Project Finance as a Risk-Management Tool in International Syndicated Lending

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Abstract:

How should loan contracts to finance projects in countries with high political risk be designed? We develop a double moral hazard model in which the bank's incentive to mitigate political risk is highest with a non-recourse project finance loan, while for the firm's incentive to manage operational risk it is best to have a full-recourse loan. We predict that the use of project finance increases with both the political risk of the country in which the project is located and the lender's influence over this political risk exposure. Furthermore, the use of project finance should decrease as the economic health and corporate governance provisions of the borrower's home country improve. We test these predictions with a sample of 4,549 loans made to borrowers in 90 countries. We find overall support for our model and provide evidence that multilateral development banks indeed represent a "political umbrella".

Keywords: Project finance, syndicated loans, political risk, double moral hazard

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1. Introduction

How should a company finance a project located in a country where political risk is high and where investor protection is weak? In principle, such a project will only be realized if the risk can be reduced to a bearable level. For the sponsoring company, there are two alternative ways for managing project risks. Risk management can either be delegated to an agent or the risks can be allocated indirectly through the financing contract. The former alternative is, however, often not feasible. As argued by the theory of incomplete contracts, describing all the tasks involved in a contract is far too complex. In contrast, Coasian bargaining theory and a growing empirical literature on law, institutions, and finance clearly show that loan contracts can be designed to mitigate deficits in the legal and institutional environment (Qian and Strahan, 2007). In this study, we focus on political risk as one of the most important risk factors in international finance and investigate how this risk can be mitigated through the design of the loan contract. We discriminate between full-recourse loans und non-recourse project finance loans. In the latter case, a legally independent project company is created that is financed with equity from one or more of the sponsoring firms but raises the bulk of its financing needs in the form of bank loans. This structure ensures that liability is limited so that lenders have no, or only limited, recourse to the sponsoring firms (Esty, 2004). In contrast, a traditional full-recourse loan allows the lender access to all the assets of the project and the sponsoring firm. Our research is motivated by the following case:

> The South African petrochemical group Sasol opts for a unique hybrid project finance structure to finance a gas field project in Mozambique. Under this hybrid structure, lenders initially have full recourse to Sasol, which assumes almost all project related risks. The sole – but important – exception is the project's political risk. Here, the loan contract specifies that, if well-defined political risk events occur, the financing structure automatically changes from the full-recourse structure to a project-finance structure under which lenders have full-recourse to the project but no longer have recourse to Sasol. Cadwalader (2004), the project's legal consultant, interprets this structure as a device to commit the development banks to actively mitigate political risk: "Sasol would like to maximize the influence that the political risk providers […] bring to the deal – their ability to exert political pressure on, in this case, the Mozambican government to prevent or cure a political risk event. Limiting the ability of the lenders, and effectively of the subrogated insurers, to pull the proverbial rug from underneath the project (by limiting the lenders' acceleration and enforcement rights) is arguably the most effective way of insuring that such institutions actively seek to remedy or mitigate any political risk event […]."

The first insight we derive from Sasol's project is that the full recourse structure is used to provide incentives to the firm to manage all operational risks. The second insight is that the non-recourse structure of

the project finance deal is intended to give incentives to the lenders, i.e. the development banks, as syndicate members to manage political risk. The third insight is that the development banks provide a so-called political umbrella, which means that through their participation political risk is reduced. Based on their ability to provide loans or grants in the future, their leverage is sufficient for them to be able to influence a government's decision.

However, there are two arguments against a state-contingent financing structure which may explain why this deal structure is not commonly used. Firstly, it is not obvious how to define specific political risk events ex ante. Secondly, and more importantly, the switching provision limits the incentives of banks to mitigate political risk to situations in which a predefined risk event occurs, and thus does not exploit the political umbrella of the development banks. Without this hybrid form, the incentives of the borrower and the bank to manage the operational risk versus the political risk must be traded off when determining the recourse structure of a loan.

We capture such a situation in a theoretical model featuring a double moral hazard problem and analyze the resulting trade-off. Our model predicts that non-recourse project finance loans are used for projects that, ceteris paribus, bear higher political risk or are financed by more influential syndicates. We test our hypotheses using data on 4,549 loans raised by borrowers in 90 countries between 1996 and 2005. The results support our predictions. We also show which type of lender is actually able to mitigate political risk. Thus, our study provides evidence for how political risk can be mitigated through the design of a loan contract, i.e. through the inclusion of multilateral or national development banks in the syndicate.

Our study contributes to the growing literature on project finance. Esty (2004) considers project finance deals as 'strategic research sites' which allow investigation not only of financial structures but also of their interaction with operational and ownership structures and their impact on managerial incentives and asset values. This approach challenges Modigliani and Miller's (1958) view that investment and financing decisions can be separated. More specifically, our theoretical model analyzes such linkages between investment and financing for the particular case of managing political risk. There are a few papers that model project finance which are either based on beneficial tax arrangements (Shah and Thakor 1987, John

and John 1991), on the allocation of managerial benefits (Chemmanur and John 1996), or on the incentive to invest of a firm that might be forced to sell a specific, but redeployable asset (Habib and Johnsen 1999). Only Laux (2001) analyzes incentives in a model on financial decisions in which the headquarters uses project finance to commit itself to monitoring the project and thereby influences the project manager's incentives. Our study is thus the first that models project finance as an instrument to optimally align the incentive of both borrower and lender.

In spirit our theoretical model is close to Grossman and Hart (1986) and Hart and Moore (1990) who argue that perfect state-contingent contracting is not feasible and therefore emphasize that the ownership of an asset has important incentive effects on the parties that contribute to the project's success. In the existing models on bank moral hazard, only the bank has to generate information about the borrower either ex post or ex ante (Rajan and Winton 1995, Manove, Padilla and Pagano 2001). If the double moral hazard problem exists because the bank has to monitor the effort of the firm, financing firms with a mix of bank credit and external capital is optimal (Besanko and Kanatas 1993).[1] We also study incentives in a double moral hazard model and focus on the design of the financial contract.

Empirical studies on project finance are limited to pricing (Ivashina 2008, Dailami and Hauswald 2007, Sorge and Gadanecz 2004, Kleimeier and Megginson 1998, 2000) or syndicate structure (Esty and Megginson 2003) analyses. Despite the fact that the focus of these studies is quite different from our own, these studies provide clear evidence for the relevance of political risk. In general, loan-pricing studies agree that political risk, either directly or indirectly via a political risk guarantee, is reflected in the spread of the loan. Kleimeier and Megginson's (2000) study also indicates that the higher the political risk of the host country, the more likely project finance is. Esty and Megginson (2003) investigate the syndicate structure of project finance loans in the context of legal quality, which, though not identical with political risk, is clearly related to it. These authors find that, for borrowers in countries with weak creditor rights and poor legal enforcement, syndicates must be particularly large and diffuse in order to deter strategic

default. Thus, the syndicate structure is directly influenced by the risks involved. Qian and Strahan (2007) present similar results for syndicated loans in general. They argue that the design of private loan contracts is determined by the legal and institutional environment of a country and their terms are used to mitigate deficits in this environment.

Our study proceeds as follows. Section 2 presents our model with the double moral hazard problem. In section 3, we derive empirically testable hypotheses. We present the data sources in section 4. In section 5 we show the empirical test of our model in a loan-level analysis. Section 6 concludes.

2. A Double Moral Hazard Model

We want to capture a situation in which a firm influences operational risk by exerting effort, for example by determining the technical realization of the project, and a bank can mitigate political risk by, for example, influencing decisions of a government. We discriminate between different modes of bank finance, i.e. full-recourse syndicated credit versus non-recourse project financing structures.

2.1 The Basic Model

A firm wants to finance a project, which yields a payoff of $X > 0$ in the case of success and zero in the case of failure. We assume that the project's assets have a liquidation value of zero. The project costs I. We restrict the analysis to welfare-increasing projects. We assume that the firm finances the investment project through a loan. The probability of the project's success is pq with $0 < p < 1, 0 < q < 1$. If the bank decides to exert costly effort b to reduce political risk, the probability of success increases from $\underline{p}$ to $\bar{p}$. Similarly, if the firm's manager exerts costly effort e, he improves the firm's operation and thereby the probability of success increases from $\underline{q}$ to $\bar{q}$. Accordingly, the probabilities of success can be $\bar{\bar{p}}\bar{\bar{q}}$,

[1] Neither pure equity finance nor pure debt finance solves the double moral hazard problem that arises in venture capital arrangements. Instead, a convertible security with an appropriately set price gives both parties an incentive to exert first best effort (Schmidt, 2003).

$\underline{p}\bar{q}$, $\bar{p}\underline{q}$ or $\underline{p}\underline{q}$.[2] The sponsoring firm that decides on the realization and financing of a new project has wealth of W>X. This wealth includes the cash flows generated by all other projects of the firm and all of its assets, which we assume not to be firm specific.

The banking sector is perfectly competitive; thus, banks make zero expected profit. Banks offer credit contracts that specify the repayment R in the case of success and V in the case of failure. Thus, V determines the bank's degree of recourse, which in turn depends on whether, in the case of failure, the bank has access only to the project's cash flow or also to the wealth of the sponsoring firm.

We want to investigate the choice between a non-recourse (project finance) and a full-recourse loan. If the project is incorporated separately, it is financed by a non-recourse loan. If the project is incorporated within the sponsoring firm, the bank grants a traditional full-recourse loan. In this case, the bank receives the same repayment if the project is successful and if it fails. However, in the case of a non-recourse loan, the bank only receives V=0 if the project fails. The time line is as follows: The sponsoring firm decides whether to incorporate the project within the firm or separately from it. At time 0, the bank offers a selection of credit contracts, i.e. either a full-recourse or a non-recourse loan.[3] Then, the firm chooses the contract, which is then signed by the bank and the firm. Next, both the firm and the bank can exert effort. At time 1, the payoff of the investment is realized and the bank receives either repayment R in the case of success or repayment V in the case of failure.

The payoff of the project is given by (1), which must be positive:

$$pq\,X - I - e - b \geq 0. \tag{1}$$

We assume that welfare increases if effort is exerted, i.e, $\underline{p}(\bar{q}-\underline{q})X > e$ and $(\bar{p}-\underline{p})\underline{q}X > b$. In a first-best world with symmetric information, the effort levels of both the firm and the bank can be observed and verified by the court, and therefore stipulated in a contract. In practice, however, these effort levels are not contractible (for the bank's effort, see the example of the gas field project in Mozambique in the In-

[2] Managerial effort e could influence the size of the payoff X (Brealey, Cooper, Habib, 2000). When studying a loan contract, the crucial question is whether X exceeds the repayment which must be made to the bank. If X exceeds the

troduction). Thus, the credit contract must be designed such that both parties have an incentive to exert effort. We solve the game by backward induction. We first study the payoffs of a non-recourse loan versus a full-recourse loan which depend on the incentives provided by the contract. Next, we derive the Nash equilibria for the different contracts. Finally, we analyze the firm's choice of contract.

2.2 Incentive Problems

The expected payoff of the firm's manager is given by $pq(W + X - R) + (1 - pq)(W - V) - e$. Accordingly, he has an incentive to exert effort if the expected payoff with effort is higher than the one without effort:

$$\begin{aligned} &\bar{p}\bar{q}(W + X - R) + (1 - \bar{p}\bar{q})(W - V) - e \geq \underline{p}\underline{q}(W + X - R) + (1 - \underline{p}\underline{q})(W - V) \text{ or} \\ &p(\bar{q} - \underline{q})(X - R + V) \geq e. \end{aligned} \tag{2}$$

The manager's incentive to exert effort can be increased by decreasing R and increasing V. Note that it is easier to solve the firm's moral hazard problem when p is high. We want to focus on a double moral hazard problem. Therefore, we restrict attention to cases in which the firm does not have an incentive to exert effort with a non-recourse loan because otherwise we would end up with trivial cases in which both incentive problems could be solved by a non-recourse loan. Thus, the expected net return for the firm's manager, which is the project's payoff X net of repayment $R = \frac{I}{\underline{p}\underline{q}}$, must be lower than its effort costs:

$$p(\bar{q} - \underline{q})\left(X - \frac{I}{\underline{p}\underline{q}}\right) < e. \tag{3}$$

The payoff function of the bank is given by $pq\,R + (1 - pq)V - b$. Thus, the bank has an incentive to exert effort if

$$\begin{aligned} &\bar{p}\bar{q}R + (1 - \bar{p}\bar{q})V - b \geq \underline{p}\underline{q}R + (1 - \underline{p}\underline{q})V \text{ or} \\ &(\bar{p} - \bar{p})q(R - V) \geq b. \end{aligned} \tag{4}$$

The incentive compatibility constraint of the bank in (4) is more easily fulfilled if the difference between the bank's payoffs in the cases of success and failure is large. Consequently, increasing the repayment R

repayment, the firm can repay. In our model, this is captured by the probability of success. Thus, our set-up where e influences the probability of success also captures a situation in which e influences X.

