ARRANGER CERTIFICATION IN PROJECT FINANCE

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Abstract

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Key words: international corporate governance, bank lending, project finance, syndication
JEL classification: G21, G32, F34, K33

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ARRANGER CERTIFICATION IN PROJECT FINANCE

1. Introduction

Few ideas resonate as succinctly with financial economists as does the notion that trusted financial intermediaries can provide valuable certification for an unknown security issuer in new issues markets where information is asymmetrically distributed. Despite this essential plausibility, the empirical evidence on certification in the finance literature is both mixed and less than fully comparable. For example, it is unclear in which new issues markets (securities or banking) certification can be most effective, and how certification should express itself—as a higher price paid by investors for new securities or as a more accurate price reflecting all inside information. Equally unresolved is which party can best provide certification, an objective third party (auditor, underwriter) with no economic interest in the issuing firm or a stake-holding corporate insider such as a venture capitalist or a relationship bank. Perhaps the most intriguing unresolved questions are how certifying agents will be compensated for providing their services and by whom. Will they be paid directly, with a higher underwriting spread or arranger fee, or indirectly through increased market share, and will payment be made by the issuing firm or by other members of the underwriting syndicate? We empirically examine these questions by examining how certification is expressed and paid for in a large sample of syndicated project finance (PF) loans arranged by commercial banks between 1991 and 2005.

There is a large body of theoretical and empirical evidence on certification in new issues markets, summarized in Drucker and Puri (2007), that shows that financial intermediaries can provide economically valuable certification to issuers of securities. The theoretical motivation for certification by financial intermediaries draws on work by Leland and Pyle (1977), Fama (1985), Booth and Smith (1986) and Diamond (1991), all of whom predict that a financial intermediary can garner information about a firm through an existing borrowing relationship, which the intermediary can then use to credibly assert that issue prices for risky assets reflect potentially adverse private information. Many researchers have searched for evidence of certification by investment and commercial banking in the security issuance processes, with most [Blackwell, Marr, and Spivey (1990), Ng and Smith (1996), Puri (1996, 1999), Roten and Mullineaux (2002), Cooney, Kato, and Schallheim (2003), Narayanan, Rangan, and Rangan (2004), Schenone (2004), Fang (2005)] supporting the proposition that highly reputable banks can and do certify that issue prices reflect all material adverse information. Many of these same studies, plus the works of James (1987), Lummer and McConnell (1989), and Billett, Flannery, and Garfinkel (1995), show that commercial banks are especially trusted certifying agents, because of their inside knowledge about the issuing firm resulting from a pre-existing lending relationship. The studies that do not support

bank certification, especially Chemmanur and Loutskina (2006), generally suggest that prestigious banks have significant market power that allows them to extract rents from issuers and investors that overwhelm any possible beneficial certification effects. Other researchers examine whether venture capitalists [Megginson and Weiss (1991), Lee and Wahal (2004), Li and Masulis (2007), Chemmanur and Loutskina (2006)], auditors [Dichev and Skinner (2002)], lead arrangers of syndicated loans [Dahiya, Puri, and Saunders (2003), McCahery and Schweinbacher (2006), and Narayanana, Rangan, and Rangan (2007)], relationship banks [Benzoni and Schenone (2005) and Bharath, Dahiya, Saunders, and Srinivasan (2007)], and ratings agencies [Sufi (2007)] can provide similarly valuable certification, and most find at least partial support for a valuable certification role.

Though many of these are excellent studies, they all suffer from the twin difficulties of separating certification effects from other influences (particularly market power) and identifying all possible spill-over and unmeasured wealth effects occurring outside the financing event being studied. An example of the "commingling effect" is how prestigious venture capitalists and Bulge Bracket underwriters impact the degree of underpricing in IPO's. Megginson and Weiss (1991) find that highly reputable venture capitalists and underwriters reduced IPO underpricing during the 1980-87 period, but within a few years Beatty and Welch (1996) and later Lee and Wahal (2004) find that this effect flipped after 1990, with more prestigious agents being associated with *greater* underpricing. While top-quality investment banks may be able to certify that all information about a new issuer is being disclosed, and their involvement puts the banks' reputational capital at stake, their growing market power and distributional abilities after 1990 meant that the banks were able to capture all the benefit of certification (and more) in the form of greater underpricing. The "incomplete effects" problem implies that, even if certification occurs and is valuable, there may be important positive or negative spill-over effects not observed during the issue process itself. As a positive example of this, Duarte-Silva (2007) shows that when a firm planning a seasoned equity offering signs with an unexpectedly prestigious underwriter its stock price reacts positively on the announcement and the stock's bid-ask spread falls significantly thereafter. On the negative side, Ng and Smith (1996) show that underwriters often require issuing firms to offer warrants as compensation for accepting underwriting risk. In both cases, the costs and benefits of employing a prestigious underwriter will not be fully measured by examining a security sale itself.

Our study overcomes these problems by examining lead arranger certification in a sample of project finance (PF) loans. Esty (2007, pg. 213) defines PF as "the creation of a legally independent project company financed with equity from one or more sponsoring firms and non-recourse debt for the purpose of investing in a capital asset." These are inherently complex projects with large risks and massive informational asymmetries—yet which are funded with small amounts of private equity contributions and much larger amounts of non-recourse syndicated loans, which are the principal external,

capital-market financing.[1] The banks that arrange these credits become insiders to the project through working with the PF vehicle company's shareholders (known as project sponsors), and then must arrange the bulk of external financing by attracting other banks to become members of a loan syndicate.

We use PF loans as an ideal sample to test for certification. A PF loan sample overcomes both the commingling and the incomplete effects problems because PF loans are fully self-contained, one-time financing events, where there is no previous lending relationship between the arranging bank and the project sponsor, no shares of the project company trade before or after the funding event, and so *all* of the relevant pricing variables can be measured. This is true for no other corporate financing sample. Lead arranging banks serve as the classic delegated monitors [Fama (1985), Diamond (1984, 1991)], with the power and duty to screen out of the market potential borrowers with adverse information before a loan is arranged and then ameliorate moral hazard problems through ongoing monitoring of borrowers after the loan closes.

Project finance is also an economically significant and growing financial market, worthy of empirical analysis in its own right. Esty and Sesia (2007) reports that a record $328 billion in PF funding was arranged in 2006, up from a cyclical low of $165 billion in 2003 and substantially above the previous record $217 billion in 2001. PF has also been gaining global financing market share over the past two decades, especially as a vehicle for channeling development capital to emerging markets. Over 60 percent of the value (and 68 percent of number) of loans in our sample are arranged for borrowers located outside of North America and Western Europe, with over 40 percent of the total being arranged for Asian projects. In spite of its importance, only a few theoretical [(Shah and Thakor (1987), Berkovitch and Kim (1990), John and John (1991), Chemmanur and John (1996), Laux (2001)], descriptive [Kensinger and Martin (1988), Smith and Walter (1990), Brealey, Cooper, and Habib (1996), Kleimeier and Megginson (2000), Blanc-Brude and Strange (2007), Esty (2001, 2002, 2007)] and empirical PF studies [Esty and Megginson (2003), Sorge (2004)] have thus far been published.

Though creation of a vehicle company is the seminal step in all project financings, the work of the syndicated loan lead arranging bank is arguably the most crucial. The bank selected by the project sponsors must perform three vital and difficult tasks. First, it must conduct due diligence on the vehicle company and the project itself to ensure that all potential adverse inside information is revealed before loan syndication. This is especially difficult because the project has no prior operating history and need not be concerned about reputational effects—it will arrange but a single financing before expiring—and

[1] In recent years, several project finance bond issues have been sold, as described in Dailami and Hauswald (2007). These have proven to be highly cyclical, however, and even in the peak years account for a small minority of PF debt financings. For example, Thomson One Banker reports that project finance loans totaled US$120 billion during 2005, compared to US$26.7 billion in project bonds.

thus has great incentive to hide adverse information about the project and the sponsor's own motives. Second, the lead arranger must attract a sufficient number and diversity of participating banks to fund the PF loan at a price that is both low enough to ensure project solvency and high enough to adequately compensate the banks for the (known and unknown) risks they are taking by extending credit.[2] The lead arranger must also design an optimal loan syndicate that will deter strategic defaults [Chowdry (1991), Esty and Megginson (2003)] but allow for efficient renegotiation in the event of liquidity defaults.[3] Finally, the lead arranger must spearhead monitoring of the borrower after the loan closes and discourage the sponsor (or the project's host government) from expropriating project cash flows. This is especially difficult in PF, since many such projects have extremely high up-front costs but then generate large free cash flow streams after the project is completed [Bolton and Scharfstein (1996), Esty and Megginson (2003)]. Furthermore, the lenders, represented by the lead arranger, typically have little or no power to seize assets or shut down project operations in host countries, so deterrence must be expressed through some other mechanism [Repullo and Suarez (1998)]. In spite of these complexities, Kleimeier and Megginson (2000) show that PF loans have lower spreads than many other types of syndicated loans, despite being riskier non-recourse credits with longer maturities—suggesting that the unique contractual features of project finance and the underlying risk management process in fact reduce default risk.

We examine lead arranger certification in PF loan syndications in four ways. First, we test whether certification by prestigious arrangers will allow loans to be arranged for a lower cost than would be required for less prestigious arrangers. Second, we evaluate how prestigious arrangers are compensated for their services and for use of their reputational capital. Third, we examine who pays—the borrower who signals its better quality by paying higher fees or the banks invited to join the syndicate—for any certification identified. Fourth, we make a methodological contribution to the certification literature by constructing two lead arranger "prestige" variables based on prior years' market share hitherto unexamined in the PF literature. Though similar measures have been used in studies of syndicated loan [Sufi (2007)] and securities markets [Megginson and Weiss (1991) and Carter, Dark, and Singh (1998)], this will be the first such application to PF lending. Our results strongly and robustly indicate that, *ceteris paribus*, spreads are significantly lower for loan packages arranged by prestigious banks. Prestigious

[2] In the general syndication phase of a PF funding, the mandated lead arrangers sell a part of the arranged loan to other participant banks. The certification of the borrower quality in this phase should emerge as the result of the private information available to the arrangers and the extensive advisory work played in the initial underwriting phase.

[3] Other studies examining the impact that syndicate structure can have on loan pricing or the valuation of securities issues include Simons (1993), Dennis and Mullineaux (2000), Pichler and Wilhelm (2001), Casolaro, Focarelli, and Pozzolo (2007), Lee and Mullieaux (2004), Altunbas, Gadanecz, Kara, and Lucchetta (2007), Sufi (2007), and Ball, Bushman, and Vasvari (2007). All of these studies find that syndicate structures are selected deliberately to solve specific agency or contracting problems.

arrangers charge overall fees that are no higher than those charged by arranging banks with lower market shares—and there is limited evidence that overall fees are actually lower for top banks—so prestigious banks can arrange syndicated PF loans at economically and statistically significantly lower cost than less prestigious arrangers. Finally, we find that banks participating in syndicates arranged by prestigious banks, rather than the project sponsors, actually pay for prestigious-arranger certification. They do so by accepting lower non-arranger upfront fees in loan syndicates organized by more prestigious arrangers.

