

Law and Project Finance*

Krishnamurthy V. Subramanian Frederick Tung Xue Wang

March 2009

Abstract

We investigate Project Finance as a private response to inefficiencies created by weak legal protection of outside investors. In the context of large investment projects, we offer a new illustration that *law matters* by demonstrating that Project Finance provides a contractual and organizational substitute for investor protection laws. Project Finance accomplishes this by making cash flows verifiable, thereby enhancing debt capacity. Project Finance makes cash flows verifiable through: (i) contractual arrangements made possible by structuring the Project Company as a single, discrete project legally separate from the sponsor; and (ii) private enforcement of these contracts through a network of project accounts that ensures lender control of project cash flows.

Comparing the incidence of bank loans for Project Finance with regular corporate loans for large investments (“Corporate Debt Finance”), we show that Project Finance is more likely in countries with weaker laws against insider stealing and weaker creditor rights in bankruptcy. In addition, stronger creditor rights mitigate the marginal effect of weaker laws against insider stealing on the choice of Project Finance versus Corporate Debt Finance. We employ cross-country tests as well as time-series, difference-in-difference tests that exploit country-level changes in legal rules.

JEL classification: G32, G33, G34, K22

Key words: Agency Cost, Bank Loan, Creditor Rights, Corporate Governance, Insider Stealing, Investor Protection, Law and Finance, Project Finance, Self-Dealing

*All three authors are from Emory University: Krishnamurthy V. Subramanian (ksupra3@bus.emory.edu) and Xue Wang (xue.wang@emory.edu) are faculty at Goizueta Business School and Frederick Tung (fred.tung@law.emory.edu) is on the faculty at the Law School. We would like to thank Bill Megginson (AEA 2009 Discussant), Kose John (CELS 2008 Discussant), George Allayannis (FEA 2008 Discussant), Benjamin Esty, Roberta Romano, Amit Goyal, Atif Mian, and seminar and conference participants at the American Economic Association Annual Meetings 2009 (AEA 2009), NYU Conference on Empirical Legal Studies 2008 (CELS 2008), Conference on Financial Economics and Accounting at University of Texas at Austin 2008 (FEA 2008), American Law and Economics Association Annual Meeting 2008, Georgia State University, Emory University, and North Carolina State University. Contact Author: Krishnamurthy Subramanian, 1300 Clifton Road, Atlanta, GA 30322. Tel: 404-727-7497; Fax: 404-727-7538.

1 Introduction

The law and finance literature (La Porta et. al., 1997, 1998) highlights that legal rules protecting outside investors vary systematically across countries. As the Coase Theorem (Coase, 1960) predicts, market participants often respond to the inefficiencies created by weak legal protection of outside investors with contractual and private enforcement mechanisms. In this paper, we investigate one instance of this broader phenomenon. We examine Project Finance as a private response to the risks posed by the financing of large investment projects in countries with weak legal protection of outside investors.

When a country’s corporate and bankruptcy laws provide weak protection to outside investors, Corporate Debt Finance can lead to expropriation of outside investors — including creditors — by corporate insiders. Firms and their lenders may respond by employing Project Finance, where extensive contracts combine with private enforcement mechanisms to limit borrower discretion on cash flows. The resulting increase in cash flow verifiability reduces agency costs and enhances the project’s debt capacity. With respect to financing of large investment projects, then, Project Finance offers a private contractual substitute for legal protection of outside investors.¹

In Project Finance, a legally independent project company is created to own and invest in the project, and the project debt is structured without recourse to the sponsors (Nevitt and Fabozzi 2000; Esty 2003). With this structure, project cash flows become the essential means for repaying the lender. Verifiability of cash flows, therefore, becomes crucial. Project Finance enhances verifiability through (i) contractual constraints on cash flows that are made possible by the special structuring of the Project Financed company, and (ii) private enforcement of these contracts through a network of project accounts that are under the lender’s control and into which project cash flows are required to be deposited. Con-
Contract-

¹The importance of Project Finance is underscored by the following: though US corporations used Project Finance less often than their foreign counterparts (Kleimeier and Megginson, 2000), their investment of \$47 billion in Project Finance in 2006 exceeded the \$41 billion that venture capital funds invested in startups and the \$43 billion raised by US companies through IPOs in that same year (Esty and Sesia, 2007).

tual constraints on cash flows are possible because the Project Company (i) owns only the single, discrete project for which it is created; and (ii) is legally separate from the sponsor. Therefore, project cash flows can be meaningfully separated from the sponsor's other cash flows, enabling explicit contracting over the Project Company's use of cash through *cash flow waterfall contracts*. These contracts finely detail the order of distribution of project cash flows across a number of contingencies, including provisions that mandate accelerated repayment of project debt when excess cash is available.

With Corporate Debt Finance, by contrast, the commingling of cash flows from *multiple* projects makes it difficult to segregate project cash flows. Lender monitoring of project cash flows is therefore difficult. Moreover, tightly enforced cash flow constraints similar to those in Project Finance would significantly impede managerial discretion in Corporate Debt Finance, which involves not only multiple projects but also internal capital markets within the corporate entity. Therefore, contractual arrangements that are possible in Project Finance cannot be effected in Corporate Debt Finance. The choice of Project Finance versus Corporate Debt Finance thus presents a trade-off. Compared to Corporate Debt Finance, Project Finance enhances cash flow verifiability but reduces managerial flexibility and significantly increases transaction costs.²

We rely on a simple extension of the theory of debt proposed in Hart (1995) to derive our empirical hypotheses. While Hart (1995) models an environment where cash flows are completely unverifiable, we derive our hypotheses in an environment with *varying levels of cash flow verifiability*. Hart (1995) shows that with unverifiable cash flows, the lender's right to liquidate is central to forcing the borrower to repay, since the borrower can otherwise consume all cash flows and strategically default on its debt obligation. Even a borrower who intends to repay cannot credibly commit ex ante. A project's debt capacity therefore

²First, creating a stand-alone project company may take from six months to more than a year, and the contracting and other transaction costs may consume from 5% to 10% of the project's total cost (Esty, 2005). Second, the up-front fees are considerably higher for project debt than for corporate debt. Finally, lenders to project companies charge advisory fees of up to 50 to 100 basis points for advice on the financial structure of the transaction (Esty, 2003b).

increases with the expected value from asset liquidation, since this enhances the lender's payoff upon default. Similarly, an increase in the creditor's bargaining power ex post (i.e. upon the borrower's default) also increases debt capacity by increasing the lender's payoff upon default. The higher payoff results from the lender's ability in post-default renegotiation to extract a greater portion of the surplus generated from continuing the project rather than liquidating it.³

With varying levels of cash flow verifiability, we generate two additional implications. First, the debt capacity of a project increases with improved cash flow verifiability. The intuition is straightforward. When cash flows are more verifiable, the entire distribution of cash flows available to all claimants — creditors and equityholders alike — shifts to the right. Given their concave payoffs, creditors care about the left tails of the cash flow distribution. Therefore, an increase in cash flow verifiability enhances debt capacity by decreasing the probability of (strategic) default. Second, an increase in cash flow verifiability decreases the marginal effects on debt capacity of expected liquidation value and the creditor's ex post bargaining power. Liquidation value and ex post bargaining power matter only upon default, but because increased cash flow verifiability reduces the likelihood of strategic default, the marginal effects of these post-default factors on debt capacity are decreased.

Hart's (1995) theory maps directly into our cross-country empirical setting. First, as argued above, Project Finance makes cash flows verifiable even in countries with poor legal protection for outside investors. But if legal protection against insider stealing is stronger, then in the Corporate Debt Finance context, the enhanced risk of ex post liability more strongly deters insiders from consuming cash flows ex ante and strategically defaulting.⁴ Second, bankruptcy laws that do not prohibit lenders from seizing assets increase lenders' expected value from asset liquidation by not impeding such liquidation. Third, stronger creditor rights in bankruptcy provide the lender greater ex post bargaining power. Each

³In Hart (1995), renegotiation is always profitable ex-post, since liquidation is an inefficient outcome compared to continuing the project.

⁴This legal protection matters far less with Project Finance because cash flows are verifiable.

of these three legal conditions increases debt capacity in Corporate Debt Finance, thereby making costly Project Finance less attractive. Therefore, we predict that Corporate Debt Finance is more likely than Project Finance in countries where (i) the protection against insider stealing is stronger; (ii) creditors may more readily seize collateral assets upon default; and (iii) creditor rights in bankruptcy are stronger. Furthermore, the marginal effects of creditor rights and the ability to seize collateral assets on the choice between Project Finance and Corporate Debt Finance are weaker when laws against insider stealing are stronger.

Since Project Finance involves primarily bank debt for large investments (Esty 2003), we test the above predictions by comparing bank loans for Project Finance with bank loans to regular corporations for their large investments (“Corporate Debt Finance”). The sample of bank loans is drawn from Loan Pricing Corporation’s Dealscan database, which offers the best source for international bank loans (Qian and Strahan, 2007).

We employ two different proxies for the strength of legal protection against insider stealing.⁵ First, we use an index of ex post private control of self-dealing from Djankov, LaPorta, Lopez-de-Silanes and Shleifer (2006) (hereafter, DLLS), which captures the extent of countries’ legal protection for shareholders against insider self-dealing. Our second proxy measures the value of private benefits of control using control block premia from Dyck and Zingales (2004). We use this market-based measure to capture the quality of enforcement of laws against insider stealing, in addition to the quality of the laws themselves. As our proxy for a country’s creditor rights in bankruptcy, we use the creditor rights index (a score between 0 and 4) constructed in Djankov, McLeish and Shleifer (2007) (hereafter, DMS), which measures the strength of secured creditors’ rights in bankruptcy.

Inferring a causal relationship between country-level laws and the deal-level choice between Project Finance and Corporate Debt Finance presents several challenges. First, omitted variables at the deal-, borrower- or lender level could corrupt our interpretation of any causal effect of these laws on this choice. Second, country-level laws governing insider steal-

⁵We do not distinguish between manager-shareholder conflicts and insider-outsider conflicts. For our purposes, “insider stealing” covers expropriation by both managers and controlling shareholders.

ing and creditor rights may be correlated with other country-level unobserved factors. To address these concerns, we undertake our empirical analysis in five steps.

First, in our basic tests, we run logit regressions for the likelihood of Project Finance as a function of our proxies for protection against insider stealing and creditor rights and the interaction between them. Second, to alleviate concerns that our results may be driven by borrower- or lender-level omitted factors, we aggregate our sample to a country, 4-digit SIC industry, year level and run OLS regressions with the percentage of Project Finance in a country, industry, and year as our dependent variable. Consistent with our hypotheses, we find the coefficients of our proxies for laws against insider stealing and for creditor rights to be negative and the coefficient of their interaction to be positive. The economic magnitudes of these effects are significant. A one-standard-deviation increase in the proxy for protection against insider stealing decreases the likelihood of Project Finance in a given country by 4.3% to 5.5%. A one point increase in the strength of creditor rights decreases the likelihood of Project Finance by 6.7% to 13.1%, and decreases the marginal effect of weaker protection against insider stealing on Project Finance by 9.1% to 16.2%.

Third, we provide the *strongest evidence* supporting our hypotheses using difference-in-difference tests that address endogeneity concerns by exploiting within-country differences in the incidence of Project Finance relating to *exogenous changes* in legal rules. Changes in creditor rights in bankruptcy and changes in shareholders' right to bring derivative suits occurred in various countries in our sample. Derivative suits offer shareholders a potent private enforcement mechanism to enforce directors' fiduciary duties, and it is included as a component of the DLLS index of ex post private control of self-dealing. These time-series tests alleviate criticisms of endogeneity on some key dimensions. First, since Project Finance involves an asset choice as well as a financing choice (Esty, 2003), it may be employed relatively more than Corporate Debt Finance in industries that employ assets involving costly agency conflicts. Second, the pattern of industries in different countries is potentially correlated systematically with country-wide unobserved factors, which could drive the choice

of Project Finance in these industries. Third, other omitted variables at the country level may be correlated with our legal variables of interest. The difference-in-difference tests alleviate such endogeneity concerns by comparing deals with similar assets in the same country, before and after a law change, against a control group of deals that involve no such law change.

Fourth, having tested for the effects of creditor rights generally, we investigate the prediction in Hart (1995) that the lender’s right to liquidate collateral assets is *central* to forcing a borrower to repay. In many countries, a bankruptcy filing automatically triggers a stay on creditor collection efforts against the borrower, precluding secured creditors from seizing their collateral without explicit court permission. The “no automatic stay on secured assets” component of the DMS creditor rights index reflects the absence of any such legal impediment, leaving secured creditors free to seize collateral. This component should matter more for the choice of Project Finance versus Corporate Debt Finance than other index components, which are unrelated to seizing assets. To examine this hypothesis, we repeat our deal- and industry-level tests, this time disaggregating the creditor rights index into its four components. We find that the “no automatic stay on secured assets” component has a statistically and economically greater effect, both directly and through its interaction with the proxies for protection against insider stealing, than other components.