[3] We thus assume that the choice of the lender precedes the choice of the loan contract.

in the case of success, and simultaneously decreasing the repayment V in the case of failure, improves the bank's incentive to exert costly effort. Note that it is easier to solve the bank's moral hazard problem when q is high.

2.3 Non-Recourse Loans versus Full-Recourse Loans

A non-recourse loan specifies R>V as a repayment in the case of success and V=0 in the case of failure. From (3) we know that a non-recourse loan does not solve the firm's incentive problem and that the firm's manager does not exert effort. To fulfill the bank's participation constraint in the case where it exerts effort, R is determined by[4]

$$\bar{p}\underline{q}R - I - b = 0 \text{ or}$$
$$R = \frac{I + b}{\bar{p}\underline{q}}. \tag{5}$$

Inserting this repayment into the bank's incentive compatibility constraint given in (4) yields the following condition

$$\frac{\bar{p} - \underline{p}}{\underline{p}} I > b. \tag{6}$$

A non-recourse loan solves the bank's incentive problem if this condition holds. We assume that this is indeed the case, because otherwise the bank's incentive problem can never be solved and we could not study a double moral hazard problem. Thus, we state the following lemma:

LEMMA 1. *A non-recourse loan, i.e. V=0, solves the bank's moral hazard problem but not the firm's moral hazard problem.*

By incorporating the project separately, the bank has no recourse as the sponsoring firm is not liable. Therefore, the difference between the bank's payoffs for success or failure is large, and the bank has an incentive to exert effort. The payoff for the firm with a non-recourse loan is thus $\bar{p}\underline{q}\,X - I - b$.

A full-recourse loan specifies the same repayment R=V in the cases of both success and failure. As can be easily seen from (4) such a contract does not provide an incentive to the bank to exert effort b. However, the contract gives an incentive to the firm's manager as, for R=V (2) the firm's incentive compatibility

constraint becomes $p(\bar{q} - \underline{q})X \geq e$, which is fulfilled as indicated above. Hence, we obtain the following lemma:

LEMMA 2. *A full-recourse loan, i.e., R=V, solves the moral hazard problem of the firm but cannot solve the moral hazard problem of the bank.*

The payoff for the firm with a full-recourse loan is thus $\underline{p}\bar{q}X - I - e$.

2.4 Choice of Contract

In reality, both bank and firm have to contribute to the success of an investment project. Lemmas 1 and 2 show that there exists a trade-off between solving the firm's incentive problem and that of the bank. The firm chooses between a full-recourse loan and a non-recourse loan offered by the bank. Taking into account the effect of the type of contract on incentives and ultimately on its own payoff, the firm makes the following choice:

PROPOSITION 1. *The firm chooses separately incorporating the new project and taking a non-recourse loan, i.e. V=0, and thereby solves the bank's incentive problem if*

$$(\bar{p} - \underline{p})\underline{q}X - b > \underline{p}(\bar{q} - \underline{q})X - e. \tag{7}$$

Otherwise, the firm chooses financing the project with a full recourse loan, i.e. R=V, and thereby solves its own incentive problem.

Given our set-up, it is not possible to solve both moral hazard problems. Therefore, the optimal contract solves the incentive problem of the party whose effort has the relatively higher impact on the probability of success. It is optimal to solve the bank's incentive problem if condition (7) holds, which happens, for example, when the efforts that the bank and the firm have to exert have the same costs and the bank's effort increases the probability of success more than the firm's effort because political risk is high or operational risk is low. To induce the bank to exert effort, the difference between the payoffs for success and failure must be large. The credit contract can stipulate a sufficiently high difference between the state-contingent payoffs when the new investment project is separately incorporated. Then, the bank receives

[4] Due to the zero profit constraint, the participation constraint is binding.

no return in the case of failure, as the project's payoff is zero and there is no recourse to the assets of the firm that sponsors the project.

Comparative statics show that condition (7) holds if the effort of bank b is lower and the effort of the firm e is higher. Then the payoff from solving the bank's incentive problem becomes higher relative to the payoff from solving the firm's incentive problem. If condition (7) does not hold, it is optimal to solve the firm's incentive problem.

What happens when political risk (captured by $\left(\bar{p}-\underline{p}\right)$) or operational risk (captured by $\left(\bar{q}-\underline{q}\right)$) change? From the comparative statics we obtain the following results:

PROPOSITION 2. *For a given increase in political risk* $\Delta\left(\bar{p}-\underline{p}\right)$*, the firm's preference for a non-recourse project finance loan over a full-recourse loan increases more strongly when the probability of success with firm effort, i.e.* $\bar{q}$*, is high. For a given increase in operational risk* $\Delta\left(\bar{q}-\underline{q}\right)$*, the firm's preference for a project finance loan over a full- recourse loan decreases more strongly when the probability of success without bank effort, i.e.* $\underline{p}$*, is high.*

Proof: See the Online Appendix.

Suppose that political risk increases. From Proposition 1 we know that this results in a stronger preference for non-recourse project finance. But how strongly the preference changes depends on the other characteristics of the project, in particular on the probability of success with firm effort $\bar{q}$. This means that, if in one country the level of political risk changes, the impact on the choice of contract varies between projects. For a project for which the probability of success with firm effort is high, it is then more likely that then the decision is taken to finance it through a non-recourse project finance loan than for a project with a low probability of success with firm effort. Similarly, consider projects with identical characteristics that are undertaken in two different countries. What happens if the operational risk of the project increases? Certainly, the preference for a non-recourse project finance loan decreases. However, how strong this decrease is depends on the probability of success with bank effort. In a country with low political

risk, this probability is high, and the likelihood that the project is financed by a non-recourse project finance loan is lower than in a country with high political risk.

3. Testable Hypotheses

We use the results obtained in Propositions 1 and 2 to derive testable predictions. Based on Proposition 1, the following interpretation can be derived: The firm's moral hazard problem is reflected in the influence of managerial effort on operational risk, given by $(\bar{q} - \underline{q})$, in relation to the manager's effort costs e. Without firm effort, the probability of success is $\underline{q}$. In our setting, the influence that a given level of firm effort has on the success probability depends on the macroeconomic development. The better the macroeconomic development of a country (for example, in terms of economic growth), the higher is the effect that a given effort of the firm's manager has on the probability of success, $\bar{q}$. Thus, a project is more likely to be financed by a non-recourse loan if it is located in a country with weaker economic performance. Furthermore, the effort a firm's manager must exert to manage a project causes costs of e. A firm with very good corporate governance imposes many restrictions and severe punishments on a manager who deviates from the best corporate strategy. Thus, deviation is expensive, the forgone private benefits are low and so are the costs of effort.[5] Hence, it is easy to solve the firm's incentive problem by granting a full recourse loan.

The bank's moral hazard problem is reflected in the effect that bank effort b has on the political risk of the project. The more the government's actions can influence the probability of the success, the higher $(\bar{p} - \underline{p})$ will be. The probability of success of the project without any effort by the bank, $\underline{p}$, will be low in countries with high government involvement and high political risk. In such a country, the bank's effort leads to an increase in the probability of success to $\bar{p}$. Thus, for firms in politically risky countries, bank effort has a big effect on the probability of success and they should therefore use non-recourse project finance

[5] We note that the absolute size of effort costs can be interpreted as private benefits. For managers of firms with poor corporate governance, effort costs are high and so are private benefits.

more frequently. Finally, the cost of bank effort b depends on the bank's influence on the host government. The higher the bank's influence on the host government, the lower is the cost of bank effort b at which a given increase in the project's success probability will be achieved.[6] In other words, influential banks can more easily constrain politically adverse moves and borrowers should therefore prefer project finance.[7] Among all lenders, multilateral development banks such as the International Financial Corporation (IFC), a member of the World Bank Group, or the European Bank for Reconstruction and Development (EBRD) have high bargaining power because, as they finance many projects and also provide financial aid, they frequently interact with the government. In contrast to commercial banks that might also be frequent lenders, the development banks (DBs) have a special status. Buiter and Fries (2002) argue that multilateral DBs' "(…) support for private sector projects can be instrumental in mitigating risks associated with government polities and practices". Therefore, multilateral DBs are also known as political umbrellas (Buljevich and Park 1999). Considering all these factors, we propose the following:

HYPOTHESIS 1. *An investment is (ceteris paribus) more likely to be financed as a project finance loan,*

a. the weaker the corporate governance system,

b. the weaker the economic performance,

c. the higher the political risk of the borrower's country and

d. the higher the influence of the lending bank over the host government.

Finally, Proposition 2 shows some interesting interaction effects between different characteristics of the project that influence the choice of loan contract. Its predictions are the following:

HYPOTHESIS 2. *The probability that an investment is (ceteris paribus) financed as a project finance loan*

a. increases more strongly when the political risk increases for a borrower in a country with strong economic performance and

[6] Note also that banks do not necessarily have to intervene after a politically adverse move has occurred. Having an influential bank in the syndicate might already be sufficient to constrain adverse behavior when the government anticipates the bank's reaction. One prerequisite for deterrence is thus that banks can credibly commit to exert influence, which is the case if b is low.

[7] As an example for bank influence, consider the Russian A.O. Volga project, financed by Dresdner Bank Kleinwort Benson and the IFC. When this project suffered due to the Russian crisis and the moratorium in 1998, bank influ-

b. decreases less strongly when the economic performance improves for a borrower in a country with high political risk.

4. Data and Methodology

Our main data source is the Dealscan database which provides a comprehensive record of global syndicated loan transactions. We focus on syndicated loans signed between January 1, 1996 and December 31, 2005 and differentiate between project finance loans and full-recourse loans. We categorize loans based on Dealscan's reported loan purpose. To ensure that we focus on investments for which the firm truly has a choice between a project finance and a full-recourse loan, we consider only asset-based loans with purpose 'project finance' and contrast them with loans whose purpose is 'equipment purchase', 'telecom buildout' and 'capital expenditure'.[8] For the resulting sample, we define our dependent variable consistent with our assumption that the investment project is loan-financed rather than bond- or equity-financed, and with our differentiation between non-recourse project finance and full-recourse loans. We therefore define a project finance dummy variable which we code as 1 for project finance and 0 for a full-recourse loan.

We obtain the proxies for our explanatory factors from Dealscan, Euromoney, and the World Bank. Since the firm's moral hazard problem depends on how much an increase in the manager's effort will raise the success probability of a project, given the manager's effort cost, we need different proxies for measuring these two components of firm moral hazard. Earlier, we noted that a manager's influence on the probability of success depends on the economic performance of a country. This means that a given effort has a larger effect in a country with better economic prospects. We use Euromoney's "Economic Performance Index" as our proxy for the economic performance of the borrower's country. This annual index is based on the current GDP per capita figures and on a poll of economic projections. Thus, it contains not only current, but also forward-looking information, which is especially useful to us when we consider the me-

ence was evident in the fact that "the IFC umbrella regarding transfer and convertibility risk has remained effective, since IFC's loans were explicitly exempted from the moratorium" (Lazarus, 2001, p. 119).

[8] We thus exclude loans raised for capital structure purposes (such as for example 'stock buyback', 'credit enhancement', 'working capital', or 'debt repayment'), restructuring purposes (such as for example 'LBO/MBO', 'acquisition line', 'takeover') or general purposes (such as for example 'corporate purpose' or 'other').

dium to long-term nature of loan finance. The index ranges from 1 to 100 with higher values indicating better economic performance. Based on hypothesis 1, we would thus expect a negative relation between project finance and economic performance.

We also noted earlier that the firm's effort costs depend on the corporate governance system, which means that the weaker the corporate governance system, the higher is the manager's opportunity cost (lost private benefits or perquisites) of pursuing the best corporate strategy. As a proxy for the strength of the corporate governance system, we use a measure of financial development that combines the development of the stock market and the banking system of the country in which the project is located. We define corporate governance as the equally weighted average of stock market capitalization and domestic credit to the private sector, both of these as a percentage of GDP. We obtain both values from the World Bank's World Development Indicators. This measure captures the strength of the corporate governance system in terms of market forces as managers in countries with a more developed financial sector are more controlled by active stockholders and bank lenders than are managers in countries with less developed financial sectors. Based on hypothesis 1, we would thus expect a negative relation between project finance and corporate governance.