Our paper is organized as follows. Section 2 surveys the relevant literature, beginning with and focusing on theoretical and empirical applications of certification to security and syndicated loan markets. Section 3 presents our sample selection strategy, characterizes the final sample of PF loans, and describes the methodology we employ to test for certification. Section 4 presents our empirical tests of the valuable certification hypothesis' predictions regarding the impact of lead arranger prestige on loan spreads. Section 5 empirically examines the structure of upfront fees (overall, arranger, and non-arranger fees) and in this way tests the predictions of the direct compensation hypothesis. Section 6 presents a variety of robustness tests for the validity of our loan spread and fee results and verifies our basic findings after adjusting for endogeneity in the choice of projects by prestigious lead arrangers, while section 7 concludes.

2. How should certification be expressed in project finance debt contracts?

What bundle of services are project sponsors seeking when they commission top-tier banks to arrange the syndicated loan package for their project? First and foremost, sponsors seek a bank that can successfully syndicate complex PF loans, and this requires both distribution capability and certification of the project's quality and risk. A bank's distribution abilities are highly correlated with its size and the geographic sweep of its network, and with its ability to attract local banks to the loan syndicate. This should be particularly important for PF loans, since local banks bring not only local knowledge and ties, but also serve as a political bond to help ensure that a host government will not interfere in a project's evolution [Nini (2004), Mian (2006)]. The arranging bank must also have access to specialist engineering, legal, financial, logistical, market assessment, and risk assessment skills that will allow the bank to effectively evaluate a project's true potential and to ensure that all relevant adverse information is disclosed. Sponsors presumably also seek prestigious arranging banks that can certify a project's value and risk to potential syndicate members. This involves an arranging bank finding and then disclosing adverse inside information that the sponsors might have. The sponsors might also seek an arranger able to structure a loan syndicate that maximizes the ability of the creditors to monitor them after the project is

completed, and to intervene if the sponsors or host government try to expropriate project cash flows.[4] This bonding action makes sense because we have known since Jensen and Meckling (1976) that entrepreneurs—and by extension borrowers—will capture the benefits of successful bonding through higher firm valuations.

If certification can thus reduce the cost of arranging a particular financial transaction, then "certified" projects will have lower overall financing costs than will projects arranged by less prestigious banks. Alternatively, certification might allow a project to be implemented/funded that would not be funded without aid from a prestigious agent. Therefore, in an environment characterized by asymmetric information between project sponsors and capital providers, *certification will create economic value by minimizing search and information costs*. Absent certification of project value by a trusted intermediary, each potential lender will feel compelled to independently analyze the project's value and cash flows. If project size or a desire for risk diversification prevents a single lender from financing the entire project, this need for individual project assessment will mean duplication of search efforts by two creditors, tripling of effort by three, quadrupling by four, etc. At the very least, this multiplication of effort will raise the cost of arranging project funding, since a loan must be priced to cover all banks' search costs; at worst, it will cause the project to fail as search costs become excessive.

We create a two-part test to see whether certification works and how prestigious arranging banks are compensated for providing this service. As a basis for this test, we need to establish a measure of prestige. Similar to Megginson and Weiss (1991), Carter, Dark, and Singh (1998) or Sufi (2007), we use an arranger's market share in the PF market in the years prior to the arrangement of the PF loan as an indicator of the arranger's prestige. Using this prestige proxy, we test two hypotheses. First, the **valuable certification hypothesis** (VCH) predicts that certification by prestigious arrangers will create economic value by allowing the loan to be arranged for a lower cost than would be required for a less prestigious arranger. Specifically, once we control for other factors, loans arranged by prestigious banks should have lower spreads charged over benchmark lending rates such as LIBOR or Euribor. If we find that loan spreads are no different for loans arranged by banks with high versus low market shares, this will indicate either that certification does not occur in PF lending or that it occurs but the market is so competitive that no premiums are created. A finding that prestigious banks charge higher loan spreads than do banks with low arranger market share would suggest that prestigious banks enjoy sufficient market power that they can charge borrowers a premium for their loan arranging services—just as Fang (2005) shows that Bulge

[4] Though not the focus of our study, we can speculate how arranging banks and project sponsors get together. Since, by definition, there is no prior relationship between any bank and a new project's sponsors, the most likely answer is that prestigious arrangers and sponsors of high-value projects find each other through a double sorting process described for investment banks and issuing firms in Fernando, Gatchev, and Spindt (2005), and for venture capitalists and private companies by Sørensen (2007).

Bracket investment banks do when underwriting IPOs. This is in fact what McCahery and Schweinbacher (2006) and Cook, Schellhorn, and Pellman (2003) document in their studies of lead arranger certification in the general syndicated loan market.[5]

As the second part of our test we ask *how and by whom certifying agents (bank arrangers) are compensated for providing certification for PF projects.* We propose the **direct compensation hypothesis** (DCH) that asserts that certifying agents will be compensated by direct payment. In our PF loan sample, this most likely should express itself as higher arranging fees being paid to top-tier PF loan arrangers than to less-prestigious arrangers in otherwise similar projects. After adjusting for all other relevant factors, "certified projects" should have lower overall funding costs than "non-certified" projects, but the fees for the arranger should be higher, indicating that the arranger fee is where surplus is captured by the prestigious lead arranger. In contrast, it might be possible that certifying agents will be compensated principally with a greater market share in the overall PF loan market – however this aspect is beyond the scope of our study. If certification creates economic value, yet top banks are not paid directly, then they must capture the return on their reputational capital by capturing a higher share of all profitable loans. This hypothesis is most similar to Tufano (1989), who shows that "innovators" (investment banks that develop new security products) take their compensation in the form of higher market share rather than in higher fees or costs for the first issues of the newly created securities. Mimicking banks actually charge higher fees for follow-on products. Casolaro, Focarelli, and Pozzolo (2003) find support for a similar effect in the global syndicated loan market and Bharath, Dahiya, Saunders, and Srinivasan (2007) document a similar phenomenon in the U.S. syndicated loan market.

3. Data and Methodology

We employ a merged sample of PF syndicated loans signed between January 1, 1991 and December 31, 2005 which is drawn from the Reuters/Loan Pricing Corporation's *Dealscan* database and the *ProjectWare* database. While *Dealscan* has been employed in many empirical syndicated loan studies, the only study employing *ProjectWare* we know of is Corielli, Gatti, and Steffanoni (2006).[6] Ours is the first study to employ both databases, and we do this because each provides valuable information the other lacks. While *Dealscan* provides very detailed information about the syndicate structure and the pricing of the loans, both in terms of spread and fees, *ProjectWare* has particularly rich data regarding the financial

[5] McCahery and Schweinbacher (2006) find that prestigious arrangers receive higher loan spreads and retain larger fractions of loans in the syndicate, while Cook, Schellhorn, and Pellman (2003) find that high reputation lenders can charge higher rates, averaging 86 basis points for their full sample of loans.

[6] Examples of studies using *Dealscan* include Althunbaş and Gadanecz (2004), Carey, Post and Sharpe (1998),

structure of the projects, especially project debt-to-equity ratios, and provides information about the key contracts that the PF vehicle company sets up to design, build and manage a venture.

A PF loan typically consists of several tranches that fund the same project but often have different syndicates. Therefore, we focus on the loan tranche as our basic unit of observation. We collect detailed information about each tranche, including its size, currency, spread, upfront fees, maturity, signing date, financial and operational risk (existence of guarantees or ratings, the existence of general and financial covenants), number and identity of bank arrangers and syndicate members, and syndicate structure. We also collect project-related variables, including measures of institutional risk (country risk and creditor rights' protection in the project's host country), industry risk, and vehicle company structure—including equity contributions and, where available, project covenants and sponsor information. All our proxies, except those describing the project's home country and the vehicle company structure, are obtained from *Dealscan*. Based on the borrower's name, host country, sponsor's name, and the year of loan signing, we identify those projects that are also reported in the *ProjectWare* database and add the vehicle company structure proxies to each matched loan tranche observation in our sample. (Our variables are explained in detail in Table A-1 of the appendix.) Overall, we obtain a sample of 4,122 loan tranches from *Dealscan*, of which 472 can be matched with *ProjectWare*.

3.1. Loan and project characteristics

Table 1 presents summary information about our sample. Panel A presents summaries of the loans' characteristics, while Panel B describes the geographic distribution of the loans. The values are reassuringly similar to those reported in other empirical PF loan studies, including Kleimeier and Megginson (2000), Esty and Megginson (2003), Sorge and Gadanecz (2008), Corielli, Gatti, and Steffanoni (2006), and Hainz and Kleimeier (2006). The average (median) loan size is $188.98 million ($79.45 million), in 2005 US dollars, and the mean spread is 169.2 basis points (bp) (140.0 bp) above the base lending rate, which is typically LIBOR. There is great variability in both size and spread, with loan size ranging between $380,000 and $21.59 billion, and spreads ranging from -295 bp (a *discount* to LIBOR) to 1,400 bp (a 14 percentage point premium). Fees are reported in three categories: (1) total upfront fees, which are the total amount of fees the borrower pays to the syndicate for organizing the loan facilities, (2) arranger upfront fees, the fraction of the total fees retained by the lead arranging bank(s), and (3) non-arranger upfront fees, which are distributed to participating banks in the loan syndicate. The average (median) total upfront fee is 69 bp (60 bp), arranger upfront fee is on average 19.8 bp (0 bp), and the mean non-arranger upfront fee is 59.2 bp (50.0 bp). There are, on average, 7.5 banks (5 banks)

Hainz and Kleimeier (2006), Ivashina (2005), Qian and Strahan (2007), Sufi (2007), and Bae and Goyal (2008).

participating in each loan syndicate, while there are 2.1 lead arrangers (median of 1) organizing the average loan, so the average size of a PF loan syndicate is 10.0 banks (median of six banks).

****** Insert Table 1 about here ******

The mean (median) loan maturity is 104.7 months (84 months) and the mean and median year of loan signing is 2000. These maturities are similar to those presented in Kleimeier and Megginson (2000), who document that PF loan maturities are much longer than those on other syndicated loans arranged for U.S. or international borrowers, despite having higher average risk. Ratings for the 236 loans with S&P ratings show that PF loans are indeed risky credits. Our ratings proxy, which ranges from 1 for AAA ratings to 28 for D ratings, has an average value of 12.3 (median of 13), corresponding to a rating of about BB- or slightly below investment grade. 18 percent of all tranches are supported by third party guarantees.

47 percent of the loans have currency risk—the currency of the project's cash flow differs from the currency of debt repayment—while 16 percent of loans have financial covenants and between 11 and 33 percent have risk management contracts. Due to serious non-reporting biases, these values are almost certainly low estimates of the actual frequency of covenant and risk management covenant usage.

