial commitment	0.072	0.111+	0.115+	0.097	0.126*	0.256**
	(0.059)	(0.061)	(0.065)	(0.068)	(0.063)	(0.078)
Government support	0.900*	0.943**	0.07	0.845*	1.042**	0.784*
	(0.353)	(0.354)	(0.457)	(0.361)	(0.377)	(0.386)
Project company publicly traded	-1.308	-1.156	-1.172	-1.008	-0.94	-0.281
	(0.805)	(0.798)	(0.807)	(0.816)	(0.810)	(0.852)
PPI type: Divestiture	0.275	0.235	0.157	-0.024	0.188	0.979+
	(0.415)	(0.416)	(0.440)	(0.440)	(0.427)	(0.535)
PPI type: Greenfield	-0.354	-0.324	-0.492+	-0.641*	-0.311	0.12
	(0.245)	(0.245)	(0.287)	(0.260)	(0.252)	(0.277)
PPI type: Management & lease contract	-0.71	-0.57	-0.463	-0.737	-0.586	0.379
	(1.215)	(1.203)	(1.193)	(1.246)	(1.208)	(1.315)
Sector: Telecom	0.331	0.262	0.371	0.441	0.064	
	(0.335)	(0.338)	(0.347)	(0.350)	(0.351)	
Sector: Transport	0.2	0.207	0.268	0.174	0.373	0.540+
	(0.284)	(0.285)	(0.318)	(0.312)	(0.292)	(0.317)
Sector: Water/Sewerage	1.151**	1.205**	1.194**	1.439**	1.262**	1.643**
	(0.315)	(0.316)	(0.376)	(0.350)	(0.323)	(0.359)
ln(GDP/C)	-0.021	0.029	3.258+	0.037	0.063	-1.122
	(0.968)	(0.976)	(1.745)	(1.013)	(0.975)	(1.234)
GDP growth (annual %)	0.069+	0.067+	0.053	0.065+	0.057	0.101*
	(0.036)	(0.036)	(0.037)	(0.037)	(0.036)	(0.047)
Institutional development	-0.018	-0.018	-0.03	-0.014	-0.019	-0.042
	(0.019)	(0.019)	(0.020)	(0.019)	(0.019)	(0.036)
FDI/GDP	0.018	0.022	0.002	0.013	0.026	0.108
	(0.052)	(0.053)	(0.054)	(0.055)	(0.053)	(0.082)
Multilateral debt (% of total external debt)	0.022	0.022	0.013	0.023	0.016	0.018
	(0.017)	(0.017)	(0.016)	(0.017)	(0.018)	(0.023)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-2.789	-3.332	-30.649*	-3.494	-3.496	7.027
	(8.406)	(8.466)	(14.924)	(8.778)	(8.444)	(10.585)
Number of observations	2,117.00	2,117.00	1,665.00	1,711.00	1,833.00	1,664.00
Log likelihood	-462.48	-459.2	-375.91	-396.36	-431.64	-332.26
Chi2	273.04	279.6	242.39	265.58	250.59	267.52

Note: Standard errors in parentheses
+ p<0.1, * p<0.05, ** p<0.01

Table 5: Logit models with effects of political risk and country debt
Dependent variable is project distress