The bank's moral hazard problem also consists of two components: political risk and bank influence. We note that political risk can be divided into three broad categories: traditional political risk, regulatory risk, and quasi-commercial risk (Smith 1997). The traditional political risk category addresses risks relating to expropriation, currency convertibility and transferability, and to political violence. The regulatory risk category covers risks arising from unanticipated regulatory changes. These risks include taxation or foreign investment laws. The quasi-commercial risk category reflects those risks that arise when the project contends with state-owned suppliers or customers whose ability or willingness to fulfill their contractual obligations towards the project are questionable. We mainly consider traditional political risk and regulatory risk when we interpret bank moral hazard. The World Bank's Worldwide Governance Research Indicators Data Set specifies six measures of political risk that fit our perception of these risk categories. These measures are the voice and accountability of the government, political stability and absense of vio-

lence, government effectiveness, regulatory quality, rule of law, and control of corruption. We use a combined average of all six measures as our proxy. Our proxy ranges from 0 to 8 with higher values indicating higher political risk. Based on hypothesis 1, we would thus expect a positive relation between project finance and corporate governance.

As the second component of the bank's moral hazard problem we measure the lender's influence over the host government, which depends on both the lender's status as a development bank and its market share in the syndicated loan market. We assume that a higher market share reflects more influence because adverse behaviour of the government towards one loan provided by a development bank might have spillover effects for all other loans of the same lender. First, we obtain annual national league tables for all syndicated loans signed between 1991 and 2005 for each country i from Dealscan. These league tables include loans for all purposes and are not limited to assets-based loans. They rank all lenders based on the amount of funds they provide during our sample period, which allows us to identify exactly which lender provides how much funds to each country. Second, we classify lenders as development banks based on the World Bank's definition of multilateral development banks (MDBs) and multilateral financial institutions (MFIs). For each of these development banks, we measure its annual market share as its total loan volume to borrowers of country i in year t relative to the total loan volume of all lenders to borrowers of country i in year t. For a more in-depth analysis, we also measure market shares of prominent national development banks (NDBs), such as export-import banks. We include these latter lenders if they have a substantial share in the syndicated loan market and might therefore have substantial influence over the host government. In particular, we select those national development banks that fund at least 100 syndicate loans that are worth $1,000 million in real terms. Panel A of Table 1 lists the individual development banks and indicates to which category they belong.[9] Among them, Germany's KfW and the EBRD are the most prominent lenders, followed by the JBIC. There is no clear link between a development bank's total lending and the share of project finance loans in its loan portfolio. For example, the project finance share

is low for the first-ranked KfW but high for the second-ranked EBRD. Overall, loan volume alone, which we use in our proxy for bank influence, does not imply a preference for project finance. Third, to obtain a loan-specific proxy for bank influence, we identify those development banks which are part of the syndicates of all loans financing the same project and sum their market shares over the three years prior to the year of loan signing (as real volumes in 2005 US$). Our proxy ranges from 0 for syndicates without a development bank to 300, with higher values indicating more bank influence. Based on hypothesis 1, we would thus expect a positive relation between project finance and bank influence.

Panel B of Table 1 provides descriptive statistics for all bank and firm moral hazard proxies. As shown, there is substantial variation in political risk, corporate governance and economic performance despite the fact that these proxies only vary across countries and years. To illustrate, the UK in 2003 reflects the average level of firm moral hazard. One standard deviation better corporate governance and economic performance can be found in the US in 2005 whereas Greece in 2003 and Cyprus in 2005 are one standard deviation worse. Liberia in 2001 represents the minimum in terms of firm moral hazard. Regarding bank moral hazard, Hong Kong in 2000, Estonia in 2004 or Chile in 1997 are representatives for average levels of political risk. One standard deviation removed are Malaysia in 1999 or South Africa in 2001 with high levels of political risk and New Zealand in 2005 or many Western European countries with low levels of political. The highest levels can be found in Liberia, Uzbekistan, Nigeria or Laos (post 2000). As could be expected, the descriptive statistics for bank influence show that development banks only participate in a minority of loans. When they are part of the syndicate, however, their market shares can be large. Finally, Table 1 shows that the ranges and standard deviations of our four moral hazard proxies differ substantially. When interpreting our regression results in the next section, we will therefore focus on the effect that a *one-standard deviation change* in moral hazard has on the likelihood of an investment being financed with project finance. In this way, the effects of our four proxies become comparable.

[Insert Table 1 about here]

[9] The table also identifies which lenders we include in our bank influence proxy. When discussing empirical results of this bank influence proxy, we will refer to these lenders in general terms as development banks. Only when we

In our analysis, only the bank influence proxy is truly loan-specific, while proxies for political risk, corporate governance and economic performance only vary across countries and years. The result of Doidge et al. (2007) that country characteristics explain much more (39%-73%) of the variance of governance ratings than observed firm characteristics (4%-22%) would justify this approach. While borrower-specific proxies for these three factors might nevertheless be preferable, many of them can only be obtained for full-recourse loans. The borrower of a project finance loan is a newly established company for which financial statements or other records are neither available at the time of loan signing nor afterwards as project finance companies are usually not publicly listed. However, based on the Dealscan record of each loan, we can use the total size of all loans that finance a given project (in billions of real 2005 US$) as an indicator of the size of the investment. Similarly, we measure the life of the investment by using the maximum maturity in years among all loans that finance a given project. Additionally, we can identify the borrower's industry as a rough proxy for the project's technology. Based on the borrower's 2-digit SIC code, we create six industry groups: Mining (10-14), manufacturing (20-39), transportation and public utilities (40-49), trade (50-59), services (70-89) and 'other' for the remaining SIC codes. As the largest group with about 39% of our sample, manufacturing serves as the benchmark industry. To nevertheless capture some further borrower characteristics in an indirect manner, we apply a 2-stage regression approach as in Esty and Megginson (2003). First, we regress the loan spread on loan features that might influence the spread (loan size and maturity, dummies indicating whether or not the loan is priced over LIBOR, is guaranteed, has financial or general covenants, or is denominated in a currency different from home currency of borrower) on the industry dummies and on the proxies of bank influence, political risk, economic performance, corporate governance. The error term of this regression reflects unexplained, residual borrower risk. It is uncorrelated with the other independent variables and can be included as an indirect measure of borrower characteristics.

Overall, we have complete information for 4,549 asset-based loans signed by borrowers from 90 countries during our sample period of 1996 to 2005. Of these, 2,278 are project finance loans and 2,271 are full-

conduct detailed analyses of individual lenders will we specifically refer to the different lender categories.

recourse loans. As our dependent variable is defined as a 0/1 dummy, we estimate logit regressions to test hypotheses 1 and 2. We recognize that our proxies for political risk, corporate governance and economic performance are correlated. To avoid multicollinearity problems, we use factor analysis to orthogonalize these proxies when they are jointly included in a regression. Finally, as these three proxies vary only on a country- and year-level but not on a loan-level, we correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. This results in more conservative estimates of the significance of the independent variables.

5. Impact of Risks on the Use of Project Finance

5.1 The Use of Project Finance

Between January 1991 and December 2005, companies raised $915,479 million in real terms in the global syndicated loan market to finance projects. As Table 2 shows, half of these are project finance loans worth real $451,277 million. Asset-based loans finance investments mainly in the transportation and manufacturing sectors. In Africa and Latin America, however, these loans are frequently used to finance mining projects. As expected, borrowers in industrialized countries raise most asset-based syndicated loans. Western Europe and North America alone account for 69% of the total loan volume. Looking at a country's project finance share indicates that this financing structure is least important in North America but most important for borrowers from Latin America, Eastern Europe, and the Middle East. In these regions, bank influence and political risk are relatively high while economic performance and corporate governance are weak. In Africa, the project finance share is surprisingly moderate given the very high level of political risk and very poor economic performance. This result is partly driven by the ten loans to South African borrowers included in our sample. South Africa's relatively low political risk, strong economic performance, but, in particular, its substantially stronger corporate governance, lead to a lower project finance share of 60% for South Africa compared to 71% in the rest of Africa. Overall, it thus appears that project finance loans are used by corporate borrowers from countries with higher political risk, lower economic performance, and weaker corporate governance. Regarding bank influence, Table 2 shows that

asset-based loans are mainly funded by commercial banks. Consequently, bank influence is zero in many regions. Development banks are prominent in Eastern Europe and Latin America and are present in Asia and Western Europe. While bank influence is driven by all development banks in Asia and Latin America, bank influence in Europe is primarily driven by the KfW and EBRD, whose leading role is documented in Table 1. In sum, these observations give us our first indication that risk management influences the preference for project finance loans.

[Insert Table 2 about here]

5.2 The Relevance of Bank and Firm Moral Hazard

To test our Hypothesis 1, we first use our four main proxies for bank and firm moral hazard. We expect to find that project finance is used more often when the bank influence is stronger and the political risk environment, economic performance, and corporate governance system are weaker. In regressions (1) to (4), all slope coefficients are significant and have the expected signs. The sensitivity of project finance to each of the individual proxies found in regressions (1) to (4) is confirmed in regression (5) where all four proxies are significant and have the expected sign. For the average asset-based loan, the predicted probability of being a project finance loan is 52.6%, which is close to the sample frequency of 49.9%. For this average loan, the estimated coefficients indicate that a one standard deviation increase in bank influence or political risk leads to an increased likelihood of project finance by 17.3% or 3.3%, respectively. In contrast, a one standard deviation increase in economic performance or corporate governance leads to a decreased likelihood of project finance by 8.2% and 17.1% respectively.[10] In this sense, project finance is most sensitive to bank influence and corporate governance.[11] Overall, this regression confirms the trade-

[10] The predicted probability of a loan being a project finance loan is calculated as $\hat{\pi} = \frac{1}{1+e^{-(\hat{\alpha}+\sum_i \hat{\beta} Z_i)}}$, where $\hat{\alpha}$ and $\hat{\beta}$ are the estimated coefficients of the intercept and independent variables Z_i of regression (5). The predicted probability is first calculated for the average values of Z and then compared to the predicted probability when a one-standard-deviation increase in each of our bank and firm moral hazard proxies is considered.

[11] The odds ratios associated with our four main proxies confirm this relative sensitivity. An odds ratio is defined as the probability of a loan being structured as a project finance loan divided by the probability of a loan being structured as a full-recourse loan. For regression (5), these odds ratios of a one-standard-deviation increase (decrease) in bank influence, political risk, economic performance and corporate governance are 2.095 (0.477), 1.143 (0.875), 0.721 (1.388) and 2.014 (0.496), respectively.

off between operational and political risk which we elaborated on in the theoretical model.

Hypothesis 2 is tested in regressions (6) to (8). Overall, the positive and significant coefficients of the interactive terms confirm our hypothesis. In regression (6) we focus on the interactive effect of political risk on projects in very healthy economies. The interactive term is highly significant while the political risk itself is insignificant. This indicates that the positive effect of political risk on project finance documented in regressions (2) and (5) is driven by borrowers in very healthy economies. In regression (7) political risk, economic performance, and the interactive term are significant. This implies that projects are more likely to be financed with project finance the higher political risk and the weaker economic performance. The interaction effect shows that improving economic performance decreases the preference for project finance less in politically risky countries. Regression (8) confirms the significance of these interactive effects in a more general setting. While the individual effects of political risk and economic performance remain unchanged from regression (5), there is evidence for an additional positive interactive effect.

Regarding the industries dummies and project specific control variables, we can observe that borrowers in the mining and transportation sectors prefer project finance. This, for example, explains the high project finance shares of 86% in Australia, 85% in Spain or 80% in Norway, which are substantially higher than those of other industrialized countries, such as the US (26%) or France (25%). Furthermore, borrowers are more likely to use project finance for investments with a longer life. This pattern is consistent with Kleimeier and Megginson (2000) who report that project finance loans whose median size is similar to that of fixed asset-based loans ($70 versus $60 million) but which have a longer maturity (8.6 versus 7.7 years).

[Insert Table 3 about here]

5.3 In-Depth Analysis of Bank Moral Hazard

Given the importance of bank moral hazard documented in Table 3, we wish to examine in more detail the relation between project finance and bank influence, and project finance and political risk. First, for bank influence we now use the aggregate market shares of all development banks including national ones. Comparing the results of regression (1) of Table 4 with our baseline result in regression (1) of Table 3

provides a first indication that NDBs have little influence. The coefficient of our new bank influence proxy including NDBs is smaller and less significant. In regression (2) of Table 4 we therefore look at the market share of each type of development bank separately. The insignificant coefficients for NDBs and MFIs indicate that neither group can influence political risk. Only MDBs appear to be able to influence political risk. These results might nonetheless be misleading if smaller development banks often only participate in loans together with leading development banks and derive their influence from these. Regression (3) therefore investigates the role of the six leading development banks in relation to all development banks. Here, we find that only the World Bank can significantly improve the syndicate's influence. And, indeed, it is the group of multilateral development banks that is influential. The insignificant coefficient of the aggregate market share of all development banks in regression (3) shows that a syndicate which does not include any of the top 6 development banks does not have any influence. Only the participation of the World Bank creates influence. The dominant role of the World Bank is confirmed when controlling for our other bank and firm moral hazard proxies in regression (4).