Fifth and finally, to highlight a causal mechanism for our results, we investigate inter-industry differences in the effect of investor protection laws on the choice of Project Finance versus Corporate Debt Finance. Since Project Finance renders cash flows verifiable, we predict that the effect of these laws would be disproportionately greater in industries with higher free cash flows, and therefore higher agency costs (Jensen, 1986). We interact industry-level free cash flows to assets with our country-level variables and include country-, industry-, and year fixed effects. We find that given two industries, which differ in their free cash flow/assets by one standard deviation, the marginal effect of protection against insider stealing, creditor rights and the interaction between them is relatively higher in the higher free cash flow industry by 13.8% to 17.5%.

Our key contribution is to offer a new illustration that *law matters*, this time in the context of debt financing of large investment projects. Stronger laws against insider stealing enhance debt capacity in Corporate Debt Finance by improving borrowers' ability to credibly commit ex ante that they will not strategically default ex post. Like concentrated ownership for equity investors (LaPorta et al. 1998), Project Finance represents the private — and costly — response of firms and their investors — here, lenders — to weak investor protection. By employing Project Finance as a counter-factual to Corporate Debt Finance, our results imply that stronger legal protection against insider stealing and/or stronger creditor rights in bankruptcy encourage Corporate Debt Finance by obviating the need to undertake a costly and specialized form of financing such as Project Finance. To our knowledge, our study is the first to offer such large sample cross-country evidence.

This paper is organized as follows. Section 2 reviews the literature. Section 3 explains the key institutional features of Project Finance. Section 4 lists our empirical hypotheses. Section 5 details our sample and proxies while Section 6 presents our results. Section 7 provides further discussion of our results. Section 8 concludes the paper.

2 Review of Literature

As a broad research inquiry, our paper is closely related to the law and finance literature (see LLSV, 1997, 1998; Djankov et. al., 2005; Djankov et. al., 2006 and the references therein). Specifically, our paper resembles La Porta, et. al. (1998, 1999) in examining how legal protection for investors affects the nature of financial organization in a country. We highlight that corporations and their lenders would choose Project Finance over Corporate Debt Finance to counter the effects of weak laws against insider stealing and weak creditor rights.

This paper augments the literature examining Project Finance as an optimal organizational and financing choice. Like our study, Chemmanur and John (1996) focus on the cash flow aspect of Project Finance. In their formal analysis, they assert that the key ingredient

of project financing is the segregation of project cash flows from those of the sponsor. They show *inter alia* that Project Finance would dominate other alternatives when the structure of the sponsor's private control benefits differs substantially across its projects.⁶ In contrast to Chemmanur and John (1996), we argue informally here that the (lack of) verifiability of cash flows in (Corporate Debt Finance) Project Finance, and therefore the (higher) lower private benefits, arise endogenously because of the nature of contracts that can (not) be written in (Corporate Debt Finance) Project Finance. Esty (2003) articulates the important institutional details of Project Finance and argues that the governance structure of project companies combines with high leverage to mitigate agency conflicts. He supports his analysis with detailed case studies and field research. We augment Esty (2003) in employing a large sample of international loans to show that Project Finance substitutes for Corporate Debt Finance by imposing contractual constraints on Project cash flows. Berkovitch and Kim (1990) formally show that if information between debtholders and equityholders is symmetric, Project Finance simultaneously alleviates the problems of under- and over-investment. Compared to Esty (2003) and Berkovitch and Kim (1990), we take a different perspective on agency conflicts by demonstrating empirically that Project Finance offers a private substitute for legal rules designed to reduce agency conflicts.

Other studies have examined the relationship between Project Finance and legal environments. Kleimeier and Megginson (2000) compare Project Finance loans to non-Project Finance loans, and *inter alia* find that Project Finance loans are far more likely to be extended to borrowers in riskier countries, particularly countries with higher political and economic risks. Esty and Megginson (2003) analyze syndicated Project Finance loans to examine the effect of creditor rights and reliable legal enforcement on the pattern of debt ownership. We contribute to this literature by documenting the effect of a specific country-level risk – the quality of legal protection of outside investors – on the choice of Project Finance versus

⁶Related to this, Shah and Thakor (1987) show that in an asymmetric information setting, Project Finance is sometimes optimal because creditors incur lower screening costs in evaluating the separately-incorporated project cash flows.

3 Institutional Aspects of Project Finance

Project Finance has four essential features. First, it involves creation of a legally independent Project Company to own and invest in the project. Second, the Project Company invests only in the particular project for which it is created; it is typically dissolved once the project is completed. Third, the project debt is structured without recourse to the sponsors (Nevitt and Fabozzi, 2000; Esty, 2003). These three features together imply that cash flows from the project are the essential means to repay the lender. All interest and principal payments come from project cash flows (Nevitt and Fabozzi, 2000). This observation leads to the fourth essential aspect of Project Finance, which has gone underemphasized in the literature but is the focus of our analysis: Project Finance includes severe constraints on the use and disposition of project cash flows. Since the lender is repaid only through project cash flows, the lender seeks to ensure that the project's cash is adequate to satisfy debt repayment obligations. Project Finance therefore incorporates detailed restrictions on project cash flows and an enforcement regime to finely track those cash flows. Compared to Corporate Debt Finance, the sponsoring firms, therefore, have considerably reduced discretion over project cash flows. With Corporate Debt Finance, the sponsor company may invest in many projects simultaneously and reallocate cash flows across projects, and lenders may rely on the cash flows and assets of the sponsor company in addition to those of a given project.

A final aspect of Project Finance is that it involves very high leverage, the bulk of which is in the form of bank debt. The average Project Company has a leverage ratio of 70% compared to 33.1% for similar sized firms listed in the Compustat database (Esty, 2003). Bank loans comprise around 80% of project debt (Esty, 2005).

3.1 Cash Flow Verifiability

In Project Finance, project cash flows can be easily separated from those of the sponsor since the Project Company is legally independent and does not possess multiple current and

future projects. The ability to separate project cash flows, along with the decreased cost of monitoring such cash flows, enables the Project Company to enter into detailed arrangements with its lenders, including private enforcement through lender-controlled project accounts. The extremely detailed control of cash flow is unique to Project Finance, which is why it is sometimes referred to as “contractual finance.” (Esty and Megginson, 2003).

3.1.1 The Cash Flow Waterfall Contract

The *cash flow waterfall contract*, which specifies precisely how project cash flows may be used, is a critical contractual arrangement in Project Finance. This contract dictates the order in which project cash flows may be distributed. Typically, the borrower will be required to use project cash flows first in satisfaction of project operating expenses, and then to pay interest and loan principal. The lender also typically seeks to structure how excess cash flow – cash flow available in excess of what is required to satisfy project expenses and debt repayment – is distributed.

The contract adjusts for a number of contingencies. For example, scheduled payments may be adjusted based on a *loan life cover ratio*. This ratio is determined at a given moment as the net present value of project revenues for the remaining term of the loan, divided by the amount of the loan then outstanding. If the loan life cover ratio falls below a specified threshold, required payments may be *increased*. These increased payments typically absorb all of the excess cash flow of the project, or such proportion as is necessary to move and maintain the loan life cover ratio above the agreed threshold. The cash flow waterfall contract commonly also includes “cash sharing” and “mandatory cash sweep” provisions, which are designed to effectively amortize debt at a rate faster than originally scheduled if the project performs appreciably better or appreciably worse than anticipated. When a project exceeds cash flow expectations, a cash sharing provision entitles the lender to capture a portion of the cash flow that would otherwise be available for distribution to the project sponsor. This provision is triggered if the *debt service coverage ratio* exceeds a specified threshold, with the ratio calculated as the project’s actual revenues over some specified period divided by the

project's debt service obligations over the same period. In that case, all cash flows available for distribution to the project sponsor (after honoring all prior payment obligations under the cash flow waterfall contract) are shared in agreed proportions between the sponsor and the lender, usually in inverse order of maturity of debt contracts. In contrast, when the project is not performing up to expectation, "lock up" and "mandatory cash sweep" provisions may be triggered. If the debt service coverage ratio falls below an agreed threshold, the project will not be permitted to make distributions (i.e. return cash flow) to the sponsor, and the project cash flow remains locked up. If poor performance continues and the lock up extends beyond a specified period, the lender is entitled to "sweep" the locked up cash and apply it in payment of the principal outstanding (again in inverse order of maturity).

3.1.2 Private Enforcement Mechanisms

The cash flow waterfall contract is enforced through a variety of project accounts that are usually under the lender's control. These include (i) a *proceeds account*, into which project revenues are deposited; (ii) a *disbursement account*, into which all payments to the lender and any distributions to equity are deposited for transfer; and (iii) a *debt service reserve account*, in which cash flows are set aside to enable payments of principal and interest to the lender if project revenues are not available. Since these accounts are under the control of the lender, they provide the lender a framework to monitor the borrower's activities without getting involved in the borrower's day-to-day business activities. These lender-controlled project accounts *lend teeth* to the elaborate and finely-tuned contracting undertaken in the cash flow waterfall contract. These teeth matter especially in countries with weak legal environments, where writing and enforcing contracts may be especially costly.

3.2 A Trade-Off

These arrangements for cash flow verifiability imply trade-offs in the choice of Project Finance versus Corporate Debt Finance. The fundamental cost of this cash flow verifiability is a loss of managerial flexibility. Cash flow controls in Project Finance preclude managers

from funding any project-related growth opportunities from internal cash flows or reallocating cash flows across multiple projects, as is possible with Corporate Debt Finance. Bill Young, the Head of Specialized Finance Group at BP-Amoco, opines about these costs of Project Finance: “I think of Corporate Finance as a way to avoid the inflexibility associated with Project Finance. When you sign a Project Finance deal, you have to live with a giant stack of documents full of provisions that hinder your ability to respond to a changing environment.” (Esty and Kane, 2001).

On the other hand, cash flow verifiability makes insider expropriation more difficult, which is a key benefit of Project Finance over Corporate Debt Finance.

4 Empirical Hypotheses

As we argued in the Introduction, an extension of Hart’s (1995) theory, with varying levels of cash flow verifiability, leads us to predict that:

HYPOTHESIS 1: *Ceteris paribus*, Corporate Debt Finance is more likely than Project Finance in countries where the protection against insider stealing is stronger.

HYPOTHESIS 2: *Ceteris paribus*, Corporate Debt Finance is more likely than Project Finance in countries where creditor rights in bankruptcy are stronger.

HYPOTHESIS 3: *Ceteris paribus*, the *marginal effect* of creditor rights on the likelihood of Project Finance is weaker when laws against insider stealing are stronger and vice-versa.

HYPOTHESIS 4: *Ceteris paribus*, the “no automatic stay on secured assets” component of creditor rights should have a greater effect than the other components of creditor rights on the choice of Project Finance versus Corporate Debt Finance, both directly and through its interaction with protection against insider stealing.

HYPOTHESIS 5: *Ceteris paribus*, the *marginal effects* on the choice of Project Finance versus Corporate Debt Finance of (i) laws against insider stealing; (ii) creditor rights; and (iii) the interaction between them *increase* with the level of free cash flow in an industry.

5 Data, Sample and Proxies

5.1 Sample

We test our predictions using bank loans for Project Finance and Corporate Debt Finance from LPC Dealscan. Eighty percent of the debt in Project Finance comprises bank debt (Esty, 2003), which is typically in the form of large internationally syndicated loans, where Dealscan’s international coverage is the best among available data sources. In addition, Dealscan’s definition of Project Finance closely matches the characteristics of Project Finance that we consider essential. Dealscan describes Project Finance as a “non-recourse financing provided to an independently set up Project Company.” As for Corporate Debt Finance, comparable projects would be very large and require large loan amounts, which would likely involve the participation of large international banks. Qian and Strahan (2007) analyze traditional bank loans from Dealscan and point out that from the mid-1990s, Dealscan provides a comprehensive source for international bank loans. Therefore, to examine the choice between Project Finance and Corporate Debt Finance across a large sample of countries, Dealscan serves as the most suitable data source.⁷

To examine this choice,⁸ we carefully identify categories of Corporate Debt Finance loans such that for each loan in our sample, the *counterfactual* choice between Project Finance and our sampled categories of Corporate Debt Finance is plausible. To determine which

⁷Dealscan’s coverage may possibly be more comprehensive for US loans than international loans. However, this would lead to biases only if Dealscan’s coverage is *systematically* lower for Project Finance vis-a-vis Corporate Debt Finance *and* that this difference in coverage is *systematically correlated* with measures of investor protection. Nevertheless, we examine potential biases from Dealscan’s coverage being more comprehensive for the US by running our tests on a sub-sample that excludes the US deals. If there is sample selection bias, we would expect to see very different coefficient estimates using the non-US sample compared to the full sample. However, we find that the coefficient estimates with this non-US sample are quite close to the reported coefficient on our full sample, which suggests that sample selection biases are not significant.

⁸This choice does indeed exist. As Huang and Knoll (2000) point out, “project financing is a capital structure decision because the firm *could potentially* fund the project using its own credit” (emphasis added). Anecdotal evidence points to the existence of such a choice as well. After the merger of British Petroleum with Amoco, BP-Amoco prepared recommendations on when and in what circumstances the firm should use external project finance instead of corporate finance to fund its new investments (Esty and Kane, 2003).