	-7-	-8- Institutional development high	-9- Institutional development Low	-10-	-11- Multilateral debt Low	-12- Multilateral debt High	-13- Full Model
MDB participation	-4.307*	-0.5	-1.261*	-0.074	-0.341	-1.527**	-3.400+
	(1.719)	(0.378)	(0.508)	(0.466)	(0.380)	(0.512)	(1.799)
MDB participation * Institutional development	0.057*						0.050+
	(0.026)						(0.026)
MDB participation * Multilateral debt				-0.025			-0.019
				(0.016)			(0.016)
Institutional development	-0.037+	-0.089	-0.049	-0.019	0.004	0.001	-0.036+
	(0.021)	(0.062)	(0.035)	(0.019)	(0.030)	(0.035)	(0.021)
Multilateral debt (% of total external debt)	0.022	0.009	0.018	0.026	0.104	0.011	0.025
	(0.017)	(0.042)	(0.020)	(0.017)	(0.078)	(0.033)	(0.017)
Multiple sponsors	-0.324	-0.11	-0.963*	-0.296	-0.493+	-0.078	-0.313
	(0.225)	(0.299)	(0.430)	(0.224)	(0.283)	(0.498)	(0.226)
Cross-border sponsors	0.404**	0.351+	0.587*	0.375*	0.162	0.825*	0.396**
	(0.149)	(0.198)	(0.279)	(0.148)	(0.189)	(0.327)	(0.149)
Total financial commitment	0.108+	0.12	0.084	0.115+	0.170*	-0.031	0.112+
	(0.061)	(0.082)	(0.103)	(0.061)	(0.077)	(0.123)	(0.061)
Government support	0.956**	1.354**	0.685	0.934**	1.620**	-0.739	0.950**
	(0.355)	(0.502)	(0.611)	(0.354)	(0.442)	(0.928)	(0.355)
Project company publicly traded	-1.035	-1.423	-0.402	-1.182	-1.666	-0.536	-1.053
	(0.803)	(1.153)	(1.198)	(0.801)	(1.126)	(1.327)	(0.806)
PPI type: Divestiture	0.203	0.339	-0.617	0.235	-0.525	-0.563	0.201
	(0.420)	(0.590)	(0.758)	(0.417)	(0.752)	(0.785)	(0.421)
PPI type: Greenfield	-0.315	-0.332	-0.065	-0.335	0.112	-2.069**	-0.324
	(0.246)	(0.297)	(0.516)	(0.245)	(0.292)	(0.624)	(0.246)
PPI type: Management & lease contract	-0.487		-0.228	-0.437		-1.557	-0.391
	(1.198)		(1.297)	(1.196)		(1.773)	(1.192)
Sector: Telecom	0.305	0.797	-0.114	0.238	0.727	0.625	0.29
	(0.341)	(0.491)	(0.563)	(0.339)	(0.490)	(0.578)	(0.342)
Sector: Transport	0.224	0.636+	-0.275	0.191	0.408	-0.567	0.211
	(0.285)	(0.369)	(0.562)	(0.284)	(0.349)	(0.661)	(0.285)
Sector: Water/Sewerage	1.207**	1.655**	0.859	1.210**	1.377**	2.349*	1.214**
	(0.317)	(0.412)	(0.653)	(0.316)	(0.365)	(1.154)	(0.317)
ln(GDP/C)	0.051	-0.635	3.098	0.012	0.089	-0.906	0.038
	(0.987)	(1.490)	(2.512)	(0.982)	(1.402)	(2.846)	(0.990)
GDP growth (annual %)	0.063+	0.078	0.163+	0.069+	0.088+	0.024	0.065+
	(0.036)	(0.054)	(0.097)	(0.036)	(0.048)	(0.080)	(0.036)
FDI/GDP	0.03	0.129	-0.052	0.019	0.024	-0.026	0.027
	(0.053)	(0.114)	(0.081)	(0.053)	(0.081)	(0.112)	(0.053)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-2.268	6.696	-22.979	-3.227	-7.018	4.226	-2.316
	(8.543)	(12.830)	(17.067)	(8.513)	(12.464)	(18.950)	(8.571)
Number of observations	2,117.00	1,229.00	831	2,117.00	1,435.00	621	2,117.00
Log likelihood	-456.34	-253.52	-170.05	-457.9	-289.11	-127.29	-455.58
Chi2	285.32	200.8	130.6	282.2	173.05	170.28	286.84