[Insert Table 4 about here]

Table 5 reports the results of our in-depth analysis of political risk by looking at the individual components of our political risk index. As outlined in section 4, our political risk proxy mainly reflects traditional political risk and regulatory risk.[12] The positive, significant coefficients for all components – except for political stability – are consistent with our earlier findings: under high political risk the borrower prefers project finance. The similar size of the significant coefficients – or more specifically the odds ratios associated with a one-standard-deviation increase in each political risk proxy – imply that all forms of

[12] According to Kaufmann et al. (2004), voice and accountability repflect "the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media". Political stability and absence of violence are based on the "perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including political violence and terrorism". Government effectiveness measures "the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies". Regulatory quality represents "the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development". Rule of law is "the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence". Finally, control of corruption reflects "the extent to which public power is exercised for private gain, includ-

political risk, except political stability, matter equally. So far, our analysis indicates that political risk can be managed with project finance. Other studies show that private contracts help mitigate the deficiencies of the legal system (Esty and Megginson 2003, Qian and Strahan 2007). Therefore, we wish to disentangle the influence of regulatory political risk, as measured by rule of law and regulatory quality, from that of traditional political risk, as measured by voice and accountability of the government, political stability, government effectiveness, and control of corruption. The results in regression (10) indicate that both types of political risk matter. Given that the use of project finance also varies systematically with bank influence, we interpret this result as evidence that the borrower uses project finance to give lenders an incentive to mitigate political risk. Thus, the choice of a particular contract is motivated both by the aim of curing institutional deficiencies and by the intention to mitigate political risk.

[Insert Table 5 about here]

5.4 Robustness Checks

We conduct additional analyses to test whether our main results are robust.[13] Firstly, we investigate whether our results in Tables 3 to 5 are driven by outliers. We exclude loans which fall into the the top and bottom 1% fractile for bank influence, political risk, economic performance and corporate governance, respectively. Replicating regressions (5) and (8) of Table 3, (1) to (4) of Table 4 and (9) and (10) of Table 5 shows that our findings are robust with one exception: bank influence. Here we find a positive, but insignificant, coefficient for our basic bank influence variables which includes the market shares of all multilateral development banks and multilateral financial institutions. The World Bank-based bank influence proxy is, however, significant. We conclude that a syndicate including development banks with moderate market shares does not generally have influence but only has this when the World Bank is part of the syndicate or – as the results of Table 4 show – when the syndicate's market share is substantial. Replicating regressions (9) and (10) from table 5 leads to robust results in the sense that both aspects of political risk, traditional and regulatory political risk, are significant. However, in line with the results

ing both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests".

[13] Detailed results are presented in Tables A1 to A5 of the Online Appendix.

from the replication of Table 4 above, only our World Bank based proxy of bank influence is significant.

Thirdly, we reconsider our findings of Table 4 regarding bank influence in the light of our observation from Table 1 that development banks are only present in certain countries. Is that a random outcome or is it the manifestation of conscious policy choices made by development banks? If the latter is the case, then bank influence is endogenous with regard to our other main proxies of political risk, economic performance, and corporate governance. To control for this possible endogeneity, we replicate Table 4 for two different samples. In the first sample, we include all loans to borrowers of a given country where there is at least one loan to a borrower of this country with a development bank in the syndicate. In the second sample, we are even more restrictive and include all loans to borrowers of a given country, and in a given year, where there is at least one loan to a borrower of this country, and in this year, with a development bank in the syndicate. For the first sample, we obtain the same results originally reported in Table 4. For the second sample, we find stronger evidence for bank influence, as now the coefficients of all three types of development banks are significant in regression (2). Our conclusions regarding the political influence of development banks and in particular the leading role of the World Bank are thus strengthend.

Fourthly, we consider the robustness of our corporate governance results. Our basic corporate governance proxy is a measure of the size of the stock and bank markets relative to the size of the economy. This very general proxy hypothesizes that managers in countries with a more developed financial sector are more controlled by active stockholders and bank lenders. We have chosen this proxy due to its time-varying nature and its availability for a large number of countries. Alternative corporate governance proxies are available for example from La Porta et al. (2006). These have the advantage of being more specific but are unfortunately not available for all countries included in our sample, nor do they vary over time. Based on La Porta et al. (2006) we consider the following alternative proxies which focus on the corporate governance role of the securities market: a disclosure requirements index reflecting the degree of information-provision in a prospectus; liability standard, orders and criminal indices reflecting the severity of the consequences arising from a misleading prospectus; supervisor characteristics, rule-making power and investigative power indices reflecting the independence and power of the supervisor; and finally a public

enforcement index as an overall measure of corporate governance.[14] When replicating regression (5) of Table 3 with each of these proxies, our original results, that better corporate governance is associated with less project finance, are confirmed. All alternative proxies except the criminal index have the expected negative coefficient and are significant.

Finally, we check the robustness of our main results of Tables 3 to 5 for two different samples. First, we consider an extended sample that also considers loans with purpose 'real estate' and includes an additional 944 loans as full-recourse loans. While project finance has been applied to real estate projects, the fact that the physical real estate asset provides excellent security in the event of default favors the use of full-recourse loans (Beidleman et al. 1990). Thus, this loan purpose is not considered for our original sample but only included as a robustness check. The results obtained from this extended sample are consistent with the results presented in this paper but the explanatory power of the regressions is slightly lower. Second, we consider a reduced sample which excludes loans to industrialized countries of Western Europe, North America, as well as Australia, Japan and New Zealand. Bank and firm moral hazard, i.e. political risk, are clearly less severe in these countries. By excluding these countries, we can assess whether our results are driven by the substantial difference between projects in industrialized and developing countries or also by the more subtle differences between projects in developing countries. We find find support for the latter as the main results of Tables 3 to 5 can be replicated for this reduced sample.

[14] The Disclosure requirements index reflects whether or not an issuer must provide a prospectus; and the degree of prospectus disclosure regarding executive compensation, equity ownership structure, inside ownership, the issuer's contracts outside the ordinary course of business, and transactions between the issuer and its directors, officers, and/or large shareholders. The Liability standard index reflects the procedural difficulty in recovering losses from the issuer, its directors, distributors or accountants in a civil liability case for losses due to misleading statements in the prospectus. The Supervisor characteristics index reflects (1) whether or not a majority of the members of the supervisor are unilaterally appointed by the executive branch of government; (2) whether or not members of the supervisor can be dismissed at the will of the appointing authority; (3) whether or not separate government agencies or official authorities are in charge of supervising commercial banks and stock exchanges. The Rule-making power index reflects the power of the supervisor to issue regulations regarding primary offerings and listing rules on stock exchanges. The Investigative powers index reflects the power of the supervisor to command documents and to subpoena the testimony of witnesses when investigating a violation of securities laws. The Orders index reflects stop and do orders that may be directed to the issuer, distributor and accountant in case of a defective prospectus. The Criminal index is an index of criminal sanctions applicable to the issuer's directors, distributor and accountant when the prospectus omits material information. The Public enforcement index is an overall measure of corporate governance and equals the arithmetic mean of the Supervisor characteristics index, Rule-making power index, Investigative powers index, Orders index and Criminal index.

There are however a few differences: While the dominant role of the World Bank in managing political risk is confirmed, we find a negative coefficient for national development banks, indicating that these development banks have no influence in developing countries and favor the use of full-recourse loans. In all three tables, the coefficients of the control variables describing the investment are also slightly different. While in our main sample, we find a preference for project finance for projects in the transportation and utility sectors, the opposite is true in developing countries. This difference might reflect the strong political commitment to project finance for public sector projects of governments in countries such as the UK. Furthermore, project finance is preferred not only for longer-term projects but also for larger and riskier projects in developing countries.

6. Conclusion

We started this paper with the question of how to finance projects in risky countries. We identified two main risk categories, operational and political risk, with the firm and the bank as their respective risk managers. The theoretical analysis shows that, when making the choice about the recourse structure (project finance versus full-recourse loan) that determines the incentives for firm and bank, the incentive effects must be traded off. The theory predicts that the higher – certeris paribus – political risk or bank influence, the more likely it is for an investment to be financed with project finance. All our predictions are confirmed by the empirical evidence. We also provide evidence that multilateral and national DBs act as political umbrellas, a notion often used by practitioners. Thus with specific reference to political risk, we confirm previous findings that the design of private contracts helps to mitigate deficits in a country's investor protection.

What are the lessons from our analysis for the parties involved in these deals? For *commercial lenders* and for *sponsors*, our findings regarding political umbrellas imply that they can strategically use the participation of DBs to reduce political risks. For *all lenders* and for *regulators*, our study shows that the degree of recourse has important incentive effects on the lenders that influence the probability of loan default. This particular feature of project finance should be recognized by regulators, for example when de-

termining capital adequacy. For *all participants*, our study shows that when making an appropriate choice of the loan contract and, in particular, of the recourse structure, even investments in high-risk countries can become feasible.

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Table 1

Descriptive statistics on bank and firm moral hazard

This table describes our four proxies of bank and firm moral hazard. The focus of Panel A is on bank influence and lists financial institutions, which we caterorize according to World Bank's guidelines as multilateral development banks (MDBs) or multilateral financial institutions (MFIs) and their total syndicated lending activities between January 1, 1993 and December 31, 2005. The table also lists all national development banks (NDBs) with more than $1,000 million in funding and more than 100 syndicated loans during this period. We only report those institutions that participate in the syndicate of at least one of our 4,549 asset-based loans. We report the funded amount in millions of 2005 real US dollars and measure the project finance share as the number of project finance loans in percent of the number of all syndicated loans. In Panel B, we measure bank influence as the volume of syndicated loans funded by multilateral development banks and multilateral financial institutions in percent of the total volume of syndicated loans. We measure economic performance with Euromoney's economic performance index which includes current GDP per capita figures and a poll of economic projections. We define corporate governance as the equally weighted average of stock market capitalization and domestic credit to the private sector, both as a percentage of GDP. We use the average of six measures of political risk - voice and accountability of the government, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption - from The World Bank's Worldwide Governance Research Indicators Data Set to measure political risk.

Panel A: Syndicated lending by development banks

		Syndicated lending by development banks			
Development bank	Category	Funded amount (real $m)	Number of loans	Project finance share	Inclusion in the bank influence proxy
Kreditanstalt für Wiederaufbau (KfW)	NDB	33,387	878	19.6%	no
European Bank for Reconstruction & Development (EBRD)	MDB	32,076	300	48.7%	yes
Japan Bank for International Cooperation (JBIC)	NDB	23,848	127	39.4%	no
Korea Development Bank (KDB)	NDB	20,857	961	11.4%	no
World Bank (WB, incl. IBRD and IFC)	MDB	13,041	433	46.2%	yes
Export Development Canada (EDC)	NDB	11,442	434	20.7%	no
European Investment Bank	MFI	8,245	82	65.9%	yes
Export-Import Bank of Korea	NDB	6,059	199	9.0%	no
Asian Development Bank	MDB	3,797	49	79.6%	yes
Internationale Nederlanden Bank NV	NDB	3,477	129	3.9%	no
Export-Import Bank of the Republic of China	NDB	1,209	179	7.8%	no
Nordic Investment Bank	MFI	939	50	22.0%	yes
Corporacion Andina de Fomento	MDB (subregional)	611	25	16.0%	yes
Inter-American Development Bank	MDB	591	22	72.7%	yes
Islamic Development Bank	MFI	405	11	27.3%	yes
Central American Bank for Economic Integration	MDB (subregional)	37	3	33.3%	yes
OPEC Fund	MFI	20	2	50.0%	yes

Table 1 continued
Descriptive statistics on bank and firm moral hazard

Panel B: Variations in bank and firm moral hazard

	Bank moral hazard		Firm moral hazard	
	Bank influence	Political risk	Economic performance	Corporate Governance
Mean	0.09	3.05	71.18	128.06
Median	0.00	2.68	76.88	144.80
Maximum	41.74	5.61	100.00	301.88
Minimum	0.00	2.07	1.84	1.72
Standard deviation	1.47	0.72	18.87	66.07
number of loans	4,549	4,549	4,549	4,549

Table 2
The geographic distribution of project finance and full-recourse loans
The table reports descriptive statistics for the 4,549 project finance and full-recourse loans signed between January 1, 1996 and December 31, 2005. Average characteristics across all loans are reported by regions. We report total loan volumes in terms of real 2005 US dollars. We report the project finance share as the number of project finance loans in percent of the number of all project finance and full-recourse loans. We measure bank influence as the volume of syndicated loans funded by multilateral development banks and multilateral financial institutions in percent of the total volume of syndicated loans. We measure economic performance with Euromoney's economic performance index which includes current GDP per capita figures and a poll of economic projections. We define corporate governance as the equally weighted average of stock market capitalization and domestic credit to the private sector, both as a percentage of GDP. We use the average of six measures of political risk - voice and accountability of the government, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption - from The World Bank's Worldwide Governance Research Indicators Data Set to measure political risk. Industries are defined based on 4-digit SIC codes of the borrower. Other industries also includes those loans for which the borrower's SIC code is missing.