The last section of Panel A presents summary data about the projects for which these loans are extended. The typical PF loan is booked in a country with moderate risk, as measured by the *Euromoney* Country Risk Index, which assigns low-risk developed countries index values of near 100 and assigns extremely high-risk countries values close to zero. Loans are extended to borrowers headquartered in countries with an average (median) country risk value of 76.53 (80.65). In addition to country risk, which mainly reflects political risk and economic performance of a country, we also measure the quality of the creditor rights in the country in which the project is located. An average project is located in a country with a LaPorta, López-de-Silanes, Shleifer, and Vishny (1998) creditor rights score of 2, reflecting only moderate creditor rights. These findings are in line with Subramaniam, Tung, and Wang (2007) and Hainz and Kleimeier (2006) who argue that PF is preferable over on-balance sheet syndicated loans when political and regulatory risks are relatively high and economic performance of the host country is relatively weak.[7] In such circumstances, the limited recourse nature of PF provides incentives to lenders, especially multilateral development banks like the World Bank or national development banks, to actively manage the political risk of the project.

As shown in most other PF studies, the typical project is characterized by higher leverage than observed for other corporate borrowers. On average (median), the debt-to-equity ratio of PF vehicle companies is 3.41 (2.59) reflecting a 77 percent (72 percent) debt-to-total capital ratio. As described by

[7] Many recent studies—especially Bae and Goyal (2008), Djankov, McLeish, and Shleifer (2007), Qian and Strahan (2007), and Subramanian, Tung, and Wang (2007)—document the first order importance of strong creditor rights protection both for the amount and cost of credit granted in a given country.

Esty (2002) and others, PF involves heavily leveraging up capital-intensive projects that, once built, generate large amounts of free cash flow. The commitment to payout this cash flow as debt service minimizes the temptation for sponsors and/or host country governments to pre-empt this cash flow for themselves. PF loans are subject to a wide set of loan covenants, and are secured loans collateralized by all project assets.[8]

3.2. Geographic distribution of project finance loans

Panel B of Table 1 shows that U.S. borrowers receive the single largest number (700) and value ($136.6 billion) of PF loans, but over 60 percent of our sample loans are extended to borrowers located outside of the developed economies of North America and Western Europe. Almost half (2,036 of 4,122, or 49.4 percent) of the total number and 41.3 percent ($317.4 billion of $768.6 billion) of the total value of all loans are extended to Asian borrowers, with projects in Taiwan, Australia, China, and Indonesia all receiving between 242 and 262 loans, worth $32.0 billion to $55.9 billion. Western European borrowers are the third largest recipients of PF loans (588 loans, worth $130.4 billion), after Asia and North America, with the United Kingdom and Spain receiving 193 and 189 loans, worth $51.2 billion and $28.3 billion, respectively. In terms of number of loans received, Eastern Europe (256 loans, worth $52.5 billion) and Latin America (227 loans, worth $42.1 billion) rank fourth and fifth, respectively, but the Middle East and Turkey region ranks fourth in terms of total loan value (207 loans, worth $68.9 billion). The reason for this is the extremely large average size of loans arranged for the two to three dozen petroleum-related projects in each of the Persian Gulf countries of Saudi Arabia (average of $666.0 million), Qatar ($483.9 million), and the United Arab Emirates ($546.4 million). A mere 54 loans, worth $8.7 billion, are extended to projects in Africa.

3.3. Measuring arranging bank prestige

We measure arranging bank prestige based on market shares in the market for syndicated project finance loans. However, since bank syndicates often involve more than one arranging bank, we must define first how we compute arranger market share. For tranches with a single lead arranger we calculate the lead arranger's market share in the PF loan market as the $-volume of arranged PF loans in percent of the total $-volume of PF loans arranged in that year. For tranches with multiple lead arrangers, we

[8] In a bank lending context, Rajan and Winton (1995) model covenants and collateral as contractual devices that increase a lender's incentive to monitor, and empirical support for these predictions are presented in Dichev and Skinner (2002), Vasvari (2006), and Jiménez, Salas, and Saurina (2007). PF loans also have features of both transactions loans and relationship loans, as described in Boot and Thakor (2000). The need for ongoing relationships between borrower and creditor/monitor is a key reason why PF loans are overwhelmingly privately placed.

average the market share of each bank. We compute market shares over 1, 3, and 5 year measurement periods *prior* to the signing date of each loan, thus ensuring against any look ahead bias in our prestige measure. These values are presented in Panel A of Table 1. Lead arrangers have a 1-year market share of 1.47 percent. These values fall steadily over our measurement periods, to 1.40 percent for the prior five years. Median share values are roughly two-thirds of the mean market shares, but show the same declining pattern over increasing measurement periods. In our regression analyses, we use the lead arranger market share in the three years prior to the signing of the loan as our main proxy and conduct robustness checks using the 1- and 5-year proxies.

We also measure bank prestige by using an alternative dummy variable which is coded as 1 for prestigious lead arrangers and 0 for non-prestigious lead arrangers. Prestigious arrangers are banks that have a market share which falls into the top-25% of the distribution of the respective market share proxy. Note that we establish this dummy for the full sample of 4,122 PF loan tranches for which we have lead arranger information. Thus, our high-prestige dummy does not vary across samples although it might be the case that a given lead arranger is considered prestigious based on one market share proxy but not based on the other. As an illustration consider a lead arranger who has a very high market share in just one year but a very low market share in the other years. Such a lead arranger might be considered prestigious based on 1-year prior market shares but not based on 3- or 5-year prior market shares.[9]

Table 2 summarizes our lead arranger market share proxies by presenting aggregated source data for those banks that most frequently serve as lead arrangers for PF loans. Over the entire 1987-2005 estimation period, more than 1,000 banks served as lead arrangers for project finance loans. However, Table 2 only reports the aggregate loan volumes for the top 22 leading arrangers. We report market share data by bank group, so PF loans arranged by the headquarters office, an international branch, or a subsidiary of the same bank group are summed and treated as being arranged by that bank group. We also take mergers between banks into account, thus reporting the position of the bank overall as well as pre- and post-merger banks separately.[10] All of the bank groups in Table 2 served as lead arrangers for at least $25 billion worth of loans (in real 2005$), and the median bank on this list arranged 189 loans worth $57 billion over this fifteen-year period. Table 2 also presents annual lead arranger market shares for 1987-2005. This is the basic measure on which our arranger prestige proxies are based. In particular, prior-year

[9] Although in the next sections we present results based on the prior three years market share, we also check the robustness of the coefficients using prior 1 and 5 years market share data. In addition to the average market share, we also calculate the total market share of all lead arrangers in one syndicate– again based on 1, 3 or 5 years of data. The coefficient for lead arranger market share is robust i.e. regarding its impact on spreads and arranger upfront fees. Similar to our findings in Table 6 in the paper, however, the effects of lead arranger market share on non-arranger fees and total fees are, however, insignificant for some proxies. Results are available upon request.

[10] A list of bank groups and mergers is available upon request.

market shares are specific to the year of loan signing so that bank mergers can properly be taken into account [Sapienza (2002)]. Consider, for example, the merger between Deutsche Bank and Bankers Trust that took place in 1999. For a PF loan arranged by Deutsche Bank and signed before the merger, only the prior year's market share of Deutsche Bank will be considered. For a similar loan signed in 2000, however, the prior year's market shares of both banks should be added. Market shares of individual banks vary widely from year to year, so a multi-year rather than a single-year market share proxy is preferable for this study.[11] We consider our computation and use of this measure to be a significant empirical contribution.

****** Insert Table 2 about here ******

Closer examination of the lead arranger share data presented in Table 2 reveals two important details about the global project finance loan market. First, leadership in loan underwriting is remarkably *non-concentrated* and contestable, especially in the early years of our sample. This contrasts with the highly concentrated nature of corporate bond underwriting, as documented in Fang (2005). The final row of Table 2 presents a summation of the market shares of the 22 banks listed, and in 10 of 19 years accounts for 56 percent or less of total volume of PF loan tranches arranged that year. Furthermore, it is rare for any single arranging bank to achieve as much as a 5 percent market share for more than four consecutive years. This relative contestability contrasts sharply with the pattern observed in lead underwriting market shares for IPOs, seasoned equity offerings, and public debt offerings, where the same ten banks account for two-thirds or more of global security underwritings year after year. On the other hand, Table 2 also shows that some banks—such as Credit Agricole Indosuez, BNP Paribas, Citigroup, or JP Morgan Chase—can and do achieve prominence as lead arrangers, and that this prominence tends to endure long enough to be economically relevant. In such a contestable market, the competition to become recognized as a prestigious lead arranger will likely be intense, as will be the payoff from achieving such prominence.

[11] As a robustness check we also see if using *Project Finance International (PFI)* annual league table rankings of lead arrangers yields qualitatively different results, and find this generally does not. To perform this test, we restrict ourselves to the top-10 lead arrangers in *PFI*'s league table. Instead of a market share based proxy, we define our continuous proxy as the number of lead arrangers who are among the top-10 lead arrangers in *PFI*'s league table in the 1- or 3-years prior to loan signing. Additionally, a high-prestige dummy variable reflects the listing of at least one of the lead arrangers among the top-10 lead arrangers in *PFI*'s league table. Consistent with the findings reported in the paper, we find that prestigious lead arrangers are associated with loans which have lower spreads, higher arranger fees, equal or lower non-arranger fees and equal total fees. Only the proxy based on a 3-year dummy is somewhat less robust. Looking at the endogeneity-robust results of Table 6, we find that total fees are generally unchanged though spreads are lower, arranger fees are higher and non-arranger fees are lower when prestigious lead arrangers are involved. Detailed results are available upon request.

3.4. Methodology for estimating loan spread and fees

To formally test whether valuable certification occurs in the PF loan market—and to determine who pays for it—we must specify a model for loan spreads and fees. We draw on loan pricing studies and the methodologies presented in, among others, Booth (1992), Dennis, Nandy, and Sharpe (2000), Altunbaş and Gadanecz (2004), Carey and Nini (2007), Nini (2004), Vasavari (2006), and Gupta, Singh, and Zebedee (2006). First, we separate our observations into different quartiles based on the lead arranger market share and assess, by means of a Wilcoxon test, whether the average spread, total upfront fees, arranger and non-arranger upfront fees of project finance loans with high lead arranger market share are different from PF loans with low lead arranger market share. Second, we conduct regression analyses to test our hypotheses using spread and fees as our dependent variables. For each of our four loan features—spread, total upfront fee, arranger upfront fee, and non-arranger upfront fee—we estimate a single regression, which includes (besides the lead arranger proxy discussed earlier in Section 3.3) only proxies that control for project risk:

$$\textit{loan feature} = \alpha + \beta\,\textit{lead arranger prestige} + \Sigma_i \rho_i\ \textit{institutional risk proxies} + \Sigma_i \varphi_i\,\textit{financial risk proxies} + \Sigma_i \gamma_i\,\textit{operational risk dummies} + \Sigma_i \delta_i\,\textit{industry risk dummies} + \varepsilon \qquad \text{(Eq. 1)}$$

First, we utilize two institutional risk proxies: country risk and creditor rights. The country risk measure is based on the *Euromone*y Country Risk Index and combines political, economic and financial risk factors. Additionally we measure the creditor rights in the country in which the project is located based on Djankov, McLeish, and Shleifer (2007). For both proxies, a higher value indicates better institutional settings, lower country risk or better creditor rights.