Corporate Debt Finance loans to include in our sample, we rely on Dealscan’s attribution of the primary purpose for each loan, as well as industry classification, as described below.

Since Project Finance involves the creation of “a single purpose capital asset” (Esty, 2003), Corporate Debt Finance loans with “Capital Expenditures” as their primary purpose offer a natural set of counterfactuals to Project Finance. Indeed, Panel A of Table 1 reveals that the deal amounts for Capital Expenditure and Project Finance loans are very similar. An equality of means test for these two samples with unequal variances cannot reject the hypothesis that the means are equal (the t-statistic obtained is 1.404). The distributions of Capital Expenditure and Project Finance loans are also similar with respect to loan maturity and the number of lenders.

In addition to Capital Expenditure loans, we also include *large term loans* for “Corporate Purposes” in our sampled Corporate Debt Finance loans. Since Project Finance involves large investments, large term loans for “Corporate Purposes” comprise another category where the counterfactual choice of Project Finance is plausible. Consistent with the minimum deal amount (converted in dollars) for Project Finance loans, which is \$0.5 million, we exclude all Corporate Purpose Term Loans with deal amounts (converted in dollars) less than 0.5 million. After this exclusion, we find in Panel A of Table 1 that the mean and median loan amounts for Corporate Purpose term loans are slightly smaller than that for Project Finance loans. An equality of means test for these two samples with unequal variances, however, cannot reject the hypothesis that the means are equal (the t-statistic obtained is 1.104). With respect to maturity and the number of lenders — for which we do not specify any sampling restrictions — we find that the distribution of our sampled Corporate Purpose Term Loans is very similar to our Project Finance loans.⁹ Examining the distributions for deal size, loan maturity and number of lenders across the three loan categories suggests the

⁹Admittedly, the general “Corporate Purposes” category, which is the modal Dealscan loan category, may include loans for a number of varied purposes. Given the sampling restrictions we impose, however, and the statistical similarities between our sample Corporate Purposes Term Loans and our Project Finance loans, we feel confident that each offers a set of plausible counterfactuals to the other. As a robustness check, we run our basic tests excluding Corporate Purpose Term Loans from the sample, reaching very similar conclusions to those from the full sample.

distribution of loans is very similar for both Corporate Debt Finance and Project Finance.

In examining our data, we found that a few industries were outliers in terms of the dominance of Project Finance over Corporate Debt Finance deals or vice versa. Therefore, in order to ensure the integrity of our comparisons — i.e., that for all loans in our sample, the counterfactual financing choice is plausible — we exclude all loans for Agriculture, Forestry and Fishing (SIC codes 1-8) and Public Administration (SIC codes 91-97). The former shows only seven Project Finance deals during our sample period while the latter shows only four Corporate Debt Finance deals.

Since the creditor rights variables do not extend beyond 2002, our sample includes loans originated from 1993 to 2003. Our final deal-level sample contains 5,005 deals from 39 countries.¹⁰ This collection of countries is identical to that in Qian and Strahan (2007).

5.2 Key Explanatory Variables

We describe our *key* explanatory variables here. The Appendix provides a summary of all the explanatory variables and their sources.

We employ two proxies for the protection against insider stealing. In the spirit of Shleifer and Wolfenzon (2002), where the *ex ante* financing outcome is affected by the *ex post* likelihood of a sponsor/manager being caught stealing, our first proxy is the index of *ex post private control of self-dealing* constructed by Djankov, LaPorta, Lopez-de-Salinas and Shleifer (2006) (DLLS).¹¹ This measure captures the extent of *ex post* disclosure that the controlling shareholder must provide in order to engage in a self-dealing transaction and the ease of proving wrongdoing once such a transaction is detected.¹²

¹⁰A loan deal in Dealscan may contain multiple facilities such as a term loan, a line of credit, etc. We carefully eyeballed the data and found that multiple facilities in a deal can be identified when (a) the borrower name and the deal active date are identical; (b) the primary purpose is the same across the facilities, and (c) aggregating the tranche amounts on each of the facilities yields a sum equal to the deal amount. Hence, we used these three criteria to aggregate the data from the facility to the deal level. For our Corporate Purpose Term Loans, we include only those deals that contain a facility designated as a Term Loan.

¹¹DLLS construct the self-dealing measures by describing a hypothetical self-dealing transaction by a corporate insider and recording lawyer survey responses as to how a country's legal system imposes hurdles against the same.

¹²This survey measure is not subject to inconsistent coding/ definition (Spamann 2009).

Second, we use a market-based measure from Dyck and Zingales (2004), as an alternative to the lawyer surveys on which DLLS construct their measures. Dyck and Zingales calculate control block premia in order to value private benefits of control, which reflect the ability of corporate insiders to divert corporate wealth to themselves. This market measure may better capture the quality of legal enforcement across countries, in addition to the quality of the written laws themselves. To be consistent with our other measures of investor protection, where a higher value reflects greater protection, we employ *one minus the Dyck-Zingales control premium* as our proxy for protection against insider stealing.

Next, we use the creditor rights index constructed in Djankov, McLeish and Shleifer (2007) (DMS) to proxy for creditor rights. A higher value for the DMS index indicates stronger creditor rights. The DMS creditor rights index measures four powers of secured lenders in bankruptcy: first, whether there are restrictions, such as creditor consent, on debtors' filing for reorganization; second, whether the absence of an 'automatic stay' or 'asset freeze' leaves secured creditors free to seize their collateral; third, whether secured creditors are paid first; and finally, whether an administrator displaces the debtor's management in running the business during the reorganization. Each country's index value is simply a tally of the number of creditor-favorable provisions among these four that exist under the country's bankruptcy law; a value of zero indicates poor creditor rights while a value of four indicates strong creditor rights.

For our time-series difference-in-difference tests, we exploit changes in creditor rights and changes in shareholders' right to bring derivative suits. These are described in Section 6.4.

5.3 Descriptive Statistics

Panel A of Figure 1 plots the percentage of Project Finance in a country against the two main explanatory variables that proxy for protection against insider stealing. This graph illustrates that the percentage of Project Finance is negatively associated with each of these proxies. This univariate finding is consistent with our Hypothesis 1.

Panel B of Figure 1 shows how creditor rights moderate the relationship between the

choice of Project Finance versus Corporate Debt Finance and protection against insider stealing. The hollow circles (hollow squares) in the scatter plots and the solid (dash dot) lines in the linear fit represent stronger (weaker) creditor rights, which correspond to the DMS creditor rights index equal to 2, 3 or 4 (0 or 1). In the two graphs of this panel, we again observe a negative relation between Project Finance and the two proxies for protection against insider stealing. More importantly, the solid line is less steep than the dashed line in both, suggesting that stronger creditor rights in a country mitigate the effect of weaker protection against insider stealing on Project Finance. This substitutability between creditor rights and protection against insider stealing is consistent with Hypothesis 3.

6 Results

As outlined in the Introduction, to infer a causal relationship between country-level laws and the deal-level choice between Project Finance and Corporate Debt Finance, we undertake our analysis in five steps. First, in our basic tests, we examine Hypotheses 1-3 using logit regressions for the likelihood of Project Finance after controlling for various observed and unobserved determinants at the deal and industry levels. Second, we re-examine Hypotheses 1-3 (i) by aggregating our sample to the 4-digit SIC industry-level; and (ii) by including all country level factors highlighted by the existing literature. Third, we provide our *strongest evidence* in support of Hypotheses 1-3 by conducting difference-in-difference tests that exploit legal changes in various countries in our sample. Fourth, having tested for the effects of creditor rights generally, we disaggregate the creditor rights index into its four components and test Hypothesis 4 for the relative effect of the “no automatic stay on secured assets” component vis-à-vis other components of creditor rights. Fifth and finally, to highlight a causal mechanism for our results, we examine inter-industry differences based on free cash flow to assets, in line with our Hypotheses 5.

6.1 Basic Tests

To test Hypotheses 1-3, we estimate the following model:

$$prob(y_{kct} = 1) = \beta_0 + \beta_1 \cdot \lambda_c + \beta_2 \cdot \theta_{ct} + \beta_3 \cdot (\lambda_c * \theta_{ct}) + \beta X + \varepsilon_{kct} \quad (1)$$

where y_{kct} is an indicator variable equal to 1 if the bank loan deal to borrower k in country c in year t is Project Financed and 0 if the deal corresponds to a capital expenditure loan or a corporate purpose term loan (our two categories of Corporate Debt Finance loans);¹³ λ_c is the proxy for protection against insider stealing in country c while θ_{ct} denotes the level of creditor rights in country c in year t . Hypotheses 1 – 3 imply that $\beta_1 < 0, \beta_2 < 0, \beta_3 > 0$. Since we employ fixed effects in some of our later specifications, we employ the logit model since the fixed effects logit estimator is consistent (Wooldridge (2002)). Lel and Miller (2008) citing Ai and Norton (2003) note the difficulty in interpreting the interaction coefficient in non-linear models. We follow Lel and Miller (2008) in employing the methodology developed by Norton, Wang, and Ai (2004) to estimate the marginal effects of the interaction coefficient β_3 . We also estimate standard errors that are clustered by the country of the borrower.

Table 2 presents results of these regressions. In Columns (1) and (2), we separately test our Hypotheses using our two proxies for protection against insider stealing and find that $\beta_1 < 0, \beta_2 < 0, \beta_3 > 0$, with each of these coefficients being statistically significant. In Columns (3) and (4), we repeat these tests, *excluding Corporate Purpose Term Loans* from our sample, and leaving only Capital Expenditure loans as our sole category of Corporate Debt Finance loan. Recall that the category of Capital Expenditure loans offers the most cleanly specified Corporate Debt Finance loan for which the counterfactual choice of Project Finance is plausible. We find that the coefficient estimates for β_1, β_2 and β_3 in Columns (3)-(4) are very similar to those in Columns (1)-(2), which suggests that the economic effects

¹³Even though we are modelling a discrete choice, the discrete variable is an outcome of a latent continuous variable which captures the difference in project values from Project Finance and Corporate Debt Finance. Consider a latent variable Y_{ict} which denotes the value of the project under Project Financing minus its value under Corporate Debt Financing. Thus $Y_{ict} = \gamma_0 + \gamma_1 \cdot \lambda_c + \gamma_2 \cdot \theta_{ct} + \gamma_3 \cdot (\lambda_c * \theta_{ct}) + \gamma X - C + \nu_{kct}$, where C denotes the *additional* transaction costs incurred in undertaking Project Finance instead of Corporate Debt Finance. If $Y_{ict} > 0 (\leq 0)$, then project value using Project Finance dominates (is dominated by) that from Corporate Debt Finance. Therefore $y_{ict} = 1 (0)$.

from including Corporate Purpose Term Loans together with Capital Expenditure loans as Corporate Debt Finance are very similar to those obtained from including Capital Expenditure loans only. Because the explanatory power of our tests is greater when we include both categories of Corporate Debt Finance, as the substantially greater R-squared indicates, we employ this full sample for our remaining tests.

In Columns (5) and (6), we control for several sources of heterogeneity. First, we include several deal-level control variables and do not find any of them to be consistently significant statistically. Second, we include several industry-level variables. To capture the agency costs of free cash flow in an industry (Jensen and Meckling, 1976; Jensen, 1986), we follow Lang, Stulz, and Walking (1999) by including the median ratio of free cash flow to assets for each 4-digit SIC industry. We find the coefficient of free cash flow/ assets to be positive and statistically significant, which suggests that Project Finance is employed more in industries with higher free cash flows. We also include the median ratio of tangible assets to total assets, the median Tobin's Q, and the median ratio of long term debt to assets for each 4-digit SIC industry.¹⁴ We note that Project Finance is employed more in tangible asset-intensive industries and in industries with greater leverage, as seen in the positive coefficients on asset tangibility and long term debt to assets. We also test for the possibility that Project Finance could be advantageous in reducing the deadweight costs resulting from debt-equity conflicts that arise with Corporate Debt Finance — in particular, leverage-induced underinvestment. These deadweight costs arise when a firm has high leverage and significant growth opportunities. Our interaction between long term debt to assets and Tobin's Q captures the extent of these deadweight costs at the industry level. The positive coefficient on this interaction confirms that Project Finance is associated with industries with greater deadweight costs from such debt-equity conflicts. We also find that while the coefficient of long term debt to assets is significant despite the interaction, the coefficient of Tobin's Q is absorbed completely in its interaction with long term debt to assets. This suggests that

¹⁴Please refer to the Appendix for description for how these variables are measured.

while leverage has an effect on the choice of Project Finance over and above the deadweight costs from debt-equity conflicts, growth opportunities matter primarily through their effect on debt-equity conflicts.

Third, in columns (5) and (6), we include industry and year fixed effects to account for time-invariant unobserved heterogeneity at the industry-level and inter-temporal factors that may affect the choice of Project Finance. Finally, we include random effects at the borrower-level. Crucially, we find in Columns (5) and (6) that the coefficient estimates for our key explanatory variables retain their expected signs and are statistically significant.