	Asset-based syndicated loans					Average characteristics across all loans									
	Loan volume (real $m)		Number of loans							Fraction of syndicated loans per industry					
Region	Project finance	Full-recourse	Project finance	Full-recourse	Project finance share	Bank influence	Political risk	Economic performance	Corporate governance	Mining	Manufacturing	Transportation	Trade	Services	Other
Africa	3,193	950	23	11	67.6%	0.00	4.42	28.29	53.88	41%	0%	50%	0%	0%	9%
Asia	90,073	51,116	706	410	63.3%	0.05	3.64	61.28	89.93	7%	30%	35%	2%	4%	22%
Eastern Europe & CIS	19,843	6,628	127	38	77.0%	1.84	3.84	40.62	23.95	16%	14%	55%	1%	1%	14%
Latin America & Caribbean	32,214	2,908	128	14	90.1%	0.13	3.93	43.09	33.46	39%	18%	37%	3%	1%	2%
Middle East & Turkey	74,629	5,929	192	20	90.6%	0.00	3.95	44.50	36.38	11%	30%	40%	1%	1%	17%
North America	101,360	282,779	546	1,518	26.5%	0.00	2.63	85.07	182.74	5%	27%	25%	12%	20%	11%
Western Europe	129,964	113,892	556	260	68.1%	0.05	2.68	69.41	106.33	3%	13%	50%	7%	10%	18%
Global	451,277	464,202	2,278	2,271	50.1%	0.09	3.05	71.18	128.06	7%	25%	34%	7%	12%	15%

Table 3

The determinants of the use of project finance

This table shows logit regression results for our main proxies of bank and firm moral hazard. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistic. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis in regressions (5) to (8) to remove the correlation between political risk, corporate governance and economic performance. Our dependent variable is a dummy which takes the value of 1 for a project finance loan and 0 for a full-recourse loan. We measure bank influence as the volume of syndicated loans funded by multilateral development banks and multilateral financial institutions in percent of the total volume of syndicated loans. We measure economic performance with Euromoney's economic performance index which includes current GDP per capita figures and a poll of economic projections. We define corporate governance as the equally weighted average of stock market capitalization and domestic credit to the private sector, both as a percentage of GDP. We use the average of six measures of political risk - voice and accountability of the government, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption - from The World Bank's Worldwide Governance Research Indicators Data Set to measure political risk. In regressions (6) and (7) dummies are coded as 1 if a given observation falls into the top-25% fractile of the distribution for political risk or economic health. We include investment characteristics as control variables: Industries are defined based on 4-digit SIC codes of the borrower. Other industries also includes those loans for which the borrower's SIC code is missing. The size of the investment that is financed proxied by the real deal size in billions of US dollar, the life of the investment that is financed proxied by the maximum maturity across all loan tranches belonging to the same deal and measured in years, and borrower risk measured as the residual from a regression of loan spread on bank influence, political risk, economic health, corporate governanceas well as loan features (dummies indicating whether or not the loan is priced over LIBOR, is guaranteed, has financial or general covenants, is denominated in a currency different from home currency of borrower, loan maturity in years, and real loan size in billions of US dollar).

	Dependent variable: Project finance dummy							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-1.25 ***	-3.20 ***	0.94 ***	0.46 ***	-0.96 ***	-0.97 ***	-0.93 ***	-0.93 ***
	216.09	274.73	26.25	14.61	117.58	120.26	109.86	109.08
Bank influence	0.99 **				0.50 *	0.48 *	0.49 *	0.48 *
	5.66				2.75	2.85	2.68	2.86
Political risk		0.63 ***			0.13 ***	0.04	0.14 ***	0.13 ***
		133.69			13.01	0.97	14.33	12.87
Economic performance			-0.03 ***		-0.33 ***	-0.37 ***	-0.46 ***	-0.44 ***
			175.37		71.37	82.72	49.84	97.83
Corporate governance				-0.01 ***	-0.70 ***	-0.69 ***	-0.69 ***	-0.69 ***
				364.99	312.15	302.08	304.67	301.55
Political risk*economic performance$_{D=high}$						0.29 ***		
						11.49		
Economic performance*political risk$_{D=high}$							0.20 **	
							6.49	
Political risk*economic performance								0.18 ***
								27.77
Industry dummies								
Mining	1.33 ***	1.29 ***	1.20 ***	1.12 ***	1.07 ***	1.09 ***	1.10 ***	1.12 ***
	79.48	72.97	62.77	54.01	49.55	51.10	51.36	53.99
Transportation & utilties	0.80 ***	0.92 ***	0.78 ***	0.90 ***	0.84 ***	0.84 ***	0.84 ***	0.84 ***
	74.63	93.90	68.38	89.13	75.40	75.86	75.10	74.59
Trade	-0.95 ***	-0.70 ***	-0.79 ***	-0.67 ***	-0.74 ***	-0.74 ***	-0.73 ***	-0.73 ***
	28.32	15.47	19.67	14.25	17.07	17.19	16.88	16.53
Services	-0.24 *	0.05	-0.01	0.16	0.10	0.11	0.11	0.12
	3.58	0.14	0.01	1.48	0.57	0.71	0.71	0.81
Other	2.21 ***	2.34 ***	2.26 ***	2.46 ***	2.41 ***	2.42 ***	2.42 ***	2.41 ***
	275.19	301.26	284.81	325.50	314.94	313.68	314.75	312.46
Investment characteristics								
Investment size	-0.02	-0.01	-0.02	-0.02	-0.03	-0.03	-0.03	-0.03
	0.96	0.47	1.35	1.44	1.92	1.97	2.18	2.09
Investment life	0.09 ***	0.08 ***	0.07 ***	0.05 ***	0.04 ***	0.04 ***	0.04 ***	0.04 ***
	127.51	115.39	73.95	39.64	28.04	24.67	24.75	22.18
Borrower risk*1000	-0.15	-0.12	-0.12	-0.17	-0.19	-0.20	-0.17	-0.17
	0.57	0.50	0.58	0.83	0.94	1.00	0.82	0.80
Maximum-rescaled R^2	0.259	0.290	0.303	0.355	0.361	0.364	0.363	0.368
Number of observations	4,549	4,549	4,549	4,549	4,549	4,549	4,549	4,549

Table 4
An in-depth analysis of the role of bank influence as part of bank moral hazard
This table shows logit regression results regarding the impact of specific manifestations of bank influence by looking at the three different categories of development banks and the top 5 individual development banks as defined in Table 1. The development bank dummies are coded as 1 if the respective development bank is part of the syndicate for at least one of the loans belonging to the same deal, and zero otherwise. See notes to Table 3 for the definitions of the remaining variables. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistics. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis in regression (4) to remove the correlation between political risk, corporate governance and economic performance.

	Dependent variable: Project finance dummy			
	(1)	(2)	(3)	(4)
Constant	-1.24 ***	-1.26 ***	-1.31 ***	-0.96 ***
	211.81	217.02	232.20	117.16
Aggregate market share of all DBs: MDBs, MFIs, and NDBs	0.06 *		0.43	
	2.88		0.65	
Aggregate market share of all MDBs		0.95 **		
		5.49		
Aggregate market share of all MFIs		6.74		
		1.73		
Aggregate market share of all NDBs		-0.04		
		1.65		
Aggregate market share of all DBs * KfW dummy			-0.10	
			0.04	
Aggregate market share of all DBs * EBRD dummy			0.08	
			0.03	
Aggregate market share of all DBs * JBIC dummy			-0.56	
			1.10	
Aggregate market share of all DBs * KDB dummy			-0.13	
			0.06	
Aggregate market share of all DBs * WB dummy			3.95 **	3.10 **
			4.61	4.39
Aggregate market share of all DBs * EDC dummy			1.14	
			0.87	
Political risk				0.13 ***
				11.72
Economic performance				-0.34 ***
				74.41
Corporate governance				-0.71 ***
				318.63
Industry dummies				
Mining	1.34 ***	1.33 ***	1.36 ***	1.10 ***
	81.11	79.20	82.60	52.08
Transportation & utilties	0.80 ***	0.80 ***	0.82 ***	0.85 ***
	74.52	73.63	77.65	77.26
Trade	-0.96 ***	-0.96 ***	-0.90 ***	-0.73 ***
	28.83	28.94	25.52	16.66
Services	-0.25 **	-0.25 *	-0.19	0.11
	3.80	3.72	2.27	0.69
Other	2.20 ***	2.22 ***	2.28 ***	2.43 ***
	271.93	275.80	287.78	318.30
Investment characteristics				
Investment size	-0.02	-0.02	-0.02	-0.03
	1.06	0.98	1.04	1.95
Investment life	0.09 ***	0.09 ***	0.09 ***	0.04 ***
	124.87	128.48	128.69	26.29
Borrower risk*1000	-0.13	-0.17	-0.20	-0.20
	0.48	0.69	0.89	1.00
Maximum-rescaled R^2	0.252	0.259	0.272	0.363
Number of observations	4,549	4,549	4,549	4,549

Table 5

An in-depth analysis of the role of political risk as part of bank moral hazard

This table shows logit regression results regarding the impact of specific manifestations of political risk by looking at the six individual measures provided by The World Bank's Worldwide Governance Research Indicators Data Set. Regulatory political risk is measured as the average of regulatory quality and rule of law. Traditional political risk is measured as the average of the remaining four individual measures of political risk. See notes to Table 3 for the definitions of the remaining variables. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistics. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis in regressions (9) and (10) to remove the correlation between corporate governance, economic performance and political risk. The odds ratio is defined as the probability of a loan being structured as a project finance loan divided by the probability of a loan being structured as a full-recourse loan.We consider the odds ratio associated with a one standard deviation change in the respective political risk proxy.