Second, financial risk proxies include six factors: (1) the maturity of the loan; (2) the size of the loan [in logs of real 2005$]; and (3) the leverage ratio of the project. Additionally, three dummies measure the existence of (4) a repayment guarantee; (5) a debt rating; and (6) currency risk—equal to one when the loan currency differs from the currency in the project's country and zero otherwise. The predicted impacts of these variables are ambiguous. On the one hand, these proxies can be interpreted as direct measures of credit risk: A PF loan with a guarantee or without currency risk is less risky while a rating may improve the transparency of the project and thus the loan. On the other hand, these proxies can be interpreted as indirect signals of risk: Only the riskiest loans might require a guarantee to reduce credit risk or a rating to certify the credit quality of the project while only the safest loans are able to support foreign currency debt.

Third, we consider five operational risk dummies. These measure (1) the existence of a secured loan; (2) a loan with general or (3) a financial covenant; (4) projects with operational risk management

contracts such as an off-take or a supply contract; and (5) projects in which the sponsors act as contractual counterparties of the vehicle company--as suppliers, customers, or contractors of the project. As noted for the financial risk proxies above, these dummies can indicate an *ex post* risk reduction or can be seen as an *ex ante* signal of higher risk, as modeled in Corielli, Gatti, and Steffanoni (2006). Finally, we employ industry dummies for the banks and financial services; corporate; government; media and telecommunication; utility; and unknown sector to assess whether credit risks vary across industries.

Using these proxies, we estimate Equation (1) with OLS for the first characteristic, loan spread. The remaining loan features—overall upfront fee, arranger upfront fees, non-arranger upfront fees—are censored variables, which can only take values at or above zero, and we therefore apply a maximum likelihood estimation of a Tobit model for Equation (1). Tranches are issued in packages so that frequently multiple tranches make up one PF deal. The 4,122 loan tranches in our sample are associated with 2,636 specific PF deals, indicating that on average there are 1.56 tranches for each deal. Thus, we can expect that the standard errors for tranches belonging to the same deal are correlated with each other. We take this into account by estimating standard errors clustered by deal for both the OLS and Tobit regressions.

3.5. Univariate tests for spreads, size, leverage, and fees

As noted above, we begin our analysis by performing a simple distributional analysis of the main sample of PF loans. In Table 3, we sort loan observations into quartiles based on lead arranger market shares to observe the spread and total upfront, arranger upfront and non-arranger upfront fees of PF loans with more versus less prestigious arrangers (at different levels of market share).

The VCH predicts that PF loans arranged by more prestigious arrangers—those with higher market shares—will have lower spreads. The univariate findings in Table 3 strongly support the VCH. Mean and median spreads decrease significantly as arranger share increases. Note that those lead arrangers falling into the very high market share quartile are given a value of 1 for our high-prestige dummy presented in Section 3.3. As the difference in spread between the moderately high and very high lead arranger quartile in Table 3 is not significant, our high-prestige dummy might perform less well in the regressions than our market share based proxy of prestige.

****** Insert Table 3 about here ******

Table 3 also presents evidence regarding how and by whom prestigious arranging banks are compensated for providing certification. The DCH predicts that top arranging banks will be paid higher direct fees and the results generally support it, in that mean arranger upfront fees increase significantly and monotonically with arranger market share. Mean and median non-arranger upfront fees first decline but then increase again with arranger prestige. Interestingly, the median arranger upfront fee is zero for all

arranger share quartiles, suggesting that separate fees are paid to arrangers only in a minority of loans—but when these fees are paid, prestigious arrangers receive disproportionate shares.[12] There is no clear univariate association between total upfront fees and lead arranger prestige. While at first overall fees increase with arranger prestige, these begin to decrease once the lead arranger market share reaches moderate levels. Furthermore, not all of the differences between lead arranger market share quartiles are significant. Overall, the data suggests that prestigious lead arrangers are able to organize bank syndicates at lower cost than can less prestigious arrangers but leading banks are also able to keep a higher portion of the total fees paid by asserting their bargaining power toward other members of the loan syndicate.[13] These simple sample analyses, however, do not allow us to control for project risks. We therefore proceed with regression analysis where we can take these risks directly into account.

4. Empirical tests of the valuable certification hypothesis

Table 4 reports loan spread regression results for our two lead arranger prestige proxies and for different combinations of risk proxies. Regressions (1) and (2) employ only those risk proxies obtained from *Dealscan* as these are available for a large number of tranches. In regressions (3) to (6) we separately add our *Projectware*-based proxies for leverage or operational risk. When using only those observations that can be matched between *Dealscan* and *Projectware*, our sample size drops to less than 300 observations and the *Projectware*-based proxies are not significant. For regressions (7) and (8) we therefore convert the *Projectware* operational risk dummies so that missing values are coded as zero.[14] Though generally insignificant in these spread regressions, these adjusted proxies are significant in some of the later fee regressions, especially in those smaller samples where the potential bias introduced by the re-coding of missing values is less pronounced. In conclusion, our preferred specifications are those of regressions (7) and (8).

****** Insert Table 4 about here ******

[12] This interpretation must, however, be tempered somewhat by the fact that arranger fees are reported far less consistently than are overall upfront fees.

[13] To illustrate, let's compare the loans with very low versus very high prestige arrangers. Whereas on average, less prestigious arrangers are associated with loans having a spread of 211.76 bp, a total upfront fee of 79.15 bp, arranger fee of 10.17 bp and a non-arranger fee of 71.74 bp, highly prestigious arrangers are associated with loans with a spread of 154.02 bp, a total upfront fee of 62.81 bp, arranger fee of 27.36 and a non-arranger fee of 48.13.

[14] This approach seems justified as our results indicate that the sign—but not always the significance—of the coefficients remains the same in the reduced versus full sample regressions. Thus while the coding of missing values as zero reduces the explanatory power of these dummies, it does not bias the results.

Regressions (7) and (8) in Table 4 show that spread is negatively related to lead arranger market share after all other factors are accounted for, supporting the VCH. Each one percentage point increase in lead arranger market share is associated with a reduction in spreads of about 6 bp using average arranger share. Since the average (median) spread on all sample loans is 169.2 bp (140.0 bp), and the 3-year average market share of lead arrangers varies between 0 and 9.24 percent for loans in our sample, these estimated coefficients reflect an economically and statistically significant relationship between arranger prestige and loan cost. This is however not true when we use the high-prestige dummy as our lead arranger prestige proxy. The negative but insignificant coefficient might be driven by the pattern documented in Table 3 where spreads are only significantly higher for the very low and moderately low market share quartiles. Thus, it appears that – at least for our PF sample – a dummy as commonly used in studies of reputation effects is less informative than our new market share based proxy.

Examining the coefficients of the different risk proxies reveals exactly how these project features interact with spreads. Regarding the impact of institutional characteristics, the significant negative coefficient on country risk shows that spreads are lower in low-risk countries, as expected. Each one point increase in the country risk rating—corresponding to reduced political and economic risk—is associated with a reduction in spreads of 2.5 bp. Similarly, an improvement in creditor rights by 1 category (from a level of 0 to 1, 1 to 2, etc.) leads to a reduction in spread of almost 8 bps. Thus, both country-related proxies point into the same direction: Lower spreads for projects in safer countries.

Regarding our five financial risk proxies, note first that spreads are significantly negatively related to currency risk, so loans with such risk have spreads that are about 37 bp *lower* than those without, depending upon the specific regression examined. This finding is in line with Kleimeier and Megginson (2000) and Corielli, Gatti, and Steffanoni (2006). The most logical explanation for this finding is that only the most creditworthy projects with currency risk will be funded, so this actually proxies for underlying project value rather than a mismatch between project and loan cash flows, *per se*. Many loan pricing studies (including ours—see below) document a similarly positive coefficient for a dummy variable proxying the use of collateral in a loan, and have explained this result in the same way. Second, we find that there is no statistically significant relationship between spread and loan maturity. Third, spreads are negatively related to tranche size. This result, combined with evidence coming from Table 5 indicates that larger loans are cheaper in terms of spread *but* that they also pay higher total and arranger fees. This is additional evidence of the existence of a trade-off between spread and fees faced by the borrower. Fourth, guaranteed loans have spreads that are about 22 bp lower on average than those of non-guaranteed tranches. In contrast to the first two financial risk proxies, the significantly negative guarantee coefficient indicates that—despite a possibly higher *ex ante* risk of the loan that motivated the use of a guarantee—the existence of such a guarantee actually lowers the *ex-post* risk so that the loan can

be priced at a lower spread. Our fifth and final financial risk proxy indicates that spreads are 24 to 26 bp higher when the project's debt is rated. Again, this might probably signals higher *ex ante* project risk and indicates that only the riskiest projects need ratings or indicate the existence of project bonds for which investors require a rating.

Regarding operational risk, we find that loans with secured debt, general covenants and operational contracts have higher spreads. Secured loan tranches or tranches in projects with operational contracts are about 17 bp more expensive. Loans with general covenants, however, are dramatically more expensive—between 67 and 69 bp dearer—than loans without general covenants. As discussed above for financial risks, we believe that these three operational hedges have an impact similar to that found for collateral in other studies: they allow *ex ante* riskier projects to be funded. Given the extensive contractual structure already included in the project contracts, the fact that such operational risk hedges need to be included in the loan contract *in addition to the network of project contracts itself* clearly signals high *ex ante* project risk. Finally, we document that loan spreads are not related to several industry proxies, in line with the results of Corielli, Gatti, and Steffanoni (2006). This indicates that country, financial, and operational risk proxies already adequately measure risk so that no industry-specific risk remains priced.

5. Empirical tests of the direct compensation hypothesis

We now examine how and by which parties arranging banks are compensated for providing certification. We test the DCH by empirically examining the determinants of fees paid to arranging and non-arranging banks by project sponsors.

5.1. Arranger upfront fee estimations

The DCH makes the straightforward prediction that prestigious arrangers will be "paid" with higher fees—even if the overall cost of the loan is reduced by certification. The regression estimation results, presented in Table 5, clearly support this hypothesis.[15] The coefficient on lead arranger market share is economically and statistically significant in all estimations of arranger fee levels. Each one percentage point increase in arranger market share increases the arranging bank's upfront fee by 7.5 to 7.6 bps. Examining our arranger prestige dummy reveals that a loan arranged by a prestigious lead arranger requires the payment of 21 to 22.3 bp higher arranger fees than having the loan arranged by a non-prestigious lead arranger.

[15] We replicate the variable selection in the same ways we did for Table 4. The coefficients of leverage and the operational-contract and sponsor-as-counterparty dummies are insignificant in the regressions corresponding to (3) to (6) in Table 4, and we thus do not report them.