We estimate economic magnitudes of these effects using the coefficients in Columns (5) - (6). One-standard-deviation increases in the ex post hurdles against self-dealing and one minus Dyck-Zingales' control premium lead to decreases of 12.9% and 7.5% in the likelihood of Project Finance, respectively. A one-point increase in the creditor rights index corresponds to a 9.9% - 14.6% decrease in the likelihood of Project Finance. Finally, a one-point increase in the creditor rights index reduces the marginal effect of ex post hurdles against self-dealing and one minus Dyck-Zingales' control premium by 17% and 14% respectively.

6.2 Industry-level Sample

Since the tests above are likely to be affected by deal-level omitted variables, we aggregate deals at 4-digit SIC level i in country c in year t and estimate the following OLS regressions:

$$y_{ict} = \beta_i + \beta_t + \beta_1 \cdot \lambda_c + \beta_2 \cdot \theta_{ct} + \beta_3 \cdot (\lambda_c * \theta_{ct}) + \beta X + \varepsilon_{ict} \quad (2)$$

where y_{ict} now denotes the percentage of deals that are project financed, β_i and β_t denote industry i and year t fixed effects. This industry-level analysis offers the advantage that our results are unlikely to be driven by omitted deal-level variables.

Table 3 presents the results of these regressions. We include the deal-level variables by averaging them to the industry-level of aggregation. We find that the coefficients β_1, β_2 and β_3 retain their expected signs and are statistically significant.

Unlike in the deal-level analysis, here we find that the percentage of secured loans, the average maturity and the percentage of senior loans are all statistically significant. These

coefficients indicate that the percentage of Project Finance is positively associated with average maturity and the percentage of secured loans while it is negatively associated with the percentage of senior loans.

As in the deal-level analysis, we find that Project Finance is employed more in industries with higher free cash flow to assets, greater leverage and greater deadweight costs from debt-equity conflicts.

6.3 Controlling for other country-level factors

Since the most important source of endogeneity stems from country-level omitted variables, we now run tests that include various country-level variables that have been highlighted by the existing literature. In Columns 1-2 (3-4) of Table 4, we present the results of the deal-level (industry-level) analysis.

First, since the law and finance literature highlights that investor protection is stronger in common law countries than in civil law countries, we include dummy variables for the French, German and Scandinavian legal origins (English legal origin is the omitted legal origin in specifying these dummies.) We find that compared to the English legal origin countries, Project Finance is employed less in the French, German and Scandinavian legal origin countries. Second, to control for the strength of institutions and the level of corporate governance, in general, we include measures of the enforceability of contracts (from DLLS 2006), the rule of law, corruption, the efficiency of the judicial system (all from LLSV 1998), the strength of political rights (from Freedom House 2007), legal formalism and the strength of public enforcement (both from DLLS 2006). These variables are important since the enforcement of Project Finance and Corporate Debt Finance contracts occurs under the judicial system of the country in which the project is located. We find that among these variables, Project Finance is positively associated with rule of law and with the strength of political rights, but is negatively associated with measures of corruption in the country. These are the only variables that are consistently significant statistically. Third, to control for the effects of information asymmetry, we include the presence of information sharing

mechanisms in the country in 1999 and find that Project Finance is positively associated with the presence of such information sharing (from Djankov et. al. 2005). Fourth, we include a measure for the efficiency of each country’s bankruptcy procedure (from Djankov et. al. 2008). Its coefficient is negative and it is statistically significant in one of the two specifications. The negative coefficient is consistent with the risk contamination motivation for Project Finance as proposed in Esty (2003), which would predict that Project Finance would be employed less in countries where bankruptcy procedure is more efficient.¹⁵

Finally, the level of financial and economic development may affect the relative attractiveness of Project Finance. Projects in less developed countries are more likely to include greater growth opportunities, but Project Finance may be relatively more attractive for projects with few anticipated growth opportunities or projects for which sponsors have ready access to external finance. To control for these effects, we include the log of GDP per capita as a proxy for the level of economic development. Also, following the existing literature (LLSV, 1998 and Rajan and Zingales, 1998), we include accounting standards (from LLSV 1998) and the log of private credit to GDP (from the Center for International Comparisons at the University of Pennsylvania) as proxies for financial development. We find that while Project Finance is positively correlated with the level of GDP per capita, the proxies for financial development do not have a consistent effect.

Crucially, our basic results remain very strong even after including a plethora of country-level variables together with random effects at the borrower level and using industry- and year fixed effects. Thus, even after controlling for time-varying omitted factors at the country-level as well as industry and time fixed effects, our results persist.

6.4 Difference-in-difference tests

Despite our tests above, inferring a causal relationship between Project Finance and investor protection laws still presents a challenge insofar as the relationship may neverthe-

¹⁵Large projects face the risk that if they fail, such failure may cause the parent to default on its obligations. Esty (2003) argues that Project Finance enables the management of such risk by isolating the large project in a Special Purpose Vehicle that is bankruptcy-remote to the parent/ corporate sponsor.

less be driven by country-level unobserved factors. For example, the pattern of industrial activity in a country could be systematically driving the choice of Project Finance as well as the country's legal arrangements. To make further progress on the causal relationship, we conduct difference-in-difference tests that exploit within-country differences in the usage of Project Finance relating to *exogenous* changes in legal rules. We exploit country-level changes in creditor rights and in shareholders' right to bring derivative suits.

A shareholder derivative suit is an action brought by a shareholder of a company in the name and on behalf of that company in order to seek redress for a harm done to the company by the company's directors or officers.¹⁶ The availability of shareholder derivative suits offers an important mechanism for the private enforcement of managers' fiduciary duties.

Countries differ in their restrictions on such shareholder suits. Some countries restrict such suits based on the size of the putative shareholder-plaintiff's holdings in the firm. Others may impose a demand requirement, which forces the shareholder first to petition the company's board for redress before suit may proceed. Wider availability of shareholder derivative suits imposes stronger constraints on insider stealing, and as earlier noted, this legal feature is included as a component of the DLLS index of ex post private control of self-dealing. Therefore, we exploit changes in laws governing shareholder derivative suits as exogenous changes in legal protection against insider stealing.

Panel A of Table 5 shows the countries that underwent a change in creditor rights during our sample period (Djankov et. al. 2005). All the countries in our sample decreased the level of creditor rights.¹⁷ Panel B of Table 5 shows the countries that underwent a change in shareholders' right to bring derivative suits. This list is constructed from Siems et. al.

¹⁶Because the firm's top managers—who ordinarily decide for the company who it will or will not sue—cannot generally be expected to subject themselves to suit by the company, shareholders are given the right to sue management in the company's name. Such an action is "derivative" in the sense that the right to sue belongs not to the party actually bringing the action, but is 'derived' from the company's rights. Given that it is the company's rights that are sought to be vindicated in such an action, the proceeds of a successful action are awarded to the corporation and not to the individual shareholders that initiated the suit.

¹⁷Acharya and Subramanian (2009) find three main reasons for the creditor rights changes in various countries. First, changes were sometimes initiated to promote innovation and economic growth. Second, changes were sometimes driven by a desire to save jobs. Third, changes were sometimes implemented as part of a general economic stimulus package.

(2008), as well as searches for changes in these laws in our sample countries through Lexis-Nexis Global. Three countries — Germany, Italy and Mexico — lowered the minimum ownership requirements for shareholders to file derivative suits during our sample period, while Australia instituted the mechanism of shareholder derivative suits.¹⁸ Note that the countries that effected changes in creditor rights do not overlap with countries that changed shareholder derivative suit rights. This enables us to cleanly infer the effect of each of these changes.

6.4.1 Changes in Creditor Rights

First, we exploit exogenous changes in creditor rights to test the following model:

$$\text{prob}(y_{kct} = 1) = \beta_k + \beta_t + (\beta_1 + \beta_2 \lambda_c) \cdot \text{Change_in_Creditor_Rights_Dummy}_{ct} + \beta X + \varepsilon_{kct} \quad (3)$$

where y_{kct} equals 1 if the bank loan deal to borrower k in country c in year t is project financed and 0 if the deal corresponds to a capital expenditure loan or a corporate purpose term loan; λ_c is the proxy for protection against insider stealing in country c . To reflect the decrease in creditor rights in some countries and no such change in other countries, $\text{Change_in_Creditor_Rights_Dummy}_{ct}$ equals 1 for country c and years $t \leq m$ if creditor rights decreased in country c in year m and equals 0 otherwise.¹⁹ β_k and β_t denote borrower and year fixed effects respectively. Since a borrower’s country does not change through time, borrower fixed effects subsume the country fixed effects that are required to identify the difference-in-difference coefficients. Similarly, since borrowers do not change their primary industry of operation, the borrower fixed effects subsume industry fixed effects as well. The coefficient β_1 measures as a difference-in-difference the direct effect of the change in creditor rights on Project Finance while β_2 captures the interaction of creditor rights with proxies for

¹⁸Siems et. al. (2008) note that the changes in the shareholders’ ability to initiate derivative suits were part of a rising trend for shareholder protection in various countries.

¹⁹Our sample of creditor rights changes over the period 1993-2003 includes only decreases in creditors rights. Note that though some countries increased the creditor rights, these countries are not in our sample because either the DLLS measure of self-dealing or the Dyck-Zingales measure of private benefits of control are not available for these countries. See Acharya and Subramanian (2009) for the full list of countries that changed creditor rights during the period 1978-2002.

protection against insider stealing as a difference-in-difference. Consistent with Hypotheses 2 and 3, we predict that $\beta_1 < 0$ and $\beta_2 > 0$. To ensure that country-level changes in protection against insider stealing through changes in shareholders' right to derivative suits (which we employ as a time-series proxy for changes in λ_c) do not affect the interpretation of our results, we exclude from these regressions those countries that underwent a change in shareholders' right to derivative suits. Given no change in λ_c , the borrower fixed effects capture all country-level variation in this variable. Therefore, the coefficient of protection against insider stealing is not identified in (3).

Columns 1-2 in Panel C of Table 5 present results of the difference-in-difference test described above. Using both the ex post hurdles against self-dealing and one minus the Dyck-Zingales control premium, we find that $\beta_1 < 0$, and $\beta_2 > 0$ and these coefficients are strongly significant statistically.

Next, we repeat specification (3), this time including (country * industry) fixed effects instead of borrower fixed effects. To avoid having to include an extraordinarily large number of dummies, we define industries as in Panel B of Table 1. Thus, compared to the usual difference-in-difference specification that includes country and year fixed effects, we employ a tighter specification by controlling for unobserved factors in a given industry for a given country in our sample. To control for borrower level heterogeneity and inter-temporal factors, we also include borrower random effects and year fixed effects respectively.

Columns 3-4 in Panel C of Table 5 present results of these specifications. Using both the ex post hurdles against self-dealing and one minus the Dyck-Zingales control premium, we again find that $\beta_1 < 0$, and $\beta_2 > 0$, and these coefficients are strongly significant statistically.

Using our results from columns 1 and 2, we estimate the economic magnitude of the effect as follows. Compared to countries that did not undergo a change in creditor rights, the decrease in creditor rights in the countries in our sample increased the likelihood of Project Finance by 5.2% - 12.4% and increased the marginal effect of protection against insider stealing by 24.2% - 32.7%.

6.4.2 Changes in Shareholders' Right to Derivative Suits

We rely on changes in shareholders' right to derivative suits in some countries in our sample to identify as a difference-in-difference the effect of protection against insider stealing.

We test the following model:

$$prob(y_{kct} = 1) = \beta_k + \beta_t + (\beta_1 + \beta_2 \theta_c) \cdot Change_in_Derivative_Suit_Rules_Dummy_{ct} + \beta X + \varepsilon_{kct} \quad (4)$$

where y_{kct} , β_k and β_t are defined as in (3).

To reflect an increase in protection against insider stealing in some countries and no such change in other countries, $Change_in_Derivative_Suit_Rules_Dummy_{ct}$ equals 1 for country c and years $t > m$ if shareholders' right to derivative suits was instituted or restrictions relaxed in country c in year m , and equals 0 otherwise. As in (3), borrower fixed effects subsume the country and industry fixed effects. The coefficient β_1 measures as a difference-in-difference the direct effect of a change in protection against insider stealing while the coefficient β_2 captures the interaction of creditor rights with proxies for protection against insider stealing as a difference-in-difference. Consistent with Hypotheses 1 and 3, we hypothesize that $\beta_1 < 0$ and $\beta_2 > 0$. To ensure that country-level changes in creditor rights do not affect the interpretation of our results, we exclude from these regressions those countries that underwent a change in creditor rights.

Column 5 in Panel C of Table 5 present results of the difference-in-difference test described above. We find that $\beta_1 < 0$ and $\beta_2 > 0$ and these coefficients are significant statistically.

In Column 6, we repeat specification (4) by including (country * industry) fixed effects, year fixed effects and borrower random effects as in Columns 3 and 4 earlier. We find that that $\beta_1 < 0$ and $\beta_2 > 0$ and these coefficients are significant statistically.

Using column 5, we estimate the economic magnitude of the effect as follows. Compared to countries that did not undergo a change, an improvement in shareholders' right to derivative suits decreased the likelihood of Project Finance by 10.8% and decreased the marginal effect of creditor rights by 32.4%.