	Dependent variable: Project finance dummy									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	-2.66 ***	-2.88 ***	-1.04 ***	-3.36 ***	-3.76 ***	-2.98 ***	-3.38 ***	-3.06 ***	-0.98 ***	-0.95 ***
	315.89	303.90	19.44	324.78	313.48	322.38	323.97	249.31	122.93	116.48
Control of corruption	0.49 ***									
	142.33									
Government effectiveness		0.59 ***								
		142.17								
Political stability			-0.05							
			0.85							
Voice and accountability				0.62 ***						
				171.17						
Regulatory quality					0.84 ***					
					176.06					
Rule of law						0.60 ***				
						157.01				
Regulatory political risk							0.73 ***		0.18 ***	
							172.19		23.95	
Traditional political risk								0.57 ***		0.11 ***
								113.87		9.01
Bank influence									0.50 *	0.50 *
									2.79	2.72
Economic performance									-0.32 ***	-0.33 ***
									66.23	73.34
Corporate governance									-0.68 ***	-0.71 ***
									300.25	316.61
Industry dummies										
Mining	1.29 ***	1.26 ***	1.34 ***	1.40 ***	1.28 ***	1.26 ***	1.27 ***	1.30 ***	1.09 ***	1.07 ***
	72.68	69.58	81.57	84.96	70.76	69.47	69.48	74.71	50.94	49.04
Transportation & utilties	0.89 ***	0.90 ***	0.79 ***	1.00 ***	0.94 ***	0.90 ***	0.92 ***	0.91 ***	0.86 ***	0.83 ***
	89.47	90.32	72.56	107.66	97.37	90.86	94.48	93.05	78.89	74.33
Trade	-0.70 ***	-0.70 ***	-0.98 ***	-0.61 ***	-0.65 ***	-0.70 ***	-0.67 ***	-0.73 ***	-0.72 ***	-0.74 ***
	15.50	15.42	29.64	11.56	13.29	15.49	14.02	16.57	16.18	17.33
Services	0.04	0.04	-0.27 **	0.12	0.09	0.05	0.08	0.02	0.12	0.09
	0.11	0.09	4.35	0.91	0.50	0.18	0.42	0.03	0.82	0.49
Other	2.34 ***	2.35 ***	2.20 ***	2.36 ***	2.41 ***	2.34 ***	2.38 ***	2.32 ***	2.42 ***	2.42 ***
	301.10	302.52	270.44	305.30	316.29	301.39	309.35	297.21	315.37	315.30
Investment characteristics										
Investment size	-0.02	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.03
	0.58	0.50	1.19	0.47	0.48	0.38	0.40	0.51	1.79	1.94
Investment life	0.08 ***	0.08 ***	0.09 ***	0.08 ***	0.08 ***	0.08 ***	0.08 ***	0.09 ***	0.04 ***	0.04 ***
	113.46	112.25	131.37	113.58	109.10	109.32	108.21	118.28	29.79	27.77
Borrower risk*1000	-0.17	-0.17	-0.06	-0.19	-0.20	-0.19	-0.20	-0.16	-0.20	-0.18
	0.86	0.79	0.16	1.17	1.06	1.02	1.08	0.77	1.04	0.90
Odds ratio	1.583	1.588	0.967	1.698	1.703	1.631	1.679	1.510	1.200	1.117
Maximum-rescaled R^2	0.292	0.292	0.251	0.303	0.303	0.297	0.302	0.284	0.360	0.362
Number of observations	4,549	4,549	4,549	4,549	4,549	4,549	4,549	4,549	4,549	4,549

Online Appendix

Proof of Proposition 4:

Equation (7) $\left(\bar{p}-\underline{p}\right)\underline{q}X-b>\underline{p}\left(\bar{q}-\underline{q}\right)X-e$ can be rewritten as $\left(\underline{q}\bar{p}-\underline{p}\bar{q}\right)X-b+e>0.$ We are interested in the effects of a change in political and in operational risk. The following derivatives show the effect

(1) of a change in political risk $\underline{p}$

$$\frac{\partial\left(\left(\underline{q}\bar{p}-\underline{p}\bar{q}\right)X-b+e\right)}{\partial\underline{p}}=-\bar{q}X<0.$$

Political risk is low if $\underline{p}$ is high. This means as political risk increases, the preference for a project finance loan increases. This increase is higher, the higher $\bar{q}$.

(2) of a change in operational risk $\bar{q}$

$$\frac{\partial\left(\left(\underline{q}\bar{p}-\underline{p}\bar{q}\right)X-b+e\right)}{\partial\bar{q}}=-\underline{p}X<0.$$

Operational risk is high if $\bar{q}$ is high. This means as operational risk increases, the preference for a project finance loan decreases. This decrease is higher, the higher $\underline{p}$. Q.E.D.

Table A1

Robustness checks based on a sample which excludes outliers

This table shows robustness checks of selected logit regressions presented in Tables 3 to 5. See these tables for the definition of variables. We exclude observations in the top 1% fractile for bank influence and in top and bottom 1% fractile for political risk, corporate governance and economic health, each. We also present an alternative version of regression (9) and (10) of Table 5 using our World Bank-based influence proxy instead of the basic bank influence proxy. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistics. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis to remove the correlation between corporate governance, economic performance and all included political risk proxies.

	Dependent variable: Project finance dummy											
Replication of	Table 3 Reg (5)	Table 3 Reg (6)	Table 3 Reg (7)	Table 3 Reg (8)	Table 4 Reg (1)	Table 4 Reg (2)	Table 4 Reg (3)	Table 4 Reg (4)	Table 5 Reg (9)	Table 5 Reg (9*)	Table 5 Reg (10)	Table 5 Reg (10*)
Constant	-0.99 ***	-0.99 ***	-0.96 ***	-0.94 ***	-1.25 ***	-1.26 ***	-1.32 ***	-0.99 ***	-1.01 ***	-1.02 ***	-0.98 ***	-0.98 ***
	118.68	120.41	111.34	106.83	207.72	212.00	227.33	118.60	125.18	125.21	117.17	117.10
Bank influence	0.46	0.44	0.45	0.45					0.45		0.46	
	2.33	2.36	2.27	2.42					2.34		2.31	
Political risk	0.15 ***	0.08 *	0.16 ***	0.15 ***				0.15 ***				
	16.92	2.79	18.03	15.54				15.14				
Economic performance	-0.36 ***	-0.39 ***	-0.46 ***	-0.46 ***				-0.36 ***	-0.34 ***	-0.35 ***	-0.36 ***	-0.37 ***
	81.26	89.44	49.95	100.52				84.06	74.87	77.42	83.74	86.62
Corporate governance	-0.70 ***	-0.69 ***	-0.70 ***	-0.69 ***				-0.71 ***	-0.69 ***	-0.69 ***	-0.71 ***	-0.72 ***
	312.57	302.45	309.77	301.82				318.86	298.11	303.81	318.27	324.54
Political risk*economic performance$_{D=high}$		0.24 ***										
		8.13										
Economic performance*political risk$_{D=high}$			0.17 **									
			4.34									
Political risk*economic performance				0.17 ***								
				20.61								
Aggregate market share of all DBs:					0.04		0.42					
MDBs, MFIs, and NDBs					1.62		0.56					
Aggregate market share of all MDBs						0.96 **						
						5.54						
Aggregate market share of all MFIs						3.12						
						0.41						
Aggregate market share of all NDBs						-0.04						
						1.51						
Aggregate market share of all DBs * KfW dummy							-0.04					
							0.01					
Aggregate market share of all DBs * EBRD dummy							0.08					
							0.03					
Aggregate market share of all DBs * JBIC dummy							-0.55					
							0.97					
Aggregate market share of all DBs * KDB dummy							-0.12					
							0.04					
Aggregate market share of all DBs * WB dummy							3.99 **	3.04 **		2.93 **		3.06 **
							4.66	4.37		4.18		4.38
Aggregate market share of all DBs * EDC dummy							1.18					
							0.89					
Regulatory political risk									0.21 ***	0.20 ***		
									31.15	29.27		
Traditional political risk											0.13 ***	0.12 ***
											11.73	10.18
Industry dummies												
Mining	1.11 ***	1.12 ***	1.12 ***	1.14 ***	1.31 ***	1.30 ***	1.33 ***	1.13 ***	1.13 ***	1.15 ***	1.10 ***	1.12 ***
	50.02	51.06	51.03	52.21	73.69	72.33	75.60	51.88	51.69	53.54	49.46	51.28
Transportation & utilties	0.86 ***	0.86 ***	0.85 ***	0.84 ***	0.80 ***	0.80 ***	0.82 ***	0.87 ***	0.88 ***	0.89 ***	0.85 ***	0.86 ***
	74.88	74.82	73.78	71.23	72.21	70.92	74.57	76.69	78.84	80.80	73.65	75.38
Trade	-0.69 ***	-0.70 ***	-0.69 ***	-0.70 ***	-0.96 ***	-0.95 ***	-0.89 ***	-0.69 ***	-0.67 ***	-0.66 ***	-0.70 ***	-0.69 ***
	14.76	14.98	14.75	14.84	27.99	27.69	24.59	14.42	13.76	13.40	15.08	14.73
Services	0.15	0.16	0.16	0.16	-0.24 *	-0.23 *	-0.18	0.16	0.18	0.19	0.15	0.16
	1.37	1.47	1.50	1.45	3.47	3.29	1.88	1.54	1.84	2.06	1.22	1.39
Other	2.43 ***	2.42 ***	2.42 ***	2.41 ***	2.23 ***	2.24 ***	2.31 ***	2.44 ***	2.44 ***	2.45 ***	2.43 ***	2.44 ***
	305.24	302.54	303.68	299.97	264.95	267.76	280.05	308.65	306.97	310.25	305.14	308.50
Investment characteristics										-0.03		
Investment size	-0.03	-0.03	-0.03	-0.03	-0.02	-0.02	-0.02	-0.03	-0.02	1.94	-0.03	-0.03
	2.06	2.09	2.28	2.19	1.12	1.04	1.11	2.09	1.91	0.04 ***	2.10	2.13
Investment life	0.04 ***	0.04 ***	0.04 ***	0.04 ***	0.09 ***	0.09 ***	0.09 ***	0.04 ***	0.04 ***	26.07	0.04 ***	0.04 ***
	25.59	23.09	22.81	19.73	119.47	121.98	121.95	23.91	27.68	-0.16	25.16	23.53
Borrower risk*1000	-0.14	-0.14	-0.12	-0.12	-0.11	-0.14	-0.17	-0.15	-0.15	0.76	0.00	-0.14
	0.63	0.65	0.52	0.47	0.35	0.51	0.68	0.70	0.73		0.60	0.62
Maximum-rescaled R^2	0.367	0.369	0.368	0.372	0.253	0.259	0.272	0.369	0.365	0.367	0.368	0.370
Number of observations	4,374	4,374	4,374	4,374	4,374	4,374	4,374	4,374	4,374	4,374	4,374	4,374

Table A2

Robustness check for the in-depth analysis of the role of bank influence as part of bank moral hazard

This table shows robustness checks of the logit regressions presented in Table 4 which take possible endogeneity between the presence of a development bank and the country of the borrower into account. See this table for the definition of variables. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistics. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis to remove the correlation between corporate governance, economic performance and all included political risk proxies. In Panel A, we include all loans to borrowers of a given country when there is at least one loan to a borrower of this country with a development bank in the syndicate. In Panel B, we include all loans to borrowers of a given country and in a given year when there is at least one loan to a borrower of this country and in this year with a development bank in the syndicate. In both panels, we consider multilateral development banks, multilateral financial institutions and national development banks.

Panel A: Sample selection based on borrower nationality only

	Dependent variable: Project finance dummy			
	(1)	(2)	(3)	(4)
Constant	-1.24 ***	-1.25 ***	-1.32 ***	-0.92 ***
	194.78	199.95	215.46	98.05
Aggregate market share of all DBs: MDBs, MFIs, and NDBs	0.07 *		0.51	
	3.68		0.85	
Aggregate market share of all MDBs		1.01 **		
		5.93		
Aggregate market share of all MFIs		6.85		
		1.79		
Aggregate market share of all NDBs		-0.03		
		0.91		
Aggregate market share of all DBs * KfW dummy			-0.11	
			0.05	
Aggregate market share of all DBs * EBRD dummy			0.04	
			0.01	
Aggregate market share of all DBs * JBIC dummy			-0.63	
			1.31	
Aggregate market share of all DBs * KDB dummy			-0.20	
			0.12	
Aggregate market share of all DBs * WB dummy			4.12 **	3.25 **
			4.86	4.74
Aggregate market share of all DBs * EDC dummy			1.21	
			0.91	
Political risk				0.08 **
				4.65
Economic performance				-0.39 ***
				87.30
Corporate governance				-0.77 ***
				321.61
Industry dummies				
Mining	1.20 **	1.18 ***	1.21 ***	0.93 ***
	55.96	53.85	56.30	31.71
Transportation & utilties	0.83 ***	0.82 ***	0.86 ***	0.86 ***
	71.55	70.71	74.98	70.56
Trade	-0.90 ***	-0.90 ***	-0.83 ***	-0.60 ***
	22.75	22.93	19.67	10.32
Services	-0.21	-0.21	-0.15	0.17
	2.52	2.48	1.24	1.67
Other	2.29 ***	2.31 ***	2.38 ***	2.52 ***
	269.81	273.85	287.00	312.04
Investment characteristics				
Investment size	-0.02	-0.02	-0.02	-0.03 *
	1.31	1.22	1.29	3.01
Investment life	0.08 ***	0.08 ***	0.08 ***	0.03 ***
	94.24	97.34	96.93	10.03
Borrower risk*1000	-0.25	-0.31	-0.38	-0.29
	1.10	1.53	1.98	1.51
Maximum-rescaled R^2	0.250	0.258	0.273	0.375
Number of observations	4,112	4,112	4,112	4,112

Table A2 continued

Robustness check for the in-depth analysis of the role of bank influence as part of bank moral hazard