****** Insert Table 5 about here ******.

The level of arranging bank fees is significantly related to several other variables, besides lead arranger market share. As expected, arranger upfront fees decrease with declining country risk; every one percentage point increase in the risk proxy (corresponding to lower political and economic risk) reduces arranger fees by about 1 bp. Arranger fees are also significantly positively related to loan size (as discussed in the previous section) and with projects that are rated. Each one percent increase in the tranche's size increases arranger fees by about 23 bp, while the presence of a rating increases fees by 92 to 93 bp, depending on the regression specification. Regarding operational risks, arranger fees are higher for secured loans and loans with financial covenants and lower for loans to projects with operational contracts. There are possible explanations for these two coefficients. Regarding the presence of a security for lenders, a guarantee signals an *ex-ante* riskier project, requiring a credit enhancement to be financed. Prestigious arrangers also find it difficult to structure the syndicate and consequently require higher fees. The same argument holds true for financial covenants. On the other hand, the existence of operational contracts reduces *ex-post* risks and this is reflected in lower fees.

5.2. Non-arranger and total upfront fee estimations

Having documented that certification creates value, and that prestigious arranging banks are "paid" for providing this certification in the form of higher lead arranger fees, we now ask which party pays—the project sponsors, in the form of higher total fees, or non-arranging banks that participate in the loan syndicate assembled by a prestigious arranger. The results in Table 5 clearly show that participating banks pay for certification in the form of lower non-arranger upfront fees, and that sponsors pay *lower* total upfront fees for loans syndicated by prestigious arranging banks. Each one percentage point increase in average lead arranger market share is associated with a highly significant decline in non-arranger upfront fees of almost 4 bp, whereas the overall amount of total upfront fees paid by project sponsors to the banks in the syndicate declines by 3.85 to 3.92 bps. Similarly, a loan arranged by a prestigious bank is associated with a decline in non-arranger upfront fees of about 16 bps and a decline of total upfront fees of about 10 bps. Thus, contracting with a highly prestigious bank to syndicate a PF loan creates value by reducing the amount of compensation (fees) other banks will get for participating in the loan syndicate and by reducing the total amount of fees the project sponsors must pay to successfully obtain loan funding, as well as by reducing the spread charged on these loans. These results are similar to the findings of Roten and Mullineaux (2002), Schenone (2004), Narayanan, Rangan, and Rangan (2007), and Yasuda (2005), who all show that bank participation in corporate debt underwritings reduces underwriting fees.

Besides arranger market share, other explanatory variables have similar impacts on both the level of non-arranger and total upfront fees. Both sets of fees decline significantly when loans are arranged for

borrowers in less politically risky countries (the coefficient on country risk is negative for both sets of regressions), and both fees increase significantly with creditor protection. This latter result signals the existence of a trade-off between the level of spread and fees. Regarding the other sets of risk proxies, non-arranger and total upfront fees behave differently. The only effects that they have in common are their positive relationship with general covenants and their sometimes significantly positive relationship with the industry dummies. Regarding general covenants, it is interesting to note the positive and statistically significant coefficients for both total and non-arranger upfront fees. This might indicate that general covenants require an active involvement by all participating banks in the ex-post monitoring of borrower performance, which is compensated with a higher level of fees. Apparently, this relationship contrasts with the presence of financial covenants, which are associated with higher arranger fees and lower non-arranger fees (both relationships are statistically significant). Financial covenants require a thorough *ex-post* control of the borrower's financial performance, which is a costly activity carried out by the lead arranger. Indirectly, it is one aspect of the certification the lead arranger provides to other lenders. Finally, projects with operational contracts in place have a statistically significant negative relationship with arranger fees, but a positive relation with non-arranger fees. This result is in line with Subramanian, Tung, and Wang (2007), who argue that the contractual network of the PF vehicle company allows lenders to better control project cash flows. The arranger perceives as less risky a project with contracts in place and the lower level of risk can lead the arranger to share higher fees with other syndicate members.

Taken together, the results in this section support the predictions of DCH. Lead arranger fees are significantly positively associated with arranger prestige—showing that top arranging banks are compensated for providing certification through higher direct payments—whereas non-arranger fees are significantly negatively related to lead arranger market share, showing that banks participating in loan syndicates accept lower fees when a prestigious arranger syndicates the loan. Total upfront fees are lower when a prestigious banker syndicates a loan than when lesser banks are arrangers. The evidence shows that not only are prestigious arrangers able to fund projects at a lesser cost (in terms of both spread and total fees) than less prestigious ones but they are also able to exploit their reputation by keeping a higher portion of these fees as a compensation for providing certification. Put differently, the data indicate that the banks participating in a PF loan syndicate pay for certification, rather than the project sponsors.

6. Adjusting for endogeneity and performing robustness checks

In order to test the robustness of our results, we conduct two different types of analysis. First, we consider that prestigious lead arrangers might be able to select high-quality projects and reject low quality ones. If this is the case, the negative effect of lead arranger prestige on spreads might not (only) measure

lead arranger certification, but might simply be due to the *ex ante* lower risk of these projects. Without controlling for such self-selection or endogeneity, we would assign too much importance to the effects of arranger prestige, since our significance levels will be too high. In the first part of this section, we therefore control for this endogeneity. Having confirmed that our findings hold, we then investigate whether the signs of the coefficients for spread (VCH) and fees (DCH) remain the same as those reported in Tables 4 and 5 for different regions and for different time periods—specifically, before versus after the East Asian financial crisis of 1997-98. We already indirectly control for some of these factors in our basic analysis of Table 4. For example, regional effects are to some extent captured by our country risk and creditor rights proxies that are related to the project's home country. Similarly, country risk as a time-varying proxy captures the effects of the Asian crisis on the political and economic situation of the project's home country. Nevertheless, a more direct analysis of these factors provides additional, valuable insights into the robustness of our key results.

6.1. Self selection

We investigate whether the observed impact of a lead arranger on spread and fees is directly due to its prestige, as we have assumed thus far, or is indirectly driven by the selection of specific types of projects by the prestigious lead arranger. We do this by estimating endogeneous treatment models with homogeneous effects, using methods described in Woolridge (1997, 2002) for our market share proxy of lead arranger prestige and in Heckman (1979) and Greene (1981) for our high-prestige dummy. The latter model has been applied to security underwriting by Puri (1996), Gande, Puri, and Saunders (1999), and more recently by Fang (2005), though these authors consider heterogeneous effects and examine certification by commercial and investment banks in the context of public security offerings by listed firms, in contrast to our focus on privately arranged and funded deals.

Consider our analysis of spreads reported in regression (8) of Table 4, where we use the high-prestige dummy as our proxy for lead arranger prestige. If projects are not randomly selected by prestigious lead arrangers then our proxy is endogenous and its coefficient is inconsistent. Heckman (1979) and Greene (1981) present a consistent estimator which requires as a first step the estimation of a selection equation. This selection equation models which projects are chosen by the lead arranger and in our case takes the form of Equation 2:

$$\textit{lead arranger prestige} = \alpha + \Sigma_i \rho_i \ \textit{country risk proxies} + \Sigma_i \varphi_i \ \textit{institutional risk proxies} + \Sigma_i \gamma_i \ \textit{operational risk dummies} + \eta_1 \ \textit{PF deal size} + \eta_2 \ \textit{PF market conditions} + \varepsilon \qquad \text{(Eq. 2)}$$

Here lead arranger prestige is measured by our high-reputation dummy and the dependent variables are those included in Equation 1, but with tranche size and industry dummies eliminated. These latter variables were generally insignificant in the spread and fee regressions of Tables 4 and 5. We expect that prestigious lead arrangers select less risky projects. As our analyses in Tables 4 and 5 revealed, the country risk, institutional risk, and operational risk proxies capture overall risks to such an extent that individual industry dummies become insignificant. In other words, industry risk no longer matters once these other risk factors are controlled for. We therefore focus in Equation 2 on country, institutional and operational risk only. Additionally, we include two proxies which are exclusive to Equation 2. Instead of the size of the tranche, we use the total size of the PF deal, since prestigious lead arrangers are more likely to arrange larger deals as they have the ability, the market reach, and the track record to attract lenders in the large numbers required to fund a major project. We thus expect a positive coefficient for this variable. Second, we include a measure for the PF market conditions in the year of loan signing. This "real PF global market volume" proxy is calculated as the total volume of all PF loans signed worldwide in a given year and measured in real 2000 US$. We believe that it is more difficult for a given borrower to attract a prestigious lead arranger when his project is competing with many other borrowers in the PF market. PF market volume can serve as a proxy for the competition among borrowers for funds and we expect to find a negative coefficient. As our dependent variable is measured as a dummy, Equation 2 is estimated as a probit model with robust standard errors.[16]

From Equation 2 we obtain the inverse Mills ratio (MILLS), which is added in the second step to Equation 1 as an endogeneity control such that:

$$\textit{loan feature} = \alpha + \beta\,\textit{lead arranger prestige} + \Sigma_i \rho_i\ \textit{country risk proxies} + \Sigma_I \varphi_i\ \textit{institutional risk proxies} + \Sigma_i \gamma_i\ \textit{operational risk dummies} + \Sigma_i \delta_i\ \textit{industry risk dummies} + \upsilon\,\textit{MILLS} + \varepsilon \qquad \text{(Eq. 3)}$$

For spreads, Equation 3 can now be consistently estimated with OLS and t-statistics can be obtained in a third step, as described in Heckman (1979) and Greene (1981). The coefficient β provides the endogeneity-controlled effect of lead arranger prestige on spreads. A coefficient υ of the inverse Mills ratio that is significantly positive (negative) indicates that unobserved borrower characteristics measured by ε from Equation 2 increase (decrease) the likelihood of attracting a prestigious lead arranger. Fang (2005) interprets such unobserved characteristics as private information of the bank reflecting borrower quality. For our fee regressions, this methodology cannot directly be applied as OLS is an inappropriate

[16] We also estimate Equation 2 with tranche size and industry dummies included. The correlation between tranche size and deal size is generally low but the inclusion of the industry dummies hinders the convergence of the model. Generally, the results are robust. Details are available upon request.

estimation model for the censored fee proxies. To be nevertheless able to implement this approach, we convert fees into continuous variables by taking logs. In order to retain those observations which are censored, for which fees are zero, we convert all zeros to values just below the smallest non-zero value in our sample. Robustness checks (not reported) show that this conversion does not substantially affect the results of Table 5, so we are confident of our implementation of Equation 3 for these converted fee proxies.