The difference-in-difference tests above alleviate important endogeneity concerns described in the Introduction, since the tests exploit *variation across time* in the choice of Project Finance vis-à-vis Corporate Debt Finance *within a given industry in a given country*. These tests therefore provide very strong support for the causal effect of laws against insider stealing and creditor rights laws on the choice of Project Finance versus Corporate Debt Finance.

6.5 Components of Creditor Rights

To investigate Hart’s (1995) prediction that the lender’s right to liquidate collateral assets is *central* to forcing a borrower to repay, we test our Hypothesis 4, which states that the “no automatic stay on secured assets” component of creditor rights has a disproportionately greater effect on the choice of Project Finance versus Corporate Debt Finance than the other components of creditor rights. As noted earlier, the other three components indicate whether: (a) secured creditors are first paid; (b) restrictions exist on initiation of reorganization; and (c) management is ousted in reorganization (LaPorta et. al. 1998).

Table 6 reports the results of regressions in which we disaggregate the components of the creditor rights index and interact each of these components with our proxies for protection against insider stealing. Columns (1) and (2) display the results of logit regressions using our deal-level sample while Columns (3) and (4) display the results of OLS regressions using the 4-digit SIC industry-level sample. We note that across the four columns, the “no automatic stay on secured assets” and “secured creditors paid first” components are negative and statistically significant (which is consistent with Hypothesis 2) while their interaction with proxies against insider stealing are positive and statistically significant (which is consistent with Hypothesis 3). The other two components are generally not statistically significant. Crucially, we find that the coefficient of the “no automatic stay on secured assets” component is at least twice the magnitude of the “secured creditors paid first” component, which is consistent with Hypothesis 4.

6.6 Inter-industry differences based on free cash flows

To highlight a causal mechanism for our results so far — cash flow verifiability in Project Finance — in our final set of tests, we investigate inter-industry differences, based on industry-level free cash flows, in the effect of laws against stealing and creditors’ rights on the choice of Project Finance versus Corporate Debt Finance. We estimate the following model:

$$y_{ict} = \beta_i + \beta_c + \beta_t + (\beta_1\lambda_c + \beta_2\theta_{ct} + \beta_3\lambda_c\theta_{ct}) * \gamma_{ict} + \beta_4\gamma_{ict} + \beta_5\theta_{ct} + \beta_6\lambda_c\theta_{ct} + \beta X + \varepsilon_{ict} \quad (5)$$

where all the variables except γ_{ict} are defined as in (1) before. γ_{ict} is the ratio of free cash flow to assets for each 4-digit SIC industry in a given country in a given year.

Because we are testing an interaction of country-level variables with an industry-level variable, we include both country and industry fixed effects to account for all time-invariant heterogeneity at the country and industry levels respectively. Note that since the country fixed effects subsume all the variation in λ_c , we do not include it separately in the regressions. The year fixed effects capture all inter-temporal variations in the determinants of Project Finance. As in our prior tests, we expect the effects of protection against insider stealing and creditor rights to be negative and their interaction to be positive, i.e., $\beta_4 < 0$, $\beta_5 < 0$, and $\beta_6 > 0$. According to Hypotheses 5, these predicted country-level effects would be relatively greater in industries where free cash flows are higher, i.e. γ_{ict} is higher. Therefore, we expect $\beta_1 < 0$, $\beta_2 < 0$, and $\beta_3 > 0$.

Table 7 presents results of the logit regression. The coefficients in Columns (1) and (2) confirm the relationships we expect and are uniformly statistically significant. Based on the smallest coefficients for the interaction terms, the economic magnitude of the interaction effect is as follows. If we consider two industries whose free cash flow to assets differ by one standard deviation, then the marginal effects of protection against insider stealing, creditor rights and the interaction between the two are respectively greater by 13%, 9% and 6% in

the higher cash flow industry than the lower cash flow industry.

6.6.1 Examining alternative channels

We argued that the cash flow verifiability in Project Finance substitutes for legal protection against insider stealing and creditor rights. Consistent with the role of cash flow verifiability, we have seen that the benefit of Project Finance as a substitute for investor protection is relatively higher in industries with higher free cash flows. However, it is possible that such inter-industry differences based on the level of free cash flow are due to (i) industry-level factors other than free cash flow; and (ii) country-level variables other than protection against insider stealing and creditor rights. We now examine these alternative explanations.

First, it is possible that the greater debt capacity in Project Finance stems from the reduction in deadweight costs resulting from debt-equity conflicts (rather than cash flow verifiability). Deadweight costs from debt-equity conflicts arise in a highly levered firm with growth opportunities (Myers 1977), and since Project Finance involves the financing of a single, discrete asset, it may mitigate such deadweight costs. To examine this alternative channel, we employ the interaction between long term debt to assets and Tobin's Q as a proxy for these deadweight costs at the industry-level. Since Project Finance mitigates these costs, it should be employed relatively more in those industries where such costs are greater. The coefficient of this interaction should therefore be positive. We find in Columns (3) and (4) of Table 7 that this indeed the case. To test whether this reduction in deadweight costs accounts for our main effect, we interact this measure of deadweight costs with our three main country-level variables – proxies for difficulty of insider stealing, creditor rights and their interaction. In columns (3) and (4), we find that the coefficients of the interaction of our country-level variables with our proxy for deadweight costs are of the same sign as their interactions with free cash flow to assets. They are also all statistically significant, suggesting that the mitigation of deadweight costs from debt-equity conflicts contributes to higher debt capacity in Project Finance too. Crucially, however, we find that the interaction of the

country-level variables with free cash flow to assets – the primary interactions of interest given our cash flow verifiability hypothesis – remain significant in Columns (3) and (4) as they were in Columns (1) and (2). Therefore, we conclude that the reduction in deadweight costs from debt-equity conflicts does not drive our results of interest.

Second, a more efficient bankruptcy process may mitigate the risk contamination aspect of Project Finance. Large projects face the risk that if they fail, such failure may cause the parent to default on its obligations. Esty (2003) argues that Project Finance enables the management of such risk by isolating the large project in a Special Purpose Vehicle that is bankruptcy-remote to the parent/ corporate sponsor. Such a benefit of Project Finance would be greater in countries where the bankruptcy process is more inefficient. Such a feature of Project Finance may account for our results for two reasons. First, industries with high free cash flow is high are often also industries with high leverage. In fact, the correlation between free cash flow to assets and long term debt to assets is 0.81 in our sample. Second, countries where creditor rights or protection against insider stealing are low may also happen to be countries where the bankruptcy process is more inefficient. The correlation between the efficiency of the bankruptcy process and our two proxies for protection against insider stealing are 0.57 and 0.64, though the correlation between creditor rights and the efficiency of the bankruptcy process is -0.08. To control for the possibility that this risk management aspect of Project Finance accounts for our inter-industry differences in the effect of laws against insider stealing and creditor rights law, we include an interaction between the country-level measure of efficiency of the bankruptcy process and industry-level leverage. This should eliminate the effects observed on our primary interactions if risk management is actually driving our results. In columns (3) and (4), we find that this is not the case.

In Columns (5) and (6) of Table 7, we include interactions of our country-level control variables with free cash flow, in addition to our primary interactions. Since the country-level variables do not vary across time, the levels of these variables are subsumed by the country fixed effects. We find that the interactions with free cash flow to assets of French and German

legal origins are positive, which suggests that Project Finance is used disproportionately more in higher free cash flow industries in French and German legal origin countries. This is consistent with the evidence in the law and finance literature that investor protection is generally lower in the French and German legal origin countries. We also find that the interaction with free cash flow to assets of the efficiency of the judiciary in a country, the index of political rights, and the log of GDP per capita are all negative, which suggests that Project Finance is employed disproportionately more in higher free cash flow industries in countries with less efficient judiciaries, weaker political rights, and lower GDP per capita.

Despite the inclusion of these interactions of country-level variables with industry-level free cash flow to assets, the interaction of free cash flow to assets with our country-level variables of interest — laws preventing insider stealing, creditor rights, and the interaction between them — retain their predicted signs and are quite statistically significant.

7 Discussion

7.1 Distinguishing Project Finance from Related Mechanisms

We have explained Project Finance as a unique arrangement with both organizational and contractual features that work in tandem to offer a private substitute for investor protection laws by making Project cash flows verifiable, thereby enhancing debt capacity. In this section, we distinguish Project Finance from related organizational and contractual mechanisms, which offer features similar to Project Finance, but which are by themselves insufficient to make cash flows verifiable.

Separate legal incorporation significantly reduces the cost and difficulty of monitoring managerial actions and assessing performance. However, what is also essential to Project Finance is that the Project Company own and operate only a *single, discrete* project. Only this combination of separate incorporation and a single project enables transparent cash flow separation. A subsidiary with multiple projects, for example, offers no advantage as to cash flow separation and monitoring compared to the parent. Rather than monitoring commingled

cash flows from numerous assets, and trying to sort out noisy signals on managerial skill, the Project Finance lender monitors relatively simple cash flow streams from a single asset. If the subsidiary company houses multiple projects, the extensive contractual constraints on cash flow necessary to effective monitoring are as costly to the subsidiary as they are to the corporate parent in terms of lost managerial flexibility.

Corporate Debt Finance in the form of secured debt offers some of the advantages of Project Finance, but, again, is not a substitute. Secured debt with high leverage (SDHL), for example, offers two advantages of Project Finance. SDHL collateralizes corporate debt with specific assets in the same way that Project Finance does. The high leverage also reduces agency costs of free cash flow by reducing the amount of free cash managers have available in any period. What SDHL misses, however – that is central to Project Finance – is cash flow verifiability and concomitant control of the cash. With Project Finance, very little cash is likely ever to be free cash. Even after project expenses and scheduled debt service have been paid in a given period, the cash flow waterfall arrangement dictates the use of any remaining cash. The waterfall arrangement adjusts to absorb any free cash, whether the project generates more or less cash flow than originally anticipated. The standard excess cash flow sweep covenant of Corporate Debt cannot effect the finely tuned cash management embodied in the cash flow waterfall arrangement of Project Finance. Therefore, SDHL cannot explain our main hypothesis – the inverse relationship between the likelihood of Project Finance and the strength of legal protections for outside investors.

Finally, note that Project Finance requires this tight control of cash since the lender can look only to project cash flows for repayment. More so than with Corporate Debt Finance, where multiple projects and growth opportunities offer some risk diversification, the Project Finance lender must guard against the possibility that future cash flows may be poor. This vigilance requires the cash flow waterfall arrangement with its multiple lender-monitored cash accounts. This feature further distinguishes Project Finance from subsidiary incorporation with multiple projects and SDHL.

7.2 The Nature of Our Inquiry: Private Debt

Our empirical analysis focused on private debt financing. We compare Project Finance to Corporate Debt Finance, two alternative approaches to bank financing. We acknowledge, however, that Corporate Debt Finance may not exhaust the universe of potential alternatives for financing large projects. Equity financing, public debt, and internal financing at the sponsor level may also be available in some cases. We nevertheless focus solely on private debt because this focus enables us to make sharper *ceteris paribus* comparisons of interest to us. In addition, data constraints preclude us from constructing comprehensive samples of these equity, public debt, or internal financings for which Project Finance would have offered a plausible alternative.

Including equity or public debt financing as alternatives would import significant additional issues that would confound our results and impede clean comparisons. Including equity financing, for example, would implicate optimal leverage questions and additional corporate governance issues specific to equity issuance. Moreover, any bias from ignoring hypothetical equity financing alternatives likely works against us here. Our hypothesis is that Project Finance is relatively more likely in countries with weak legal protections for investors. Weak investor protection has a second effect as well. Equity financing is relative less likely to offer a practical alternative to Project Finance in countries with weak legal protection. Dispersed equity is relatively unattractive to investors with weak legal protection; it is possible only in sophisticated legal regimes. Equity financing is relatively more likely to displace Project Finance in countries with strong investor protection. Therefore, we are likely to undercount the equity-financed alternatives to Project Finance by a greater margin in countries with stronger investor protection. Consequently, compared to the use of Project Finance in the population, our sampling of Project Finance alternatives using only Corporate Debt Finance would lead to overestimation of the likelihood of Project Finance in countries with strong investor protection (e.g., the United States but not Venezuela). Since our hypothesis is that Project Finance would be used relatively less in countries with strong investor protection,

this bias works against our hypothesis.

Including public debt as an additional alternative to Project Finance would similarly muddy our analysis. Adding public debt necessarily implicates the more general issue concerning the choice of public versus private debt. This general question has been studied quite extensively (see Denis and Mihov, 2003 and references therein), and it is a question that, while related, is different from the one we examine here.

As for internal financing, we anticipate two offsetting dynamics that might be relevant. First, in countries with weak investor protection laws, managers are more likely to steal, which may make internal financing less likely because managers would rather steal free cash than invest it. Second, in these same weak legal regimes, information asymmetry may be severe, causing external financing alternatives to be scarce and leaving internal financing as the only alternative. Which of these opposing dynamics would dominate is an open question that is beyond the scope of our study.