Note: Standard errors in parentheses

+ p<0.1, * p<0.05, ** p<0.01

Figure 1: Interaction effect of MDB participation and country political risk (Model 7)
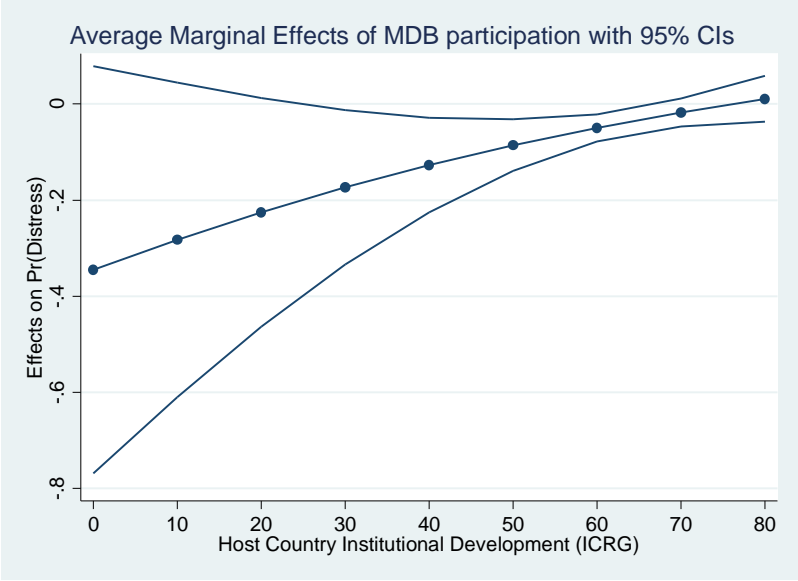

Average Marginal Effects of MDB participation with 95% CIs

Figure 2: Interaction effect of MDB participation and country multilateral debt (Model 10)

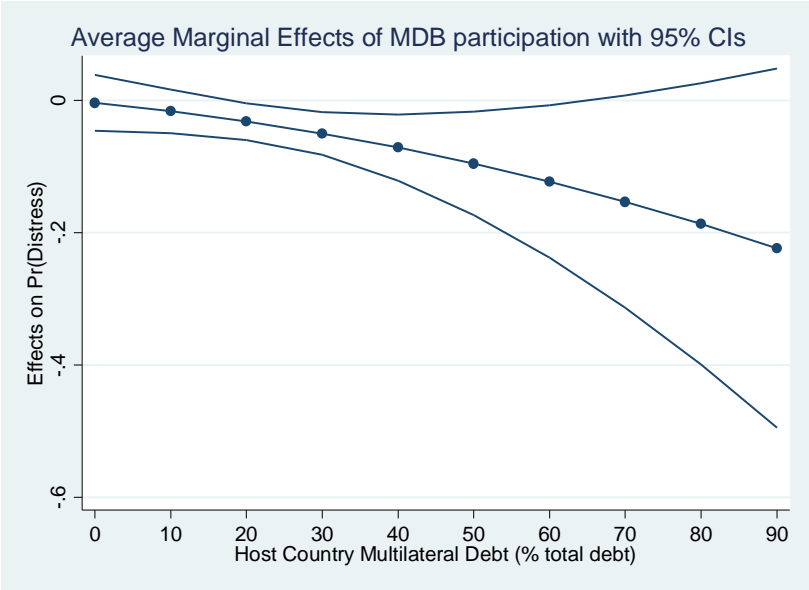Average Marginal Effects of MDB participation with 95% CIs

Table 6: Probit model of MDB participation in infrastructure project

Dependent variable is MDB participation

	-14-
Multiple sponsors	-0.012
	(0.096)
Cross border sponsors	0.178**
	(0.063)
Total financial commitment	0.301**
	(0.032)
Government support	0.11
	(0.165)
Project company publicly traded	0.480*
	(0.226)
Sector: Telecom	-0.934**
	(0.169)
Sector: Transport	-0.009
	(0.125)
Sector: Water/Sewerage	0.155
	(0.174)
PPI type: Concession	-0.288*
	(0.124)
PPI type: Divestiture	-0.320+
	(0.183)
PPI type: Management & lease contract	0.349
	(0.549)
ln(GDP/C)	-0.716
	(0.501)
GDP growth (annual %)	0.003
	(0.018)
Institutional development	-0.001
	(0.009)
FDI/GDP	0.015
	(0.027)
Multilateral debt (% of total external debt)	0.003
	(0.008)
Country dummies	Yes
Year dummies	0
Constant	3.961
	(4.347)
Number of observations	2,101.00
Log likelihood	-620.83
Chi2	470.34

Note: Standard errors in parentheses

+ p<0.1, * p<0.05, ** p<0.01

Table 7: Average effect of MDB participation with propensity score matching

Dependent variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Project distress	Unmatched	0.09	0.08	0.01	0.02	0.68
	ATT	0.09	0.15	-0.06	0.03	-2.13

matches = 296

Note: Estimated using the psmatch2 command in Stata 13.