Unfortunately, the methodology outlined above is specific to situations where selection takes place in one of two groups—where the dependent variable of Equation 2 is a dummy. However, Woolrigde (2002: 603-642) shows that a 2SLS estimation of Equation 1 leads to consistent coefficients when the propensity score (the predicted values from the estimated Equation 2) is used instead of the treatment dummy. In this case, Equation 1 now becomes:

$$\textit{loan feature} = \alpha + \beta\,\textit{pred(lead arranger prestige)} + \Sigma_i \rho_i\ \textit{country risk proxies} + \Sigma_I \varphi_i\ \textit{financial risk proxies} + \Sigma_i \gamma_i\ \textit{operational risk dummies} + \Sigma_i \delta_i\ \textit{industry risk dummies} + \varepsilon \qquad \text{(Eq. 4)}$$

Here *pred(lead arranger prestige)* is the propensity score from Equation 2. We apply this approach in addition to the one outlined above for both spreads and our converted fee proxies. We report t-statistics based on robust standard errors clustered by deal. Woolridge (1997, 2002: 603-642) furthermore shows that 2SLS is also a consistent estimator when the treatment is continuous, as is the case for our lead arranger market share proxy. For this lead arranger prestige proxy, in combination with spread, we therefore estimate Equation 2 with a Tobit model—since the dependent variable is a market share it is right-censored at zero—and use the predicted value resulting from this estimation as an instrument for lead arranger prestige in the 2SLS estimation of Equation 4. For fees, we estimate Equations 2 and 4 as Tobit models, again with the predicted value resulting from Equation 2 as an instrument for lead arranger prestige in Equation 4 and with robust standard errors clustered by deal.

The results are reported in Table 6, with the first two sections of results presenting the findings for spreads and the last six presenting results for arranger, non-arranger and total upfront fees. Note that in all specifications of Equation 2 our deal size and PF global market volume proxies are significant--always the first but often both--and have the expected signs in the spread regressions. The indicators of endogeneity, the inverse Mills ratio and the Wald tests, are significant except when we model total upfront fees. Thus, it is indeed the case that prestigious lead arrangers select certain types of loans over others. However, even after controlling for this self-selection, the coefficient of our lead arranger prestige proxy is still generally consistent with our results in Tables 4 and 5: Prestigious lead arrangers are associated with loans that have lower spreads, higher arranger fees, and lower non-arranger fees. Only

total upfront fees are unaffected by lead arranger reputation. This suggests that our conclusions supporting the valuable certification and the direct compensation hypotheses are robust.

****** Insert Table 6 about here ******

6.2. Regional differences

To investigate whether or not regional differences matter in PF loan pricing, we classify loans according to the region where the project is located—into developing versus developed countries and into three macro-regions (Asia, North America and Western Europe). The regression results presented in Table 7 show that the lead arranger coefficient for spread is negative and statistically significant for all regions except Western Europe and developing countries. Similar to our findings in Table 4, however, the coefficients on the high-prestige dummy are not significant. Statistically significant coefficients for lead arranger prestige, measured using the continuous market share variable or as a dummy, have the same signs in all the fee regressions for developing countries and Asia sub-samples (positive for arranger, negative for non-arranger and overall upfront fees) as observed previously. These findings, in particular, support our basic thesis that lead arranger certification is most valuable, and expensive, for PF loans extended to borrowers outside Western countries and in less developed, less financially transparent economies.

****** Insert Table 7 about here ******

6.3. Temporal effects: The impact of the East Asian financial crisis

Global PF investment had been growing steadily through the late 1990s, but the East Asian financial crisis of 1997-98 and the subsequent Russian crisis in 1998 led to a sharp drop in sponsor interest (Esty, 2002). Those events may have also caused PF lenders, and particularly lead arrangers, to change their attitude to PF loan pricing and compensation. To test this, we break the sample into three time periods—a pre-crisis period from 1991 to 1997, a crisis period from 1998 to 1999 which covers the Asian and Russian crises, and a post-crisis period from 2000 to 2005. The results, presented in Table 8, offer striking support for the proposition that arranger certification is indeed driving our loan pricing and fee compensation results. The spread regressions reveal that while lead arranger prestige is always negatively related to spreads, it is only significant during the post-crisis period, which is precisely when potential lenders should most highly value arranger certification that all project risks have been revealed.

****** Insert Table 8 about here ******

The fee regression results also generally support this certification story—and the DCH regarding how arrangers are paid for providing certification—since the coefficients on the lead arranger market share variables are negative for total fees and non-arranger fees and positive for arranger fees, though not

consistently significant for different time periods and different prestige proxies. The results are particularly striking for arranger fees: attracting a prestigious lead arranger is most costly during the crisis period, precisely when banks should be the most reluctant to lend. Attracting an arranger with a market share one percentage point above the mean during the crisis period increased arranger fees by 32 bps—which is consistent with valuable certification being demanded and handsomely rewarded during a time of extreme financial turmoil.

7. Summary and Conclusions

Using a sample of 4,122 project finance loans, worth $769 billion, arranged between 1991 and 2005, we examine certification by lead arrangers of project finance loans. This is an ideal sample because project finance vehicle companies are stand-alone entities, created for a single purpose, so all valuation impacts will be contained in the project financing package. We propose two hypotheses regarding the role of certification by lead arrangers: First, the valuable certification hypothesis predicts that certification by prestigious arrangers will create economic value in that loans can be arranged at a lower cost by more prestigious arrangers. Second, the direct compensation hypothesis argues that top arrangers will be "paid" with higher fees, even if the overall cost of the loan is reduced by certification.

Our findings strongly support both, the valuable certification and the direct compensation hypotheses. Loan spreads are significantly lower for credits arranged by prestigious banks, and this is robust to various alternative specifications and to correcting for endogeneity in the ability of prestigious banks to select the most attractive loans to back. Prestigious arrangers also successfully syndicate PF loans with total fees that are no higher than loans arranged by banks with lower arranger market shares. Top banks are compensated for providing certification with higher upfront arranger fees, but this is offset by the lower non-arranger fees accepted by banks participating in loan syndicates organized by these prestigious arrangers. This evidence shows that participating banks, rather than PF sponsors, “pay” for the certification that top arrangers provide. When we split our sample based on region and stage of development, as well as temporally—before and after the East Asian financial crisis—and re-run the spread and fee estimations, we find that certification is most valuable, and most expensive, when information asymmetry is greatest and during periods of extreme financial stress.

Finally, we also present the first comprehensive, large sample analysis of PF financial packages and find that: (1) loans for projects in countries with lower political and economic risks have lower spreads, as expected: (2) loans with currency risk have economically and statistically significantly *lower* spreads, suggesting that only the largest and best loans with currency mismatches between project and loan cash flows can be funded; (3) longer term loans pay higher non-arranger upfront fees but show no

statistically significant relation with either spreads or arranger and total upfront fees; (4) general, project-related covenants have an impact similar to that found for collateral in our own and other loan pricing studies—they allow riskier loans to be funded with higher spreads and higher total fees. Financial covenants in the loan packages themselves do not statistically influence the level of spread and are associated with higher arranger upfront and lower non-arranger upfront fees. Finally, the level of creditor rights protection offered by project host countries has a relevant negative impact on PF spread and a positive impact on total fees.

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Table 1: Descriptive Statistics for the Project Finance Loan Sample, 1991 - 2005

In our sample, each loan tranche is considered as a separate observation. For a definition of the variables see Table A.1. The lower number of observations for the 5-year lead arranger market shares are caused by the fact that league tables only start in 1987 and thus no 5-year market shares can be calculated for loans signed in 1991.

Panel A: Descriptive statistics for the full sample

	percentage of total sample	mean	median	standard deviation	minimum	maximum	number of observations
loan tranche characteristics							
tranche size ($m real)		188.98	79.45	498.38	0.38	21,587.40	4,067
spread (in bp over base-rate)		169.18	140.00	131.18	-295.00	1,400.00	2,635
total upfront fee (in bp)		69.43	60.00	57.06	0.00	750.00	1,452
arranger upfront fee (in bp)		19.84	0.00	42.10	0.00	350.00	1,221
non-arranger upfront fee (in bp)		59.18	50.00	50.70	0.00	750.00	1,219
maturity (in months)		104.71	84.00	80.76	2.00	2,352.00	3,557
tranche rating		12.25	13.00	4.30	1.00	25.00	236
tranches with guarantee	18.17						4,122
tranches with currency risk	47.06						4,122
secured tranches	29.79						4,122
tranches with general covenants	3.93						4,122
tranches with financial covenants	15.87						4,122
year of loan signing		2000	2000	3.53	1991	2005	4,122
number of lenders		7.48	5.00	7.87	1.00	62.00	4,122
number of lead arrangers		2.13	1.00	2.30	1.00	36.00	4,122
average market share of all lead arrangers							
prior year		1.47	0.99	1.69	0.00	18.11	4,122
prior 3 years		1.43	0.98	1.48	0.00	9.24	4,122
prior 5 years		1.40	0.94	1.54	0.00	12.78	4,099
project characteristics							
deal size ($m real)		407.18	172.92	1,918.68	0.59	81,708.45	4,110
country risk		76.53	80.65	17.47	24.32	100.00	4,100
creditor rights		2.10	2.00	1.02	0.00	4.00	4,028
leverage (debt-to-equity ratio)		3.41	2.59	2.56	0.11	14.71	187
tranches in projects with risk management contracts							472
construction contract	15.47						
EPC construction contract	32.84						
off-take contract	22.88						
supply contract	18.64						
equipment contract	18.22						
O&M contract	11.02						
number of contracts		1.19	1.00	1.32	0.00	5.00	472
tranches in projects where sponsors are SPV counter-parties	19.49						4,122
tranches in projects in major industry group							4,122
banks & financial services	1.63						
corporate	58.20						
government	3.30						
media & communication	3.66						
utilities	19.87						
unknown	13.34						
tranches in projects in developing countries	40.39						4,122
tranches in projects signed around Asian crisis							4,122
prior to Asian crisis	29.11						
during Asian crisis	15.04						
after Asian crisis	55.85						

Table 1 continued: Descriptive Statistics for the Project Finance Loan Sample, 1991 - 2005