8 Conclusion

We investigate Project Finance as a private response to inefficiencies created by weak legal protection of outside investors. In the context of large investment projects, Project Finance offers a contractual and organizational substitute for investor protection laws by making cash flows *verifiable*, thereby enhancing debt capacity. Project Finance makes cash flows verifiable through: (i) contractual arrangements made possible by structuring the Project Company as a single, discrete project legally separate from the sponsor; and (ii) private enforcement of these contracts through a network of project accounts that ensures lender control of project cash flows. Comparing the incidence of bank loans for Project Finance with regular corporate loans for large investments (“Corporate Debt Finance”), we show that Project Finance is more likely in countries with weaker laws against insider stealing and weaker creditor rights laws. In addition, stronger creditor rights mitigate the marginal effect of weaker laws against insider stealing on the choice of Project Finance versus Corporate Debt Finance.

To ensure sharp *ceteris paribus* comparisons, we focus only on private debt alternatives for Project Finance. Our results, however, may have broader implications. In weak legal environments, Project Finance may be preferable not only to Corporate Debt Finance, but also to equity finance, since weak investor protection laws make equity financing and public debt finance relatively unattractive. If these conjectures hold, then our findings on the choice of Project Finance versus Corporate Debt Finance may hold for external Corporate Finance generally. We leave this interesting question for future study.

References

- [1] Acharya, Viral V. and Krishnamurthy V. Subramanian, 2009, “Bankruptcy Codes and Innovation,” *Review of Financial Studies*, Forthcoming.
- [2] Ayotte, Kenneth and Yun, Hayong, 2009, “Matching Bankruptcy Laws to Legal Environments,” *Journal of Law, Economics and Organization*, 25(1), Forthcoming.
- [3] Ai, Chunrong and Norton, Edward C., 2003, “Interaction terms in logit and probit models,” *Economics Letters*, 80(1), 123-129.
- [4] Norton, Edward C., Wang, Hua and Ai, Chunrong. 2004. “Computing interaction effects in logit and probit models,” *The Stata Journal*, 4(2), 103-116.
- [5] Berkovitch, E. and Kim E. H., 1990, “Financial Contracting and Leverage Induced Over- and Under-Investment Incentives,” *Journal of Finance*, 45(3), 765-794.
- [6] Chemmanur, T. J. and John, K., 1996, “Optimal Incorporation, Structure of Debt Contracts, and Limited-Recourse Project Financing,” *Journal of Financial Intermediation*, 5(4), 372-408.
- [7] Coase, Ronald H., 1960, “The Problem of Social Cost,” *Journal of Law and Economics*, 3(1), 1-44.
- [8] Denis, D. J. and V. T. Mihov, 2003, “The choice among bank debt, non-bank private debt, and public debt: evidence from new corporate borrowings,” *Journal of Financial Economics* 70, 3-28.
- [9] Djankov, S., Hart, O., McLeish, C. and Shleifer, A., 2008, “Debt enforcement around the world,” *Journal of Political Economy*, 116(6), 1105-1149.
- [10] Djankov, S., LaPorta, R., Lopez-de-Silanes, F. and Shleifer, A., 2006, “The law and economics of self-dealing,” *Journal of Financial Economics*.

- [11] Djankov, S., McLeish, C. and Shleifer, A., 2007, "Private credit in 129 countries," *Journal of Financial Economics*, 84, 299-329.
- [12] Dyck, Alexander and Luigi Zingales, 2004, "Private Benefits of Control: An International Comparison," *Journal of Finance*, 59, 537-600.
- [13] Esty, B. C., 2003, "The economic motivations for using project finance," Working Paper.
- [14] Esty, B. C., 2004, "When do foreign banks finance domestic projects? New evidence on the importance of legal and financial systems," Working Paper.
- [15] Esty, Benjamin C. and Michael Kane, 2001, "BP Amoco (A): Policy Statement on the Use of Project Finance," *Harvard Business School Teaching Note* 9-201-054.
- [16] Esty, B. C. and Megginson, W. L., 2003, "Creditor rights, enforcement, and debt ownership structure: Evidence from the global syndicated loan market," *Journal of Financial and Quantitative Analysis* 38, 37-59.
- [17] Esty, Benjamin C. and Aldo Sesia, Jr., 2007, "An overview of project finance & infrastructure finance – 2006 update," *Harvard Business School Teaching Note* 9-207-107.
- [18] Freedom House, 2007. "Annual freedom in the world survey: political rights and civil liberties rating 1972-2006," <http://www.freedomhouse.org>.
- [19] Hart, Oliver. 1994. "A Theory of Debt Based on the Inalienability of Human Capital," *Quarterly Journal of Economics*, 109(4).
- [20] Hart, Oliver. 1995. "Firms, contracts, and financial structure," *Clarendon Press*.
- [21] Hart, O. & Moore, J., 1989. "Default And Renegotiation: A Dynamic Model Of Debt," Working paper # 520, MIT.
- [22] Huang, P.H., Knoll, M.S., 2000, "Corporate Finance, Corporate Law and Finance Theory," *Southern California Law Review*, 74(1), 175-192.
- [23] Jensen, M. C., 1986, "The agency costs of free cash flow," *American Economic Review*, 76, 323-329.
- [24] Jensen, M. C. and Meckling, W. H., 1976, "Theory of the firm: Managerial behavior, agency costs and ownership structure," *Journal of Financial Economics* 3, 305-360.
- [25] Kleimeier, S., and William L. Megginson. 2000, "Are Project Finance Loans Different From Other Syndicated Credits?," *Journal of Applied Corporate Finance*, 12, 75-87.
- [26] Lang, L.H.P., Stulz, R. M., and Walking, R. A., 1999, "A test of free cash flow hypothesis: The case of bidder returns," *Journal of Financial Economics*, 29, 315-339.
- [27] La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny, 1997, "Legal determinants of external finance," *Journal of Finance*, 52, 1131-1150.

- [28] La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny, 1998, “Law and finance,” *Journal of Political Economy*, 101, 678-709.
- [29] La Porta, R., F. Lopez-de-Silanes, and A. Shleifer, 1999, “Corporate Ownership Around the World,” *Journal of Finance*, 54(2), 471-517.
- [30] Lel, Ugur & Darius P. Miller, 2008, “International Cross-Listing, Firm Performance, and Top Management Turnover: A Test of the Bonding Hypothesis,” *Journal of Finance*, 63(4), 1897-1937.
- [31] Nevitt Peter K. and Frank J. Fabozzi, 2000, “Project Financing,” *Euromoney Books*.
- [32] Qian, J. and Strahan, P. E., 2007, “How laws and institutions shape financial contracts: The case of bank loans,” *Journal of Finance*, 62(6), 2803-2834.
- [33] Rajan, R. G. and Zingales, L., 1998, “Financial dependence and growth,” *American Economic Review*, 88, 559-586.
- [34] Shah, S. and Thakor, A. V., 1987, “Optimal capital structure and project financing,” *Journal of Economic Theory*, 42(2), 209-243.
- [35] Shleifer, A. and Wolfenzon, D., 2002, “Investor protection and equity markets,” *Journal of Financial Economics*, 66, 3-57.
- [36] Siems, M. P. Lele, P. Iglesias-Rodriguez, V. Mollica, T. Klauberg and S. Heidenhain. 2008. “CBR Extended Shareholder Protection Index,” Working Paper, University of Cambridge.
- [37] Spamann, H., 2009, ““Law and Finance” Revisited,” Working paper, Harvard Law School.
- [38] Wooldridge, Jeffrey M., 2002, “Econometric Analysis of Cross Section and Panel Data,” Cambridge: The MIT Press.

Figure 1: Percentage of Project Finance versus proxies for insider stealing

The y-axis plots the percentage of Project Finance deals in a country while the x-axis plots the two proxies for protection against insider stealing: (i) ex-post private control of self-dealing and (ii) 1 - Dyck-Zingales control premium. Higher values of these proxies indicates greater protection against insider stealing. In Panel B, the hollow circles (hollow squares) in the scatter plots and the solid (dash dot) lines in the linear fit represent stronger (weaker) creditor rights, which correspond to the DMS creditor rights index equal to 2, 3 or 4 (0 or 1).

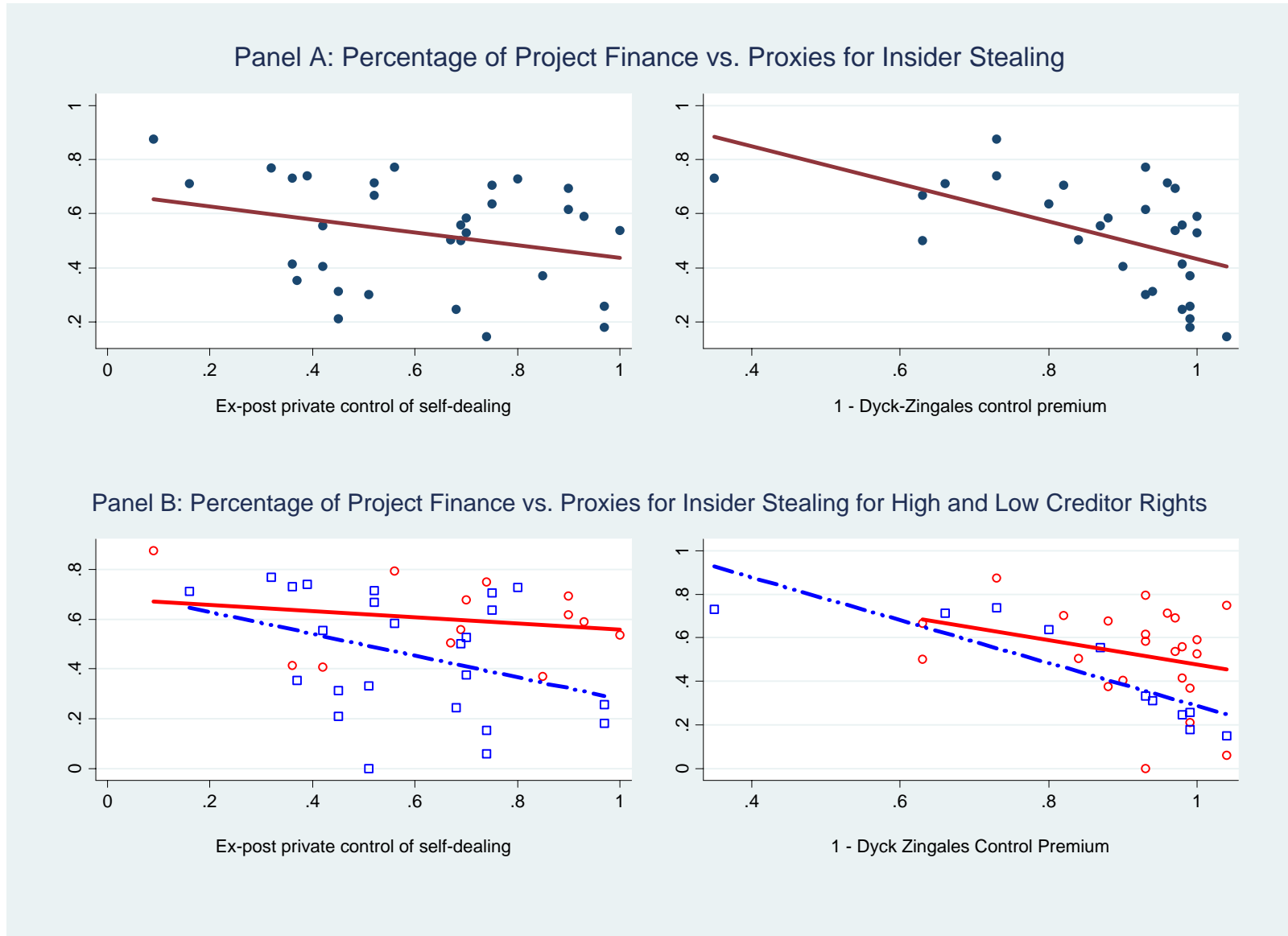


Table 1 – Summary Statistics

This Table displays the various summary statistics for Project Finance versus Corporate Debt Finance. The unit of observation is a bank loan deal from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. Project Finance includes loans with primary purpose as Project Finance while Corporate Debt Finance includes Capital Expenditure loans as well as Corporate Purpose Term Loans with deal amounts above \$0.5 million (converted values).