Table 8: Mean values and bias of treated and control groups using propensity score matching

Variable	Mean			t-test	
	Treated	Control	%bias	t	p>|t|
Multiple sponsors	0.45	0.43	4.9	0.58	0.56
Cross-border sponsors	1.03	0.98	6.8	0.73	0.47
Total financial commitment	5.29	5.30	-0.6	-0.08	0.94
Government support	0.09	0.07	6.8	0.92	0.36
Project company is publicly traded	0.06	0.05	5.3	0.55	0.58
Sector: Telecom	0.13	0.14	-3.3	-0.36	0.72
Sector: Transport	0.23	0.23	-0.8	-0.10	0.92
Sector: Water/Sewerage	0.08	0.08	1.0	0.15	0.88
PPI type: Concession	0.24	0.27	-6.0	-0.76	0.45
PPI type: Divestiture	0.09	0.09	-1.3	-0.14	0.89
PPI type: Management & lease contract	0.01	0.00	4.4	0.58	0.56
ln(GDP/C)	7.53	7.54	-1.3	-0.15	0.88
GDP growth (annual %)	4.22	4.09	3.5	0.46	0.65
Institutional development	63.26	62.87	4.0	0.43	0.67
FDI/GDP	3.33	3.14	7.6	0.89	0.37
Multilateral debt (% of total external debt)	23.89	23.66	1.5	0.16	0.87

Mean bias = 3.7

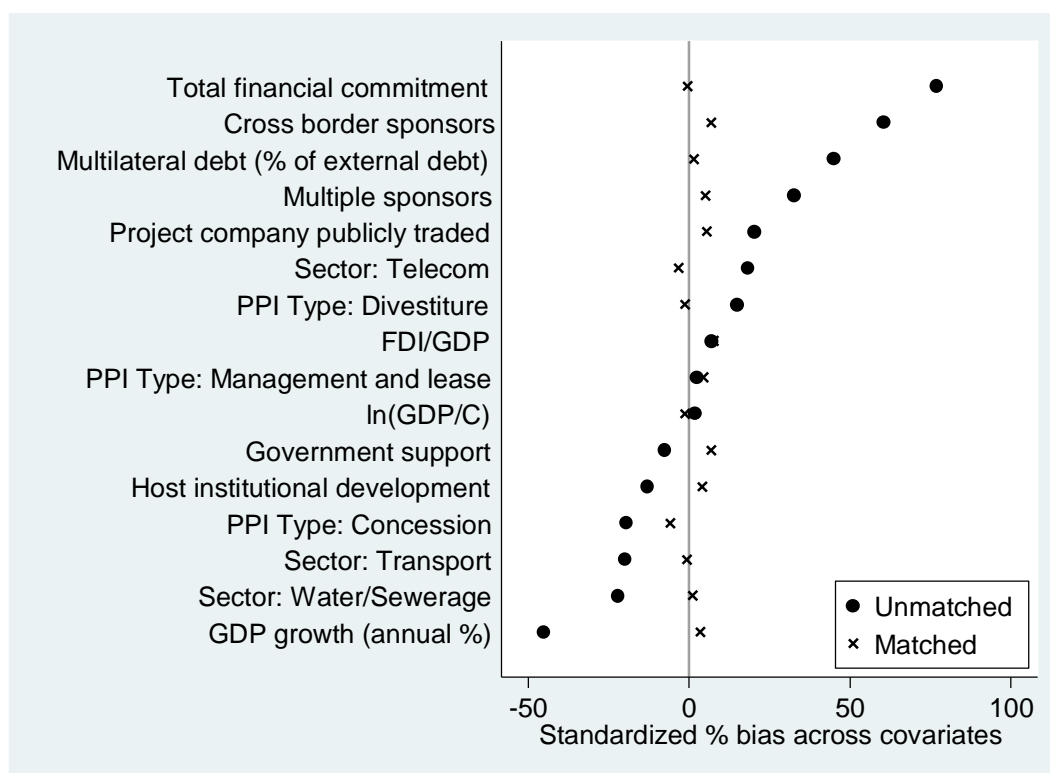Figure 3: Standardized bias for unmatched and matched groups