Panel B: Regional distribution of project finance

region	number of	real tranche size in US$m			year of loan signing			fraction of global
country	tranches	total	mean	median	minimum	median	maximum	PF volume
Africa	54	8,711.1	161.3	132.5	1997	2003.5	2005	1.1%
Egypt	16	3,246.9	202.9	161.8	2000	2004	2005	0.4%
Asia	2,036	317,374.7	159.6	62.4	1991	1998	2005	41.3%
Taiwan	262	55,916.3	231.1	64.0	1994	1999	2005	7.3%
Australia	253	38,939.0	155.1	75.1	1994	2001	2005	5.1%
China	254	38,370.7	151.7	46.8	1991	1997	2005	5.0%
Indonesia	242	32,022.1	133.4	58.2	1993	1997	2005	4.2%
Hong Kong	150	31,330.5	208.9	103.4	1991	1996	2004	4.1%
Malaysia	119	22,961.2	203.2	95.3	1992	1999	2005	3.0%
Thailand	127	21,347.5	175.0	79.0	1992	1997	2005	2.8%
South Korea	189	21,222.5	114.7	52.1	1992	2003	2005	2.8%
India	72	15,516.7	218.5	103.6	1993	1998	2003	2.0%
Japan	51	10,061.8	201.2	49.7	1999	2004	2005	1.3%
Philippines	113	9,935.5	89.5	52.3	1993	1999	2004	1.3%
Singapore	74	8,882.0	123.4	81.2	1993	1998	2005	1.2%
Vietnam	53	2,996.9	56.5	35.0	1993	1998	2005	0.4%
New Zealand	18	2,518.2	139.9	67.8	1995	1999	2004	0.3%
Eastern Europe	256	52,542.1	206.9	55.2	1995	2004	2005	6.8%
Romania	17	22,072.1	1,379.5	11.8	2002	2004	2005	2.9%
Russia	68	11,082.8	163.0	53.2	1995	2004	2005	1.4%
Poland	23	4,813.3	218.8	135.8	1996	2001	2005	0.6%
Hungary	27	4,046.0	149.9	59.3	1995	2002	2005	0.5%
Azerbaijan	17	2,572.6	151.3	123.6	2003	2004	2005	0.3%
Latin America	227	42,132.9	185.6	115.0	1992	2002	2005	5.5%
Mexico	56	12,563.7	224.4	126.8	1998	2003	2005	1.6%
Brazil	46	8,898.5	193.4	106.1	1997	2002.5	2005	1.2%
Chile	30	4,393.8	146.5	83.5	1992	2002	2005	0.6%
Bermuda	12	2,930.7	244.2	169.1	1993	1998.5	2001	0.4%
Argentina	19	2,727.8	143.6	109.5	1995	1998	2002	0.4%
Venezuela	13	2,578.8	198.4	163.9	1993	1997	2004	0.3%
Middle East & Turkey	207	68,942.3	338.0	176.6	1992	2003	2005	9.0%
Saudi Arabia	27	17,981.0	666.0	502.7	1995	1997	2005	2.3%
Qatar	30	14,517.7	483.9	324.0	1996	2004	2005	1.9%
United Arab Emirates	23	12,020.4	546.4	456.0	1999	2004	2005	1.6%
Turkey	51	7,654.8	150.1	97.8	1992	2001	2005	1.0%
Oman	28	6,873.9	264.4	204.5	1996	2004	2005	0.9%
Bahrain	19	4,679.2	246.3	216.3	1997	2004	2005	0.6%
North America	739	146,780.4	198.6	96.3	1991	2000	2005	19.1%
USA	700	136,595.2	195.1	94.2	1991	2000	2005	17.8%
Canada	39	10,185.1	261.2	117.4	1991	2000	2005	1.3%
Western Europe	588	130,380.1	222.9	97.8	1991	2003	2005	17.0%
United Kingdom	193	51,236.6	265.5	144.7	1991	2002	2005	6.7%
Spain	189	28,252.9	150.3	72.1	1993	2004	2005	3.7%
Italy	75	25,205.5	336.1	48.1	1993	2005	2005	3.3%
Germany	22	4,816.2	218.9	88.1	1993	2002	2005	0.6%
France	7	3,851.0	550.1	135.9	1997	2002	2005	0.5%
Netherlands	20	3,726.7	186.3	162.1	1994	2002	2004	0.5%
unknown	15	1,719.1	114.6	77.8	1993	1995	1996	0.2%
Global	**4,122**	**768,582.7**	**189.0**	**79.5**	**1991**	**2000**	**2005**	**100.0%**

Table 2: League Table for Lead Arrangers in Project Finance Loans Signed between January 1, 1987 and December 31, 2005

This table is obtained from Dealscan's predefined league table for all project finance loan tranches which includes all deals and assigns full credit to all lenders. Here we report only the top banks that were active as lead arrangers in the global project finance loan market between 1987 and 2005. The total tranche amount represents the size of the tranche which the bank has arranged. In case of multiple lead arrangers, the full tranche amount is allocated to all banks. For banks involved in mergers, the name of the bank in 2005 is listed in the top row and the data corresponding to the individual pre-merger as well as post-merger banks is listed in the rows below.

lead arranger	number of PF tranches	PF tranche volume (real 2005$ bn)	annual market shares (in %)																		
			1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Credit Agricole Indosuez (total)	202	116.0	4.6	2.4	4.6	2.8	2.5	2.9	1.5	2.8	2.0	2.5	5.5	3.9	4.9	8.1	0.0	34.8	0.0	0.0	0.0
Credit Lyonnais	139	51.5	0.0	0.4	1.4	1.0	1.5	2.3	1.4	1.8	2.0	1.0	3.9	3.0	2.6	8.1	0.0	17.5	0.0	0.0	0.0
Credit Agricole Indosuez	186	38.4	4.6	1.9	3.2	1.9	1.0	0.7	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Banque Indosuez	16	26.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.8	2.3	0.0	0.0	17.3	0.0	0.0	0.0
BNP Paribas (total)	143	107.7	0.1	0.0	0.0	0.0	0.0	0.5	1.6	2.6	4.5	2.3	5.8	6.3	4.8	4.6	2.9	16.0	0.0	0.0	0.0
BNP Paribas	202	50.2	4.2	4.1	2.8	6.3	5.1	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Banque Nationale de Paris	71	38.4	0.0	0.0	0.0	0.0	0.0	0.2	1.1	0.9	2.2	1.7	3.9	2.1	2.3	4.1	0.0	15.9	0.0	0.0	0.0
Banque Paribas	72	19.0	0.1	0.0	0.0	0.0	0.0	0.3	0.5	1.6	2.2	0.5	1.9	4.2	2.5	0.4	2.9	0.1	0.0	0.0	0.0
Mizuho Bank (total)	344	101.6	2.4	2.4	3.1	2.4	4.3	1.8	7.6	3.4	3.5	10.0	9.1	10.2	13.3	4.9	1.6	1.3	4.4	3.4	0.0
Industrial Bank of Japan	115	40.0	0.0	0.0	0.0	1.0	2.0	0.5	5.2	1.6	2.3	5.2	4.7	4.3	4.7	2.2	0.0	1.1	0.0	0.0	0.0
Fuji Bank	81	25.3	0.0	0.0	0.0	0.9	0.2	0.9	2.3	1.1	0.5	2.9	4.2	3.4	6.4	2.1	1.6	0.2	4.4	3.4	0.0
Mizuho Bank	77	23.0	2.4	2.4	3.1	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dai-Ichi Kangyo Bank Ltd	71	13.3	0.0	0.0	0.0	0.0	1.6	0.4	0.1	0.7	0.7	1.9	0.2	2.5	2.3	0.6	0.0	0.0	0.0	0.0	0.0
Citigroup	329	95.8	3.0	1.7	1.6	9.1	10.3	4.9	4.4	4.8	2.1	3.9	6.3	3.0	4.2	8.8	2.4	1.8	20.8	5.1	33.8
JP Morgan Chase (total)	278	90.3	0.0	0.3	0.2	1.9	1.2	2.5	1.0	4.3	9.1	5.8	16.5	5.7	7.5	9.7	19.1	2.8	14.3	27.4	21.7
Chase Manhattan Corp	152	50.9	0.0	0.0	0.0	0.0	0.0	2.0	1.0	2.7	6.6	3.3	5.5	1.8	4.1	7.6	8.4	2.5	8.2	7.9	8.9
JP Morgan	47	25.0	0.0	0.3	0.0	1.0	0.7	0.0	0.0	1.5	2.5	1.3	10.5	1.7	0.0	1.0	0.0	0.0	1.6	3.2	5.5
Chemical Bank	21	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.5	2.0	2.5	1.0	0.0	0.3	1.0	0.0	7.3
Bank One	44	3.0	0.0	0.1	0.2	0.9	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
First Chicago	9	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.8	0.0	0.8	0.0	3.0	15.6	0.0
Manufacturers Hanover Trust	3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	0.0	0.5	0.8	0.0
First Chicago NBD Corp	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NBD Bank	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Royal Bank of Scotland (total)	205	84.8	3.6	2.9	4.5	1.5	1.6	0.5	0.2	2.7	3.0	3.5	0.2	3.0	3.7	6.5	3.6	18.1	0.0	0.5	4.5
National Westminster Bank	54	42.8	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	2.0	3.4	0.1	3.0	3.7	6.5	3.6	18.1	0.0	0.5	4.5
Royal Bank of Scotland	151	42.0	3.6	2.9	4.5	1.5	1.6	0.0	0.2	2.2	1.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bank of Tokyo-Mitsubishi (total)	293	80.8	0.0	2.1	2.5	3.6	1.5	2.0	1.7	4.1	2.4	2.7	11.6	2.7	3.9	10.7	6.3	7.8	0.0	2.1	0.5
Bank of Tokyo-Mitsubishi	154	43.4	2.1	2.5	3.6	1.4	0.5	1.5	1.8	1.7	2.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sanwa Bank	71	19.7	0.0	0.0	0.0	0.1	1.5	0.1	2.4	0.3	0.6	4.9	0.9	1.8	2.3	2.2	0.0	0.0	0.0	0.5	0.0
Mitsubishi Bank	20	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.5	0.0	2.3	3.1	7.8	0.0	0.0	0.0	0.0
Bank of Tokyo	16	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	6.0	1.0	0.0	0.0	2.1	0.0	0.0
Tokai Bank	22	4.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.1	0.8	0.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mitsubishi Trust & Banking Corp	7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toyo Trust	3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Societe Generale	256	77.8	4.2	4.4	2.0	4.4	7.6	7.1	1.6	4.3	1.8	3.2	0.2	0.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0
Hongkong & Shanghai Banking Corp	231	77.5	2.8	3.0	4.6	1.8	1.7	2.2	2.2	3.7	2.5	3.2	1.3	2.5	0.0	0.0	0.0	15.9	0.0	0.0	0.0
ABN AMRO Bank	284	66.3	2.1	2.2	1.6	2.0	2.6	2.2	5.1	5.7	3.7	4.2	1.7	2.6	4.7	2.2	0.0	0.2	0.0	0.0	0.0
Sumitomo Mitsui Banking Corp (total)	253	63.6	1.8	3.6	2.7	2.4	2.6	0.8	2.3	2.0	2.7	4.5	5.3	3.8	7.7	2.0	3.8	0.0	6.8	0.0	0.0
Sumitomo Mitsui Banking Corp	84	26.7	1.8	3.6	2.7	2.4	2.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sumitomo Bank	118	24.9	0.0	0.0	0.0	0.0	0.1	0.8	1.3	2.0	2.3	3.1	1.6	2.8	2.3	1.0	3.8	0.0	5.2	0.0	0.0
Mitsui / Sakura Bank	48	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.3	1.3	3.7	1.1	5.4	1.0	0.0	0.0	1.6	0.0	0.0
Bank Sumitomo Niaga	3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bank of America (total)	220	51.3	1.1	0.1	1.3	2.1	1.5	4.3	5.2	4.6	3.2	1.6	4.7	4.4	0.5	0.0	0.0	1.2	0.8	3.0	4.3
Bank of America	144	44.3	1.1	0.0	0.7	2.0	0.9	3.1	3.4	4.3	2.8	1.4	4.7	4.2	0.5	0.0	0.0	1.1	0.8	3.0	3.7
FleetBoston	30	2.8	0.0	0.0	0.0	0.0	0.5	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fleet Bank	30	2.7	0.0	0.1	0.6	0.1	0.0	0.0	0.8	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BankBoston	7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bank of Boston	7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
BayBank Boston	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Barclays Bank / BZW	150	49.9	1.1	1.7	0.3	4.5	0.7	2.9	1.0	3.0	2.6	2.8	5.3	3.2	0.4	6.2	3.8	1.2	0.0	0.0	3.1
West LB	132	42.4	2.1	1.3	2.8	2.1	1.5	2.6	1.4	2.4	2.0	0.5	0.3	3.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Deutsche Bank (total)	177	40.5	0.2	0.8	2.6	0.8	2.5	1.1	1.8	5.3	2.0	2.1	0.9	4.3	1.3	3.9	1.3	0.7	0.0	0.0	1.8
Deutsche Bank / Morgan Greenfell	138	33.2	0.2	0.8	2.6	0.8	2.5	1.1	0.7	3.9	1.6	1.9	0.8	3.4	1.3	0.8	1.3	0.5	0.0	0.0	0.0
Bankers Trust	39	7.3	0.0	0.0	0.0	0.0	0.1	0.1	1.1	1.3	0.4	0.2	0.1	0.9	0.0	3.2	0.0	0.2	0.0	0.0	1.8
Australia & New Zealand Banking Group	175	34.2	1.6	1.3	1.6	1.9	1.2	2.2	3.6	1.5	1.8	1.5	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ING (total)	131	31.1	2.4	1.5	1.5	2.1	1.3	0.4	2.1	0.8	0.7	0.1	0.8	0.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0
ING Bank	126	29.4	2.4	1.5	1.5	2.1	1.3	0.4	2.1	0.6	0.7	0.1	0.8	0.4	2.3	0.0	0.0	0.0	0.0	0.0	0.0
BHF Bank	5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0
Credit Suisse First Boston (total)	93	30.7	0.4	0.0	0.0	2.7	3.4	2.4	4.0	2.6	0.8	1.9	0.0	0.9	0.3	2.6	5.3	0.8	4.5	3.7	0.0
Credit Suisse First Boston	66	22.5	0.3	0.0	0.0	2.7	3.4	2.4	4.0	2.6	0.7	0.0	0.0	0.0	0.3	0.0	3.7	0.0	0.0	0.0	0.0
Credit Suisse	26	7.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.9	0.0	0.9	0.0	2.6	1.6	0.8	1.9	3.7	0.0
First Boston	1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Union Bank of Switzerland (total)	86	29.1	0.5	0.0	2.2	0.0	0.8	0.0	0.3	2.1	1.4	0.4	4.3	2.2	2.3	7.7	4.0	0.9	7.3	7.2	11.7
Union Bank of Switzerland	83	28.4	0.5	0.0	2.2	0.0	0.8	0.0	0.3	2.1	1.4	0.4	4.3	2.2	2.3	7.7	4.0	0.7	3.6	7.2	11.7
Kidder Peabody	2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
PaineWebber	1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0
Gulf International Bank	47	28.9	2.6	1.3	2.1	0.0	0.1	0.0	0.0	0.5	2.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBRD	79	27.3	4.9	0.4	0.4	0.6	0.1	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chiao Tung Bank	40	26.6	0.0	0.1	0.2	0.6	0.5	10.4	0.0	0.4	0.1	1.4	0.0	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sum of annual market shares of banks listed, %			**44**	**34**	**43**	**47**	**50**	**54**	**51**	**62**	**55**	**68**	**72**	**72**	**74**	**74**	**56**	**96**	**61**	**51**	**81**