Panel A: Features of Bank Loan Contracts in Project Finance and Corporate Debt Finance

Summary Statistic	Project Finance	Capital expenditures	Corporate Purpose Term loans
Observations	1595	774	2743
Deal Amount (in \$ millions)			
Mean	255.2	215.5	244.4
Median	123.9	155.0	100.0
Std. Devn.	482.2	597.9	635.1
Minimum	0.5	0.5	0.8
Maximum	10513.8	10586.3	10588.9
Maturity (in years)			
Mean	10.7	10.5	10.4
Median	10.6	10.5	10.4
Std. Devn.	0.7	0.4	0.4
Minimum	9.5	9.5	9.5
Maximum	20.0	12.8	12.8
Number of Lenders			
Mean	7.1	5.3	5.0
Median	4	3	3
Std. Devn.	7.4	6.1	6.4
Minimum	1	1	1
Maximum	50	48	96

Panel B: Project and Corporate Debt Finance Deals by Industry

Industry Description	SIC Codes	Capital expenditures	Corporate Purpose Term Loans	Project Finance	Total	% Project Finance
Construction	15-17	9	56	151	216	70%
Manufacturing	20-39	288	758	237	1283	18%
Mining	10-14	21	171	115	307	37%
Real Estate, Insurance and Other Finance	60-67	49	424	191	664	29%
Retail/Wholesale/Distributors	50-59	50	246	38	334	11%
Services	70-89	124	408	124	656	19%
Transportation	40-49	135	496	466	1097	42%

Panel C: Summary Statistics for the Main Explanatory Variables

	Observations	Mean	Std. Devn.	Minimum	Maximum
Ex-post private control of self-dealing	5002	0.87	0.19	0.09	1
1- Dyck Zingales' Control Premium	4964	0.97	0.08	0.35	1.04
Creditor Rights	5002	1.54	1.00	0	4
Free Cash Flow to Assets	5002	-0.14	1.17	-2	2

Table 2: Effect of Protection against Insider Stealing and Creditor Rights

This Table reports the marginal effects from the following logit regression:

$$prob(y_{kct} = 1) = \beta_0 + \beta_1 \lambda_c + \beta_2 \theta_{ct} + \beta_3 \lambda_c \theta_{ct} + \beta X + \varepsilon_{kct}$$

where y_{kct} is an indicator variable equal to 1 if the bank loan deal to borrower k in country c in year t is Project Financed and 0 if the deal corresponds to a capital expenditure loan or a corporate purpose term loan (our two categories of Corporate Debt Finance loans). λ_c is the proxy for protection against insider stealing in country c while θ_{ct} denotes the level of creditor rights in country c in year t . The sample of bank loans is drawn from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. The coefficient estimates correspond to the marginal effects – we use the methodology employed in Norton, Wang, and Ai (2004) to estimate the interaction coefficient β_3 . Robust standard errors are clustered by the country of the borrower. ***, **, * represent coefficients that are statistically significant at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Proxy for Protection against Insider Stealing:	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium
Protection against Insider Stealing	-0.745*** (4.28)	-0.964*** (3.11)	-0.743*** (3.48)	-1.187*** (3.79)	-0.677*** (3.53)	-0.941*** (3.00)
Protection against Insider Stealing * Creditor Rights	0.111** (2.40)	0.134*** (3.63)	0.107** (2.12)	0.157*** (5.17)	0.113** (2.34)	0.136*** (3.40)
Creditor rights	-0.093* (1.90)	-0.140*** (2.84)	-0.090* (1.83)	-0.160*** (4.14)	-0.099** (2.03)	-0.146*** (2.89)
All in spread drawn					-0.056 (1.27)	-0.075** (2.01)
Log of Deal Amount					-0.003 (0.31)	-0.008 (0.93)
One if Secured					0.015 (1.29)	0.017 (1.38)
Maturity					0.129** (2.22)	0.103 (1.58)
One if Borrower not rated					0.034 (1.02)	0.018 (0.62)
One if Senior					-0.136 (1.56)	-0.132 (1.54)
Free Cash Flow / Assets					0.122*** (5.76)	0.111*** (5.46)
Tangibility					0.116** (2.56)	0.077* (1.74)
Interest Expense / Net Income					0.012 (1.43)	0.005 (0.59)
LT Debt / Total Assets					0.229*** (4.19)	0.225*** (3.54)
Tobin's Q					0.100 (1.05)	0.063 (0.69)
LT Debt / Total Assets * Tobin's Q					0.799*** (8.13)	0.742*** (6.79)
Sample	Full	Full	Excludes Corporate Purpose Term Loans		Full	Full
Borrower Random Effects	No	No	No	No	Yes	Yes
Industry Fixed Effects	No	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	Yes
Observations	5005	4964	2296	2264	4533	4493
R-squared	0.39	0.46	0.24	0.36	0.68	0.71

Table 3: Tests controlling for deal and borrower level endogeneity using industry level sample

This Table reports results from the following OLS regression:

$$y_{ict} = \beta_i + \beta_t + \beta_1 \lambda_c + \beta_2 \theta_{ct} + \beta_3 \lambda_c \theta_{ct} + \beta X + \varepsilon_{ict}$$

where y_{ict} denotes the percentage of Project Financed deals in 4-digit SIC industry i in country c in year t . Our two categories of Corporate Debt Finance include capital expenditure loans and corporate purpose term loan. λ_c is the proxy for protection against insider stealing in country c while θ_{ct} denotes the level of creditor rights in country c in year t . The sample of bank loans is drawn from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. Robust standard errors are clustered by the country of the borrower. ***, **, * represent coefficients that are statistically significant at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Proxy for Protection against Insider Stealing:	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium
Protection against Insider Stealing	-0.702*** (7.84)	-1.153*** (5.89)	-0.651*** (3.70)	-1.220*** (4.66)	-0.242*** (4.14)	-0.502*** (5.25)
Protection against Insider Stealing * Creditor Rights	0.044** (2.48)	0.071*** (3.69)	0.061 (1.60)	0.126*** (3.75)	0.015* (2.00)	0.029*** (3.09)
Creditor rights	-0.027* (1.68)	-0.063** (2.56)	-0.047* (1.72)	-0.125*** (3.02)	-0.008* (1.76)	-0.025** (2.24)
Average of All in spread drawn					0.020 (0.75)	0.016 (0.51)
Average of Log of Deal Amount					0.004 (0.43)	0.001 (0.10)
% of Secured Loans					0.016** (2.29)	0.018*** (2.78)
Average Maturity					0.126*** (7.86)	0.131*** (6.89)
% of Borrowers not rated					0.046 (1.62)	0.038 (1.29)
% of Senior loans					-0.043* (1.85)	-0.048** (2.17)
Free Cash Flow / Assets					0.144*** (3.76)	0.135*** (3.76)
Tangibility					0.088 (1.07)	0.075 (0.95)
Interest Expense / Net Income					0.028* (2.00)	0.025* (1.98)
LT Debt / Total Assets					0.250** (2.13)	0.263** (2.29)
Tobin's Q					0.044 (0.46)	0.020 (0.23)
LT Debt / Total Assets * Tobin's Q					1.318*** (4.74)	1.245*** (4.45)
Sample	Full	Full	Excludes Corporate Purpose Term Loans		Full	Full
Industry Fixed Effects	No	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	Yes
Observations	1795	1762	1212	2264	1677	1645
R-squared	0.16	0.19	0.09	0.36	0.75	0.75

Table 4: Tests controlling for other country level factors

Columns 1-2 in this table report the marginal effects from the following logit regression:

$$prob(y_{kct} = 1) = \beta_0 + \beta_1 \lambda_c + \beta_2 \theta_{ct} + \beta_3 \lambda_c \theta_{ct} + \beta X + \varepsilon_{kct}$$

where y_{kct} equals 1 if the bank loan deal to borrower k in country c in year t is Project Financed and 0 if it corresponds to Corporate Debt Finance. Columns 3-4 estimate the following OLS regression:

$$y_{ict} = \beta_i + \beta_t + \beta_1 \lambda_c + \beta_2 \theta_{ct} + \beta_3 \lambda_c \theta_{ct} + \beta X + \varepsilon_{ict}$$

where y_{ict} denotes the percentage of Project Financed deals in 4-digit SIC industry i in country c in year t. λ_c is the proxy for protection against insider stealing in country c while θ_{ct} denotes the level of creditor rights in country c in year t. Bank loans are drawn from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. Robust standard errors are clustered by the country of the borrower. In Columns 1-2, we use the methodology employed in Norton, Wang, and Ai (2004) to estimate the interaction coefficient β_3 . ***, **, * represent coefficients that are statistically significant at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)
Proxy for Protection against Insider Stealing:	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium
Protection against Insider Stealing	-1.863*** (3.44)	-1.581*** (4.59)	-0.871** (2.29)	-0.779* (1.99)
Protection against Insider Stealing * Creditor Rights	0.155*** (4.42)	0.177*** (9.96)	0.057* (1.83)	0.098** (2.59)
Creditor rights	-0.124*** (3.90)	-0.178*** (9.14)	-0.041 (1.46)	-0.092** (2.20)
French legal origin dummy	-0.536* (1.83)	-0.466** (2.46)	-0.220 (1.37)	-0.227 (1.27)
German legal origin dummy	-0.346** (2.19)	-0.274*** (3.10)	-0.115 (1.05)	-0.075 (0.73)
Scandinavian legal origin dummy	-0.352* (1.85)	-0.190** (2.38)	-0.258** (2.28)	-0.146** (2.65)
Enforceability of contracts	0.017 (0.59)	-0.014 (0.71)	-0.011 (0.75)	-0.025** (2.21)
Rule of Law	0.160** (2.47)	0.112** (2.22)	0.072* (1.77)	0.114*** (3.45)
Corruption	-0.153** (2.26)	-0.138*** (3.39)	-0.038 (0.91)	-0.075* (1.78)
Efficiency of Judicial System	-0.056* (1.65)	-0.037 (1.23)	-0.039* (1.92)	-0.049** (2.37)
Index of Political Rights	0.070** (2.12)	0.075*** (3.25)	0.046* (1.91)	0.073*** (3.31)
Legal Formalism Index	0.132 (1.44)	0.162** (2.55)	0.061 (1.30)	0.118** (2.53)
Public enforcement index	-0.112 (1.21)	-0.148** (2.32)	-0.018 (0.34)	-0.095* (1.72)
One if information sharing operates in 1999	0.376*** (2.75)	0.285*** (3.14)	0.173 (1.55)	0.238** (2.56)
Efficiency of the Bankruptcy Procedure	-0.005 (1.30)	-0.004* (1.96)	-0.001 (0.66)	-0.003 (1.54)
Log of GDP per capita	0.374* (1.73)	0.381** (2.23)	0.114 (0.97)	0.181 (1.16)
Log of Private Credit to GDP per capita	0.252 (1.64)	0.171* (1.93)	0.062 (0.83)	0.024 (0.33)
Accounting Standards	-0.006** (2.18)	-0.001 (0.22)	-0.003 (1.16)	0.004* (1.73)
Sample	Deal	Deal	Country, Industry, Year	Country, Industry, Year
Borrower Random Effects	Yes	Yes	N/A	N/A
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	4534	4494	1678	1646
R-squared	0.58	0.62	0.40	0.42

Table 5: Difference-in-Difference tests using Exogenous Country Level Legal Changes

Panel A: Countries that changed Creditor Rights		Panel B: Countries that changed laws governing Shareholder Derivative Suits	
Country Name	Year	Country Name	Year
Indonesia	1998	Australia	2000 (Instituted)
Japan	1999	Germany	1998 (minimum share ownership required for enforcing claims changed from 10% to 5%)
Sweden	1995	Italy	1998 (minimum share ownership required for enforcing claims changed from 10% to 5%)
Thailand	1998	Mexico	2001 (minimum share ownership required for enforcing claims changed from 33% to 15%)

Panel C: Regression Results

Columns 1-2 and 3 report respectively the marginal effects from the following logit regression:

$$prob(y_{kct} = 1) = \beta_0 + (\beta_1 + \beta_2 \lambda_c) * Change_in_Creditor_Rights_Dummy_{ct} + \beta X + \varepsilon_{kct}$$

$$prob(y_{kct} = 1) = \beta_0 + (\beta_1 + \beta_2 \theta_c) * Change_in_Derivative_Suit_Rules_Dummy_{ct} + \beta X + \varepsilon_{kct}$$

where y_{kct} equals 1 if the bank loan deal to borrower k in country c in year t is Project Financed and 0 if the deal corresponds to a capital expenditure loan or a corporate purpose term loan (our two categories of Corporate Debt Finance loans). λ_c and θ_c denote proxies for protection against insider stealing and creditor rights respectively. Note that since we exclude countries that changed their creditor rights when testing for the effect of changes in Rules governing derivative suits, the creditor rights variable does not change across time. $Change_in_Creditor_Rights_{ct}$ is a dummy variable that equals 1 for country c and years $t \leq m$ if creditor rights decreased in year m in country c and equals 0 otherwise. $Change_in_Derivative_Suit_Rules_{ct}$ is a dummy variable that equals 1 for country c and years $t > m$ if laws governing shareholder derivative suits were enacted or the restrictions underlying the same were relaxed in year m and equals 0 otherwise. β_k and β_t denote borrower and year fixed effects respectively. The sample of bank loans is drawn from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. Robust standard errors are clustered by the country of the borrower. ***, **, * represent coefficients that are statistically significant at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Change in Creditor Rights Dummy	-0.052*** (8.24)	-0.124*** (9.79)	-0.027* (1.76)	-0.083*** (3.94)		
Change in Creditor Rights Dummy * Ex-post private control of self-dealing	0.017*** (7.24)		0.014** (2.06)			
Change in Creditor Rights Dummy * (1 – Dyck Zingales Control Premium)		0.030*** (9.48)		0.025*** (4.56)		
Change in Derivative Suit Rules Dummy					-0.108*** (7.23)	-0.150*** (4.63)
Change in Derivative Suit Rules Dummy * Creditor Rights					0.035*** (8.73)	0.013* (1.72)
Borrower Fixed Effects [†]	Yes	Yes	No	No	Yes	No
Borrower Random Effects	No	No	Yes	Yes	No	Yes
(Country * Industry) Fixed Effects	No	No	Yes	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4727	4686	4727	4686	4747	4747
R-squared	0.29	0.31	0.26	0.26	0.32	0.26