Panel B: Sample selection based on borrower nationality and year of loan signing

	Dependent variable: Project finance dummy			
	(1)	(2)	(3)	(4)
Constant	-1.02 ***	-1.04 ***	-1.16 ***	-1.05 ***
	109.50	113.31	133.83	106.73
Aggregate market share of all DBs: MDBs, MFIs, and NDBs	0.16 ***		1.05 *	
	14.41		3.45	
Aggregate market share of all MDBs		1.49 ***		
		9.26		
Aggregate market share of all MFIs		8.42 *		
		2.64		
Aggregate market share of all NDBs		0.07 *		
		3.04		
Aggregate market share of all DBs * KfW dummy			-0.18	
			0.15	
Aggregate market share of all DBs * EBRD dummy			-0.34	
			0.49	
Aggregate market share of all DBs * JBIC dummy			-1.08 *	
			3.66	
Aggregate market share of all DBs * KDB dummy			-0.65	
			1.28	
Aggregate market share of all DBs * WB dummy			5.34 ***	3.55 **
			6.77	5.24
Aggregate market share of all DBs * EDC dummy			1.50	
			1.15	
Political risk				0.21 ***
				19.46
Economic performance				-0.52 ***
				98.84
Corporate governance				-0.70 ***
				202.12
Industry dummies				
Mining	1.06 ***	1.03 ***	1.08 ***	0.94 ***
	25.99	24.16	25.64	19.06
Transportation & utilties	1.01 ***	1.01 ***	1.06 ***	0.98 ***
	67.67	67.22	72.07	55.69
Trade	-1.19 ***	-1.20 ***	-1.07 ***	-0.81 ***
	21.72	22.20	18.05	10.40
Services	-0.09	-0.08	0.03	0.33 *
	0.27	0.25	0.04	3.71
Other	2.32 ***	2.34 ***	2.49 ***	2.37 ***
	186.10	189.44	207.95	190.05
Investment characteristics				
Investment size	0.00	0.00	0.00	-0.01
	0.00	0.01	0.00	0.20
Investment life	0.00	0.00	0.00	0.00
	0.38	0.38	0.42	0.31
Borrower risk*1000	-0.90 **	-1.14 ***	-1.32 ***	-1.19 ***
	6.08	9.38	12.26	8.98
Maximum-rescaled R^2	0.229	0.244	0.276	0.383
Number of observations	2,582	2,582	2,582	2,582

Table A3

Robustness check for the role of corporate governance as part of firm moral hazard

This table shows robustness checks of the logit regression (5) in Table 3 using different corporate governance proxies. The alternative corporate governance proxies are obtained from La Porta et al. (2006). Higher values indicate better corporate governance. See Table 3 for the definition of the remaining variables. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistics. *, **, and *** indicate signifi cance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis to remove the correlation between corporate governance, economic performance and political risk.

	Dependent variable: Project finance share							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-1.06 ***	-1.19 ***	-1.16 ***	-1.29 ***	-1.25 ***	-1.19 ***	-1.31 ***	-1.18 ***
	120.56	156.25	147.07	186.46	174.49	157.03	188.99	151.58
Corporate governance indices								
Disclosure requirements	-0.78 ***							
	292.78							
Liability standard		-0.60 ***						
		207.27						
Supervisor characteristics			-0.49 ***					
			136.76					
Rule-making power				-0.21 ***				
				27.70				
Investigative powers					-0.32 ***			
					66.72			
Orders						-0.55 ***		
						175.18		
Criminal							0.00	
							0.00	
Public enforcement								-0.50 ***
								141.01
Bank influence	3.72 ***	4.14 ***	3.51 **	3.74 **	3.73 **	3.93 **	3.64 **	3.87 **
	7.77	6.59	5.42	5.34	5.61	6.36	5.15	6.11
Political risk	0.11 ***	0.16 ***	0.18 ***	0.20 ***	0.21 ***	0.11 ***	0.20 ***	0.16 ***
	8.05	17.37	22.30	26.93	28.62	8.25	25.03	18.24
Economic performance	-0.35 ***	-0.34 ***	-0.39 ***	-0.43 ***	-0.42 ***	-0.41 ***	-0.46 ***	-0.39 ***
	73.50	70.88	91.29	106.84	103.16	97.32	118.17	91.36
Industry dummies								
Mining	1.24 ***	1.34 ***	1.33 ***	1.37 ***	1.34 ***	1.40 ***	1.34 ***	1.39 ***
	54.45	64.25	63.96	68.45	65.64	72.13	65.54	71.31
Transportation & utilties	1.01 **	1.05 ***	1.02 ***	0.99 ***	0.96 ***	1.00 ***	0.98 ***	1.01 ***
	91.56	97.51	94.27	89.96	85.12	90.50	87.60	92.27
Trade	-0.69 ***	-0.64 ***	-0.61 ***	-0.67 ***	-0.66 ***	-0.64 ***	-0.67 ***	-0.67 ***
	13.14	11.51	10.61	12.97	12.46	11.50	12.63	12.85
Services	0.20	0.23 *	0.14	0.11	0.12	0.17	0.10	0.13
	2.06	2.73	0.97	0.66	0.74	1.46	0.51	0.93
Other	2.56 ***	2.59 ***	2.52 ***	2.50 ***	2.51 ***	2.53 ***	2.49 ***	2.54 ***
	323.87	331.14	314.32	310.55	313.20	318.19	308.69	318.96
Investment characteristics								
Investment size	-0.03 *	-0.03 **	-0.03	-0.03	-0.03 *	-0.04 **	-0.02	-0.04 **
	3.71	3.92	2.43	2.00	3.23	5.01	1.70	4.35
Investment life	0.02 **	0.03 ***	0.03 ***	0.05 ***	0.05 ***	0.04 ***	0.06 ***	0.04 ***
	6.08	14.48	12.49	42.22	36.36	22.17	46.84	17.72
Borrower risk*1000	-0.89 ***	-0.90 ***	-1.01 ***	-0.88 ***	-0.80 ***	-0.75 **	-0.80 ***	-0.87 ***
	9.13	9.24	11.83	8.91	7.35	6.49	7.39	8.61
Maximum-rescaled R^2	0.384	0.358	0.343	0.321	0.329	0.352	0.318	0.343
Number of observations	4,035	4,035	4,035	4,035	4,035	4,035	4,035	4,035

Table A4

Robustness checks for an alternative definition of full-recourse asset-based loans

This table shows robustness checks of the logit regressions in Tables 3, 4 and 5 using an extended sample which includes real estate loans as additional full-recourse loans. See notes to Tables 3 to 5. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistic. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis to remove the correlation between political risk, corporate governance and economic performance.

Panel A: Robustness check for Table 3

	Dependent variable: Project finance dummy							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-1.50 ***	-3.73 ***	1.26 ***	0.40 ***	-1.25 ***	-1.30 ***	-1.24 ***	-1.22 ***
	319.34	403.32	52.45	12.37	212.98	226.72	207.93	202.80
Bank influence	1.04 **				0.48 *	0.44 *	0.47 *	0.46 *
	6.17				2.71	3.02	2.67	2.91
Political risk		0.72 ***			0.15 ***	-0.03	0.16 ***	0.16 ***
		192.73			21.17	0.60	22.95	24.88
Economic performance			-0.04 ***		-0.47 ***	-0.57 ***	-0.56 ***	-0.63 ***
			312.07		172.72	224.37	86.86	235.71
Corporate governance				-0.01 ***	-0.73 ***	-0.71 ***	-0.73 ***	-0.71 ***
				500.71	404.74	386.16	401.46	390.90
Political risk*economic performance$_{D=high}$						0.58 ***		
						57.25		
Economic performance*political risk$_{D=high}$							0.14 *	
							3.67	
Political risk*economic performance								0.24 ***
								66.86
Industry dummies								
Mining	1.34 ***	1.31 ***	1.20 ***	1.12 ***	1.06 ***	1.11 ***	1.07 ***	1.14 ***
	79.01	72.17	60.66	51.75	45.94	50.24	47.00	53.28
Transportation & utilties	0.74 ***	0.87 ***	0.73 ***	0.86 ***	0.77 ***	0.78 ***	0.76 ***	0.76 ***
	62.50	82.75	58.73	78.22	61.86	63.54	61.06	61.13
Trade	-0.95 ***	-0.67 ***	-0.76 ***	-0.64 ***	-0.73 ***	-0.75 ***	-0.74 ***	-0.73 ***
	27.49	13.57	17.57	12.80	16.39	16.90	16.41	16.14
Services	-0.32 **	-0.01	-0.05	0.09	0.02	0.03	0.03	0.04
	6.34	0.00	0.16	0.51	0.04	0.06	0.05	0.10
Other	0.26 ***	0.44 ***	0.48 ***	0.58 ***	0.57 ***	0.59 ***	0.56 ***	0.59 ***
	7.59	20.63	24.61	34.51	33.73	35.77	32.61	36.06
Investment characteristics								
Investment size	0.01	0.02	0.00	0.00	0.00	0.00	0.00	-0.01
	0.18	0.46	0.02	0.03	0.02	0.03	0.04	0.07
Investment life	0.12 ***	0.12 ***	0.09 ***	0.08 ***	0.06 ***	0.06 ***	0.06 ***	0.06 ***
	283.03	265.50	160.83	117.64	80.96	68.00	76.76	65.05
Borrower risk*1000	-0.12	-0.10	-0.10	-0.13	-0.13	-0.15	-0.13	-0.11
	0.42	0.36	0.40	0.55	0.61	0.72	0.54	0.44
Maximum-rescaled R^2	0.212	0.253	0.284	0.327	0.339	0.352	0.340	0.353
Number of observations	5,493	5,493	5,493	5,493	5,493	5,493	5,493	5,493

Table A4 continued
Robustness checks for an alternative definition of full-recourse asset-based loans

Panel B: Robustness check for Table 4

	Dependent variable: Project finance dummy			
	(1)	(2)	(3)	(4)
Constant	-1.49 ***	-1.50 ***	-1.56 ***	-1.26 ***
	315.90	319.26	336.68	214.03
Aggregate market share of all DBs: MDBs, MFIs, and NDBs	0.09 **		0.52	
	4.57		1.02	
Aggregate market share of all MDBs		0.99 **		
		5.93		
Aggregate market share of all MFIs		6.85		
		1.71		
Aggregate market share of all NDBs		-0.01		
		0.16		
Aggregate market share of all DBs * KfW dummy			-0.14	
			0.09	
Aggregate market share of all DBs * EBRD dummy			0.04	
			0.01	
Aggregate market share of all DBs * JBIC dummy			-0.62	
			1.46	
Aggregate market share of all DBs * KDB dummy			-0.15	
			0.08	
Aggregate market share of all DBs * WB dummy			3.87 **	3.02 **
			4.35	4.19
Aggregate market share of all DBs * EDC dummy			1.03	
			0.71	
Political risk				0.15 ***
				20.44
Economic performance				-0.48 ***
				179.00
Corporate governance				-0.73 ***
				410.04
Industry dummies				
Mining	1.35 ***	1.34 ***	1.37 ***	1.08 ***
	80.79	78.90	82.44	48.12
Transportation & utilties	0.74 ***	0.74 ***	0.77 ***	0.78 ***
	62.67	61.71	66.12	63.32
Trade	-0.96 ***	-0.96 ***	-0.90 ***	-0.73 ***
	27.72	27.88	24.39	15.97
Services	-0.33 **	-0.32 **	-0.27 **	0.04
	6.47	6.37	4.32	0.07
Other	0.25 ***	0.26 ***	0.31 ***	0.58 ***
	7.16	7.59	10.74	35.51
Investment characteristics				
Investment size	0.01	0.01	0.01	0.00
	0.15	0.17	0.17	0.02
Investment life	0.12 ***	0.13 ***	0.13 ***	0.06 ***
	276.32	278.07	278.44	79.23
Borrower risk*1000	-0.06	-0.09	-0.11	-0.18
	0.12	0.24	0.37	0.94
Maximum-rescaled R^2	0.207	0.213	0.224	0.340
Number of observations	5,493	5,493	5,493	5,493

Table A4 continued
Robustness checks for an alternative definition of full-recourse asset-based loans