Table 9: Other robustness tests

Dependent variable is project distress

	-15- Matched Sample	-16- melogit	-17- melogit	-18- # MDBs involved	-19- Pre 2002	-20- Post 2002
MDB participation	-0.922**	-0.637*	-2.841+	-4.403**	-0.555+	-2.210*
	(0.350)	(0.268)	(1.644)	(1.689)	(0.312)	(1.075)
MDB participation * Institutional development			0.041+	0.063**		
			(0.023)	(0.024)		
MDB participation * Multilateral debt			-0.015	-0.001		
			(0.015)	(0.010)		
Institutional development	-0.076	-0.013	-0.022+	-0.040+	-0.006	0.011
	(0.051)	(0.011)	(0.012)	(0.021)	(0.019)	(0.215)
Multilateral debt (% of total external debt)	0.039	0.022*	0.024*	0.024	0.016	-0.017
	(0.026)	(0.010)	(0.011)	(0.017)	(0.050)	(0.028)
Multiple sponsors	-0.612	-0.299	-0.295	-0.332	-0.408	0.782
	(0.421)	(0.215)	(0.216)	(0.226)	(0.252)	(0.653)
Cross-border sponsors	0.587*	0.391**	0.398**	0.398**	0.351+	0.151
	(0.260)	(0.140)	(0.141)	(0.149)	(0.181)	(0.332)
Total financial commitment	0.145	0.112+	0.113+	0.102+	0.101	0.327
	(0.158)	(0.058)	(0.058)	(0.061)	(0.067)	(0.208)
Government support	0.732	0.790*	0.808*	0.951**	1.298**	0.553
	(0.730)	(0.336)	(0.338)	(0.355)	(0.455)	(0.764)
Project company publicly traded	-1.274	-1.371+	-1.257	-1.031	-1.380+	
	(1.190)	(0.779)	(0.781)	(0.809)	(0.821)	
PPI type: Divestiture	0.851	0.225	0.169	0.191	0.367	0.11
	(0.751)	(0.390)	(0.394)	(0.422)	(0.454)	(1.753)
PPI type: Greenfield	0.032	-0.366	-0.361	-0.334	-0.301	-0.179
	(0.508)	(0.236)	(0.236)	(0.246)	(0.272)	(0.762)
PPI type: Management & lease contract	1.392	-0.575	-0.503	-0.224		1.694
	(1.909)	(1.170)	(1.167)	(1.185)		(2.771)
Sector: Telecom	0.083	0.456	0.476	0.296	0.468	-0.005
	(0.703)	(0.304)	(0.306)	(0.343)	(0.383)	(1.120)
Sector: Transport	0.884	0.238	0.241	0.208	0.04	1.104
	(0.566)	(0.273)	(0.273)	(0.285)	(0.311)	(0.988)
Sector: Water/Sewerage	2.425**	1.132**	1.145**	1.193**	1.129**	4.045**
	(0.665)	(0.305)	(0.305)	(0.317)	(0.343)	(1.300)
ln(GDP/C)	9.919**	0.123	0.11	0.056	1.114	-7.909
	(3.173)	(0.216)	(0.220)	(0.987)	(1.696)	(6.601)
GDP growth (annual %)	0.073	0.05	0.048	0.067+	0.072+	0.272
	(0.071)	(0.032)	(0.032)	(0.036)	(0.044)	(0.172)
FDI/GDP	0.181+	0.066+	0.070+	0.028	-0.005	0.062
	(0.107)	(0.040)	(0.040)	(0.053)	(0.067)	(0.204)
Country dummies	Yes	No	No	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-69.203**	-3.256+	-2.669	-2.104	-14.282	64.338
	(21.706)	(1.793)	(1.847)	(8.534)	(14.973)	(62.007)
var(_cons[Country])						
Constant		0.547**	0.571**			
		(0.211)	(0.221)			
Number of observations	509	2,117.00	2,117.00	2,117.00	1,175.00	747
Log likelihood	-140.76	-495.79	-493.07	-456.1	-351.81	-68.39
Chi2	129.78	101.64	104.79	285.81	174.46	88.92

Note: Standard errors in parentheses

+ p<0.1, * p<0.05, ** p<0.01