[†]The borrower fixed effects subsume fixed effects for the country and primary industry of the borrower

Table 6: Effect of Creditor Rights Components and Protection against Self-dealing

Columns 1-2 in this table report the marginal effects from the following logit regression:

$$prob(y_{kct} = 1) = \beta_0 + \beta_1 \cdot \lambda_c + \beta_2 \cdot \theta_{ct} + \beta_3 \cdot (\lambda_c * \theta_{ct}) + \beta X + \varepsilon_{kct}$$

where y_{kct} equals 1 if the bank loan deal to borrower k in country c in year t is Project Financed and 0 if it corresponds to Corporate Debt Finance. Columns 3-4 estimate the following OLS regression:

$$y_{ict} = \beta_0 + \beta_1 \cdot \lambda_c + \beta_2 \cdot \theta_{ct} + \beta_3 \cdot (\lambda_c * \theta_{ct}) + \beta X + \varepsilon_{ict}$$

where y_{ict} denotes the percentage of Project Financed deals in 4-digit SIC industry i in country c in year t. λ_c is the proxy for protection against insider stealing in country c. θ_{ct} – country level creditor rights in country c in year t – is decomposed into its four components: (i) No automatic stay on secured assets; (ii) Secured creditors first paid; (iii) Restrictions for going into reorganization; and (iv) Management does not stay in reorganization. Bank loans are drawn from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. Robust standard errors are clustered by the country of the borrower. ***, **, * represent coefficients that are statistically significant at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)
Proxy for Protection against Insider Stealing:	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium	Ex-post private control of self-dealing	1 – Dyck Zingales Control Premium
Protection against Insider Stealing	-1.150*** (6.05)	-2.099*** (4.64)	-0.833*** (4.60)	-1.458*** (3.07)
No automatic stay on secured assets	-0.169*** (6.72)	-0.256*** (10.35)	-0.081** (2.05)	-0.146*** (3.10)
Secured creditors first paid	-0.057*** (3.56)	-0.09*** (2.76)	-0.038** (2.71)	-0.065** (2.07)
Restrictions for going into reorganization	-0.002 (0.05)	-0.053 (1.43)	-0.015 (0.76)	-0.029 (0.95)
Management does not stay in reorganization	0.113** (2.37)	0.086 (0.88)	0.065* (1.92)	0.015 (0.19)
No automatic stay on secured assets *	0.291***	0.300***	0.154**	0.181***
Protection against Insider Stealing	(8.25)	(10.44)	(2.43)	(3.36)
Secured creditors first paid *	0.072***	0.111***	0.052**	0.078**
Protection against Insider Stealing	(3.80)	(3.07)	(2.68)	(2.14)
Restrictions for going into reorganization *	0.001	0.055	0.023	0.028
Protection against Insider Stealing	(0.01)	(1.18)	(0.75)	(0.77)
Management does not stay in reorganization *	-0.190***	-0.086	-0.116**	-0.019
Protection against Insider Stealing	(2.74)	(0.78)	(2.21)	(0.22)
Sample aggregated at what level?:	Deal	Deal	Country, Industry, Year	Country, Industry, Year
Borrower Random Effects	Yes	Yes	N/A	N/A
Industry Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	No	No	Yes	Yes
Observations	4531	4491	1676	1644
R-squared	0.60	0.59	0.40	0.39

Table 7: Inter-industry differences based on Free Cash Flow to Assets in the effects of Protection against stealing and Creditor rights

This Table reports the marginal effects from the following logit regression:

$$prob(y_{kct} = 1) = \beta_i + \beta_c + \beta_t + (\beta_1 \lambda_c + \beta_2 \theta_{ct} + \beta_3 \lambda_c \theta_{ct}) \gamma_{ict} + \beta_4 \gamma_{ict} + \beta_5 \theta_{ct} + \beta_6 \lambda_c \theta_{ct} + \beta X + \varepsilon_{kct}$$

where y_{kct} is an indicator variable equal to 1 if the bank loan deal to borrower k in country c in year t is Project Financed and 0 if the deal corresponds to a capital expenditure loan or a corporate purpose term loan (our two categories of Corporate Debt Finance loans). λ_c is the proxy for protection against insider stealing in country c while θ_{ct} denotes the level of creditor rights in country c in year t . γ_{ict} denotes the free cash flow to assets in 4-digit SIC industry i in country c in year t . The sample of bank loans is drawn from Loan Pricing Corporation's Dealscan database for the period 1993 - 2003. The coefficient estimates correspond to the marginal effects. Robust standard errors are clustered by the country of the borrower. ***, **, * represent coefficients that are statistically significant at the 1%, 5% and 10% levels respectively.

Proxy for Protection against Insider Stealing:	(1) Ex-post private control of self-dealing	(2) 1 – Dyck Zingales Control Premium	(3) Ex-post private control of self-dealing	(4) 1 – Dyck Zingales Control Premium	(5) Ex-post private control of self-dealing	(6) 1 – Dyck Zingales Control Premium
Free Cash Flow to Assets * Protection against Insider Stealing	-0.353*** (7.73)	-0.488*** (5.66)	-0.359*** (6.01)	-0.480*** (5.09)	-0.138*** (2.84)	-0.113** (2.13)
Free Cash Flow to Assets * Protection against Insider Stealing * Creditor Rights	0.020*** (5.71)	0.032*** (5.86)	0.02*** (5.35)	0.032*** (6.81)	0.013** (2.74)	0.010* (1.71)
Free Cash Flow to Assets * Creditor Rights	-0.043* (1.86)	-0.125*** (3.08)	-0.043* (1.76)	-0.123*** (3.43)	-0.011** (2.48)	-0.003** (2.09)
Creditor rights	-0.123*** (38.46)	-0.169*** (24.44)	-0.122*** (29.11)	-0.168*** (22.25)	-0.127*** (39.85)	-0.18*** (27.01)
Protection against Insider Stealing * Creditor Rights	0.190*** (29.87)	0.182*** (28.96)	0.189*** (23.61)	0.181*** (22.68)	0.195*** (35.68)	0.192*** (34.03)
Free Cash Flow / Assets	0.387*** (9.15)	0.603*** (9.36)	0.386*** (6.06)	0.589*** (7.43)	0.830*** (4.83)	0.530** (2.65)
LT Debt / Total Assets * Efficiency of the Bankruptcy Procedure			0.001 (0.63)	0.000 (0.12)		
LT Debt / Total Assets			-0.012 (0.12)	0.016 (0.17)		
Deadweight Costs of D/E Conflicts * Creditor Rights * Protection against Insider Stealing			0.143*** (12.48)	0.112** (2.33)		
Deadweight Costs from Debt-Equity Conflicts * Creditor Rights			-0.097*** (7.81)	-0.126* (1.78)		
Protection against Insider Stealing * LT Debt / Total Assets * Tobin's Q			-0.139*** (4.04)	-0.148* (2.00)		
LT Debt / Total Assets * Tobin's Q			0.238*** (5.35)	0.279*** (3.74)		
Tobin's Q			-0.015 (0.16)	0.023 (0.23)		
Free Cash Flow to Assets * French Legal Origin					0.112*** (4.03)	0.137*** (4.43)
Free Cash Flow to Assets * German Legal Origin					0.070*** (3.80)	0.088*** (4.61)
Free Cash Flow to Assets * Scandinavian Legal Origin					0.015 (0.65)	0.025 (1.70)
Free Cash Flow to Assets * Enforcement of Contracts					0.005* (1.72)	0.000 (0.00)
Free Cash Flow to Assets * Rule of Law					-0.007 (0.87)	-0.003 (0.36)
Free Cash Flow to Assets * Corruption					0.013 (1.50)	0.011 (1.32)
Free Cash Flow to Assets * Efficiency of Judiciary					-0.008** (2.36)	-0.012*** (3.12)
Free Cash Flow to Assets * Political Rights Index					-0.019*** (3.53)	-0.011*** (3.06)
Free Cash Flow to Assets * Efficiency of Bankruptcy Process					0.000 (0.13)	-0.000 (0.32)

Free Cash Flow to Assets * Accounting Standards					-0.001 (0.66)	0.002** (2.51)
Free Cash Flow to Assets * Information sharing operates in 1999					-0.055** (2.74)	-0.051*** (3.18)
Free Cash Flow to Assets * Log of GDP per capita					-0.047** (2.47)	-0.041** (2.20)
Free Cash Flow to Assets * Log of Private Credit to GDP per capita					-0.010 (0.51)	-0.042 (1.61)
Free Cash Flow to Assets * Public enforcement index					0.084*** (5.19)	0.075*** (5.01)
Free Cash Flow to Assets * Legal Formalism Index					-0.038*** (4.05)	-0.035*** (3.10)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4534	4494	4505	4494	4534	4494
R-squared	0.83	0.82	0.83	0.83	0.84	0.83

Appendix: Description of Variables and their Sources

Variables	Description	Sources
<i>Country Level Data</i>		
Ex-post private control of self-dealing	Index of ex-post control over self-dealing transactions. Average of disclosure in periodic filings and ease of proving wrongdoing	DLLS (2006)
Creditor Rights	An index aggregating four different credit rights: restriction for going into organization, no automatic stay on secured assets, secured creditors first paid and management does not stay	DMS (2007)
1- Dyck Zingales Control Premium	The Dyck and Zingales (2004) Control premium measures the private benefits of control using premia paid for control block shares. This measure captures the ability of corporate insiders to divert corporate wealth to themselves.	Dyck and Zingales (2004)
Restriction for going into reorganization	Equals 1 if the reorganization procedure imposes restrictions , 0 otherwise	DMS (2007)
No automatic stay on secured assets	Equals 1 if the reorganization procedure does not impose an automatic stay on the assets of the firm on filing the reorganization petition , 0 otherwise	DMS (2007)
Secured creditors first paid	Equals 1 if secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm, 0 otherwise	DMS (2007)
Management does not stay	Equals 1 if an official appointed by the court, or by the creditors, is responsible for the business operation during reorganization, 0 otherwise	DMS (2007)
Efficiency of Bankruptcy Procedure	The present value of the terminal value of a bankruptcy company at the conclusion of the insolvency proceedings, taking into account insolvency costs	DHMS (2008)
Enforceability of Contracts	The real degree to which contractual agreements are honored, and complications presented by language and mentality differences	DLLS (2006)
Legal Origin	The legal origin of the company law or commercial code of each country	LLSV (1998)
Information Sharing operates in 1999	Equals 1 if either public registry or a private bureau operates in 1999, 0 otherwise	DMS (2005)
Legal Formalism Index (check-based)	Measures substantive and procedural statutory intervention in civil trials	DLLS (2006)
Accounting Standards	Index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items	LLSV (1998)
GDP per capita	Real gross domestic product per capita	PWT-6.2
Public enforcement index	Index of public enforcement if all disclosure and approval requirements have been met.	DLLS (2006)
Corruption	Ranges from 0 to 1 A composite index of corruption for the year 2000	LLSV (1998)
Rule of Law	An index measuring the rule of law in the country	LLSV (1998)
Efficiency of Judicial System	An index measuring the efficiency of the judicial system in the country	LLSV (1998)
Index of Political Rights	An index measuring the political rights in a country	Freedom House (2007)

Appendix (continued)

Variables	Description	Sources
<i>Industry Level Data</i>		
Asset Tangibility	The median of "net PP&E / total assets" for the 4-digit SIC industry	Worldscope
Tobin's Q	The median of "Tobin's Q" for the 4-digit SIC industry. Tobin's Q is computed as the ratio of the Market Value of Assets to their Book Value. The Market Value of Assets is constructed as the total book value of assets minus the book value of common equity minus the book value of deferred taxes plus the market value of equity.	Worldscope
Free Cash Flow to Assets	The median of "Free Cash Flow divided by Book Value of Assets" for the 4-digit SIC industry. Free Cash Flow to Assets is computed as Operating Income before Depreciation minus Interest Payments minus Income Taxes minus dividends paid to preferred and common stock holders	Worldscope
Long Term Debt / Total Assets	The median of "Long Term Debt divided by Total Assets" for the 4-digit SIC industry	Worldscope
Interest Expense/ Net Income	The median of "Interest Expense/ Net Income " for the 4-digit SIC industry	Worldscope
<i>Deal Level Data</i>		
Project Finance	Equals 1 if it is a non-recourse loan to finance a specific project, 0 if the specific primary purpose is capital expenditures or the loan is a Corporate Purpose Term Loan	DEALSCAN
Capital Expenditures	A loan for capital expenditures purpose	DEALSCAN
Corporate Purpose Term Loans	A term loan categorized as "Corporate Purposes" in Dealscan with minimum deal amount (converted in dollars) \$0.5mm	DEALSCAN
Deal amount	The commitment amount at the loan origination, in billions of dollars	DEALSCAN
All-in-spread	The amount the borrower pays in basis points over LIBOR for each dollar drawn down	DEALSCAN
Maturity	Loan maturity, in years	DEALSCAN
Secured	Equals 1 if the bank loan is secured by collateral, 0 otherwise	DEALSCAN
Senior	Equals 1 if the lenders are senior creditors, 0 otherwise	DEALSCAN