Panel C: Robustness check for Table 5

	Dependent variable: Project finance dummy									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	-3.11 ***	-3.39 ***	-0.99 ***	-3.88 ***	-4.38 ***	-3.49 ***	-3.95 ***	-3.56 ***	-1.28 ***	-1.25 ***
	463.49	448.49	18.65	482.78	460.49	479.92	479.30	363.92	219.90	211.80
Control of corruption	0.57 ***									
	206.45									
Government effectiveness		0.68 ***								
		208.79								
Political stability			-0.14 **							
			5.70							
Voice and accountability				0.70 ***						
				250.02						
Regulatory quality					0.97 ***					
					255.87					
Rule of law						0.69 ***				
						232.79				
Regulatory political risk							0.84 ***		0.21 ***	
							252.64		40.41	
Traditional political risk								0.65 ***		0.12 ***
								161.98		13.89
Bank influence									0.48 *	0.48 *
									2.76	2.67
Economic performance									-0.45 ***	-0.48 ***
									161.34	177.09
Corporate governance									-0.71 ***	-0.74 ***
									385.94	411.95
Industry dummies										
Mining	1.31 ***	1.28 ***	1.37 ***	1.43 ***	1.30 ***	1.28 ***	1.28 ***	1.32 ***	1.07 ***	1.05 ***
	71.87	68.52	82.56	85.84	69.93	68.46	68.51	74.01	47.58	45.35
Transportation & utilties	0.85 ***	0.85 ***	0.72 ***	0.96 ***	0.91 ***	0.86 ***	0.88 ***	0.86 ***	0.79 ***	0.76 ***
	78.17	79.46	59.44	97.32	87.72	80.07	84.20	81.44	65.39	60.82
Trade	-0.67 ***	-0.66 ***	-0.99 ***	-0.57 ***	-0.61 ***	-0.67 ***	-0.63 ***	-0.70 ***	-0.71 ***	-0.74 ***
	13.58	13.34	29.39	9.79	11.22	13.49	11.99	14.76	15.19	16.75
Services	-0.01	-0.01	-0.36 ***	0.08	0.05	0.00	0.04	-0.04	0.05	0.02
	0.00	0.00	7.99	0.35	0.16	0.00	0.09	0.08	0.15	0.02
Other	0.44 ***	0.45 ***	0.25 ***	0.48 ***	0.55 ***	0.45 ***	0.50 ***	0.41 ***	0.57 ***	0.57 ***
	20.73	22.09	7.05	24.54	31.17	21.91	26.62	17.88	33.24	34.24
Investment characteristics										
Investment size	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.00	0.00
	0.37	0.43	0.08	0.46	0.44	0.53	0.51	0.44	0.00	0.02
Investment life	0.12 ***	0.11 ***	0.13 ***	0.12 ***	0.11 ***	0.11 ***	0.11 ***	0.12 ***	0.07 ***	0.06 ***
	260.48	257.67	291.00	265.93	249.58	249.85	247.89	272.71	86.13	79.83
Borrower risk*1000	-0.15	-0.15	0.02	-0.15	-0.19	-0.18	-0.19	-0.13	-0.16	-0.12
	0.71	0.68	0.02	0.88	1.03	0.91	1.03	0.58	0.82	0.55
Odds ratio	1.641	1.658	0.925	1.761	1.792	1.703	1.758	1.549	1.230	1.128
Maximum-rescaled R^2	0.256	0.257	0.206	0.270	0.270	0.263	0.269	0.245	0.336	0.340
Number of observations	5,493	5,493	5,493	5,493	5,493	5,493	5,493	5,493	5,493	5,493

Table A5

Robustness checks using a sample which excludes loans to industrialized countries

This table shows robustness checks of the logit regressions in Tables 3, 4 and 5 using a reduced sample which excludes loans to borrowers in Australia, Canada, Japan, New Zealand, USA and all Western European countries. This sample contains 1,068 project finance loans and 817 full-recourse loans. See notes to Tables 3 to 5. For each independent variable, we report in the top row the estimated coefficient and in the bottom row the χ^2-statistic. *, **, and *** indicate significance at the 10%, 5% and 1% level, respectively. We correct for overdispersion by multiplying the covariance matrix by the Deviation dispersion parameter. We use factor analysis to remove the correlation between political risk, corporate governance and economic performance.

Panel A: Robustness check for Table 3

	Dependent variable: Project finance dummy							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.69 ***	-2.87 ***	0.09	0.05	-0.61 ***	-0.72 ***	-0.70 ***	-0.64 ***
	25.29	62.31	0.19	0.09	18.93	25.60	24.40	20.70
Bank influence	0.95 **				0.76 **	0.66 **	0.72 **	0.62 *
	5.63				4.29	3.91	4.48	3.71
Political risk		0.57 ***			0.25 ***	0.03	0.20 ***	0.19 ***
		43.79			19.07	0.23	11.38	9.85
Economic performance			-0.01 ***		-0.14 **	-0.19 ***	-0.37 ***	-0.19 ***
			20.77		6.00	11.25	31.39	11.32
Corporate governance				-0.01 ***	-0.44 ***	-0.42 ***	-0.41 ***	-0.41 ***
				68.42	48.03	45.22	42.15	42.22
Political risk*economic performance$_{D=high}$						0.81 ***		
						35.36		
Economic performance*political risk$_{D=high}$							0.86 ***	
							44.96	
Political risk*economic performance								0.38 ***
								35.92
Industry dummies								
Mining	1.10 ***	1.00 ***	0.98 ***	0.92 ***	0.89 ***	0.91 ***	0.96 ***	0.94 ***
	19.04	15.73	14.90	13.30	12.39	12.79	14.37	13.68
Transportation & utilties	-0.94 ***	-0.85 ***	-0.95 ***	-0.94 ***	-0.93 ***	-0.91 ***	-0.93 ***	-0.94 ***
	41.78	34.21	42.82	42.29	40.24	37.68	39.62	40.48
Trade	0.10	0.11	0.01	0.02	0.06	0.12	0.13	0.20
	0.04	0.05	0.00	0.00	0.01	0.06	0.07	0.16
Services	0.59	0.75 *	0.63	0.66	0.66	0.60	0.64	0.59
	2.18	3.53	2.45	2.52	2.60	2.04	2.39	1.98
Other	0.62 ***	0.79 ***	0.63 ***	0.88 ***	0.91 ***	0.91 ***	0.85 ***	0.92 ***
	12.87	19.41	13.08	23.72	24.82	24.54	21.25	24.99
Investment characteristics								
Investment size	1.88 ***	2.01 ***	1.80 ***	2.12 ***	2.09 ***	2.22 ***	2.16 ***	2.15 ***
	68.81	70.88	60.97	76.81	74.96	84.86	80.46	81.41
Investment life	0.08 ***	0.08 ***	0.08 ***	0.06 ***	0.06 ***	0.06 ***	0.07 ***	0.07 ***
	38.37	35.77	40.00	21.62	22.91	23.76	27.68	24.76
Borrower risk*1000	1.56 ***	1.87 ***	1.80 ***	1.75 ***	1.76 ***	1.68 ***	1.74 ***	1.75 ***
	12.13	15.25	14.34	13.84	13.63	13.04	14.64	14.16
Maximum-rescaled R^2	0.247	0.261	0.244	0.282	0.297	0.322	0.327	0.322
Number of observations	1,885	1,885	1,885	1,885	1,885	1,885	1,885	1,885

Table A5 continued
Robustness checks using a sample which excludes loans to industrialized countries

Panel B: Robustness check for Table 4

	Dependent variable: Project finance dummy			
	(1)	(2)	(3)	(4)
Constant	-0.69 ***	-0.84 ***	-0.84 ***	-0.61 ***
	24.69	35.27	34.75	18.48
Aggregate market share of all DBs: MDBs, MFIs, and NDBs	-0.03 *		-0.88	
	3.32		0.35	
Aggregate market share of all MDBs		0.85 **		
		4.96		
Aggregate market share of all MFIs		-179.00		
		0.00		
Aggregate market share of all NDBs		-0.17 ***		
		25.22		
Aggregate market share of all DBs * KfW dummy			0.65	
			0.19	
Aggregate market share of all DBs * EBRD dummy			1.39	
			0.86	
Aggregate market share of all DBs * JBIC dummy			0.74	
			0.24	
Aggregate market share of all DBs * KDB dummy			0.71	
			0.22	
Aggregate market share of all DBs * WB dummy			4.08 *	3.22 **
			3.35	3.86
Aggregate market share of all DBs * EDC dummy			2.51	
			1.34	
Political risk				0.18 ***
				9.34
Economic performance				-0.11 **
				3.98
Corporate governance				-0.44 ***
				47.08
Industry dummies				
Mining	1.11 ***	1.06 ***	1.05 ***	0.96 ***
	19.21	17.51	17.38	14.38
Transportation & utilties	-0.93 ***	-0.99 ***	-0.97 ***	-0.91 ***
	41.38	45.69	43.21	37.86
Trade	0.07	0.11	0.12	0.06
	0.02	0.05	0.06	0.02
Services	0.83 **	0.72 *	0.71 *	0.61
	4.29	3.25	3.18	2.20
Other	0.63 ***	0.70 ***	0.70 ***	0.90 ***
	12.91	15.88	15.96	24.37
Investment characteristics				
Investment size	1.88 ***	1.87 ***	1.83 ***	2.10 ***
	65.91	66.84	64.72	74.73
Investment life	0.09 ***	0.11 ***	0.11 ***	0.06 ***
	43.30	61.85	59.09	21.84
Borrower risk*1000	2.53 ***	2.28 ***	2.16 ***	1.56 ***
	27.57	23.29	20.95	11.25
Maximum-rescaled R^2	0.244	0.279	0.284	0.292
Number of observations	1,885	1,885	1,885	1,885

Table A5 continued
Robustness checks using a sample which excludes loans to industrialized countries

Panel C: Robustness check for Table 5

	Dependent variable: Project finance dummy									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	-2.40 ***	-2.44 ***	-1.95 ***	-2.19 ***	-2.03 ***	-2.88 ***	-2.63 ***	-2.94 ***	-0.60 ***	-0.62 ***
	67.42	61.35	30.09	41.17	37.52	81.73	61.75	61.77	17.76	19.32
Control of corruption	0.45 ***									
	46.55									
Government effectiveness		0.50 ***								
		41.31								
Political stability			0.31 ***							
			15.40							
Voice and accountability				0.34 ***						
				24.22						
Regulatory quality					0.38 ***					
					20.88					
Rule of law						0.58 ***				
						61.56				
Regulatory political risk							0.53 ***		0.22 ***	
							42.64		13.99	
Traditional political risk								0.57 ***		0.26 ***
								43.53		20.74
Bank influence									0.74 **	0.77 **
									4.17	4.37
Economic performance									-0.14 **	-0.14 **
									6.50	5.94
Corporate governance									-0.45 ***	-0.44
									50.23	47.62
Industry dummies										
Mining	0.99 ***	0.95 ***	1.03 ***	1.19 ***	1.03 ***	0.93 ***	0.97 ***	1.02 ***	0.88 ***	0.90 ***
	15.27	14.11	16.49	21.78	16.62	13.39	14.70	16.19	12.21	12.53
Transportation & utilties	-0.88 ***	-0.88 ***	-0.91 ***	-0.81 ***	-0.88 ***	-0.88 ***	-0.87 ***	-0.84 ***	-0.95 ***	-0.92 ***
	37.16	36.96	39.90	30.52	36.66	37.21	36.20	33.63	41.91	39.49
Trade	0.12	0.09	0.07	0.17	0.10 ***	0.08	0.09	0.12	0.04	0.07
	0.06	0.03	0.02	0.12	0.04	0.03	0.04	0.06	0.01	0.02
Services	0.75 *	0.80 **	0.86 **	0.82 **	0.84 **	0.70 *	0.77 *	0.79 **	0.66	0.66
	3.51	4.06	4.67	4.14	4.40	3.08	3.74	3.95	2.57	2.62
Other	0.80 ***	0.81 ***	0.68 ***	0.67 ***	0.76 ***	0.80 ***	0.80 ***	0.78 ***	0.89 ***	0.91 ***
	19.98	20.26	14.89	14.55	18.11	19.93	19.91	19.06	24.23	24.98
Investment characteristics										
Investment size	2.03 ***	1.99 ***	1.93 ***	1.85 ***	1.97 ***	2.08 ***	2.04 ***	1.97 ***	2.08 ***	2.09 ***
	72.49	70.26	67.09	63.46	69.53	75.48	72.87	68.58	74.01	74.69
Investment life	0.08 ***	0.08 ***	0.08 ***	0.09 ***	0.08 ***	0.08 ***	0.08 ***	0.08 ***	0.06 ***	0.06 ***
	34.17	33.80	39.13	42.40	34.66	38.28	35.41	36.61	22.56	23.05
Borrower risk*1000	2.00 ***	2.10 ***	2.36 ***	2.34 ***	2.32 ***	1.80 ***	2.03 ***	2.02 ***	1.81 ***	1.74 ***
	16.92	18.78	22.75	24.57	22.82	14.12	17.68	17.66	14.33	13.35
Odds ratio	1.491	1.464	1.254	1.329	1.307	1.586	1.467	1.467	1.240	1.296
Maximum-rescaled R^2	0.264	0.263	0.248	0.255	0.251	0.272	0.262	0.262	0.297	0.298
Number of observations	1,885	1,885	1,885	1,885	1,885	1,885	1,885	1,885	1,885	1,885