Table 3: Test for Differences in Project Finance Characteristics for Different Levels of Lead Arranger Market Share

This table reports statistics for project finance characteristics which are separated into quartiles based on the lead arranger market share. Since several tranches can have the same lead arranger market share, the number of observations is slightly different across the different quartiles. The analyses use all observations with non-missing values for the lead arranger market share and the respective dependent variable. Standard deviations are reported in the column 'std dev' and number of observations in the column 'obs'. The Wilcoxon test is a non-parametric test which assesses the difference in means between the current quartile and the next quartile quartile of the dependent variable based on a one-sided probability. ***, **, * indicate that normality or equality of means can be rejected at the 1%, 5%, and 10% significance level, respectively. For a definition of the variables see Table A-1.

	lead arranger market share	Average prior 3-year lead arranger market share			dependent variable					
								test for	Wilcoxon z-	
dependent variable	quartile	mean	median	std dev	mean	median	std dev	normality	test	obs
spread	very low	0.07	0.04	0.07	211.76	175.00	161.38	0.85 ***	-6.25 ***	661
	moderately low	0.62	0.59	0.24	163.03	137.50	117.03	0.83 ***	2.08 **	659
	moderately high	1.61	1.57	0.36	147.46	130.00	98.74	0.91 ***	0.88	668
	very high	3.63	3.25	1.23	154.02	135.00	130.01	0.64 ***		650
arranger upfront fee	very low	0.05	0.02	0.06	10.17	0.00	33.69	0.34 ***	4.33 ***	306
	moderately low	0.62	0.58	0.27	18.78	0.00	45.61	0.48 ***	-2.32 ***	305
	moderately high	1.63	1.56	0.35	23.10	0.00	39.81	0.65 ***	1.02	306
	very high	3.48	3.22	1.12	27.36	0.00	46.37	0.66 ***		304
non-arranger upfront fee	very low	0.05	0.02	0.06	71.74	65.00	52.25	0.90 ***	-4.78 ***	306
	moderately low	0.62	0.58	0.27	54.72	50.00	51.79	0.84 ***	-2.43 ***	304
	moderately high	1.63	1.56	0.35	62.35	55.00	56.58	0.66 ***	-3.91 ***	305
	very high	3.48	3.22	1.12	48.13	45.00	37.04	0.93 ***		304
total upfront fee	very low	0.05	0.02	0.06	79.15	74.00	62.10	0.84 ***	3.73 ***	363
	moderately low	0.63	0.59	0.27	63.47	55.50	53.77	0.84 ***	-2.33 ***	364
	moderately high	1.64	1.58	0.34	72.28	60.00	64.87	0.65 ***	-2.03 **	364
	very high	3.51	3.22	1.14	62.81	50.00	43.62	0.92 ***		361

Table 4: Regression Analysis of the Valuable Certification Hypothesis

The regressions estimated with OLS with robust standard errors clustered by PF deal. For each independent variable, the first row reports the estimated coefficient and the second row reports the t-statistic. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5% or 10% level, respectively. For a definition of the variables see Table A-1. All available industry dummies are used except those for banks and financial services, which serve as the benchmark.

dependent variable	spread							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
intercept	632.32 ***	641.81 ***	1737.02 **	1736.17 **	985.43 **	986.92 **	616.45 ***	624.34 ***
	6.55	6.73	2.52	2.56	2.54	2.57		6.66
lead arranger prestige								
average 3-year prior market share	-6.18 **		-1.71		1.69		-6.04 **	
	-2.46		-0.14		0.22		-2.39	
high-prestige dummy		-9.19		11.06		22.10		-8.71
		-1.06		0.26		0.89		-1.00
institutional risk proxies								
country risk	-2.45 ***	-2.45 ***	-7.71 **	-7.59 **	-4.21 *	-4.16 *	-2.45 ***	-2.45 ***
	-4.84	-4.87	-2.03	-2.02	-1.95	-1.94	-4.84	-4.87
creditor rights	-7.85 ***	-7.96 ***	-33.41 *	-33.07 *	-28.14 ***	-28.82 ***	-7.80 ***	-7.90 ***
	-2.85	-2.89	-1.79	-1.86	-2.68	-2.88	-2.84	-2.88
financial risk proxies								
currency risk dummy	-36.71 ***	-37.49 ***	-173.81	-174.87	-85.64	-86.41	-37.46 ***	-38.30 ***
	-2.66	-2.71	-1.28	-1.29	-1.28	-1.30	-2.69	-2.74
ln(tranche maturity)	-7.28	-7.22	-34.62	-35.05	-15.23	-14.24	-7.08	-7.00
	-1.51	-1.49	-1.10	-1.13	-1.17	-1.11	-1.47	-1.45
ln(real tranche size)	-12.43 ***	-13.30 ***	-33.61 *	-34.08 *	-19.15 *	-19.84 *	-12.43 ***	-13.29 ***
	-4.54	-5.01	-1.88	-1.91	-1.84	-1.94	-4.54	-5.01
guarantee dummy	-22.32 ***	-22.32 ***	-13.03	-11.75	-26.98	-23.62	-22.47 ***	-22.47 ***
	-2.78	-2.78	-0.27	-0.24	-0.81	-0.71	-2.77	-2.77
rated tranche dummy	25.85 **	23.28 *	51.41	43.49	45.64 *	43.94	26.33 **	23.85 **
	2.13	1.94	0.69	0.58	1.74	1.62	2.16	1.99
leverage			-1.54	-2.00				
			-0.24	-0.32				
operational risk dummies								
secured tranche dummy	16.29 **	17.36 **	22.61	22.57	27.05	28.16	16.44 **	17.49 **
	2.26	2.45	0.62	0.65	1.07	1.21	2.28	2.47
tranche with general covenants	66.89 ***	68.47 ***	129.76	129.27	77.06	74.21	67.28 ***	68.86 ***
	3.69	3.77	0.94	0.92	1.25	1.23	3.71	3.80
tranche with financial covenants	-16.28	-15.91	12.34	16.21	-16.96	-16.17	-16.63	-16.29
	-1.62	-1.58	0.20	0.26	-0.57	-0.54	-1.65	-1.61
tranches with operational contracts					12.14	12.27	15.65	17.13 *
					0.66	0.67	1.61	1.76
tranches with sponsors as counterparty					-5.74	-3.15	-6.52	-6.54
					-0.25	-0.14	-0.38	-0.38
industry risk dummies								
corporate	26.77	26.81	-41.62	-45.70	6.11	4.54	27.28	27.36
	0.59	0.59	-0.62	-0.68	0.21	0.16	0.61	0.61
utilities	5.46	3.17	-135.15 *	-139.35 *	-47.91 *	-52.76 **	6.20	3.97
	0.12	0.07	-1.70	-1.74	-1.93	-2.06	0.14	0.09
media & telecommunication	56.28	52.77	-9.89	-16.59	34.44	35.12	57.24	53.85
	1.20	1.12	-0.10	-0.16	0.84	0.84	1.22	1.14
government	18.46	19.88	-159.60	-160.99 *	-99.48 **	-102.33 **	18.38	19.77
	0.38	0.41	-1.66	-1.70	-2.23	-2.36	0.38	0.41
unknown	27.80	27.59					28.51	28.35
	0.60	0.60					0.62	0.62
adjusted R^2	0.127	0.124	0.441	0.442	0.296	0.300	0.128	0.124
number of observations	2479	2479	129	129	298	298	2479	2479

Table 5: Regression Analysis of the Direct Compensation Hypotheses

The regressions estimated a tobit model with maximum likelihood with robust standard errors clustered by PF deal. For each independent variable, the first row reports the estimated coefficient and the second row reports the t-statistic. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5% or 10% level, respectively. For a definition of the variables see Table A-1. All available industry dummies are used except those for banks and financial services, which serve as the benchmark.

dependent variable	arranger upfront fee				non-arranger upfront fee				total upfront fee			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
intercept	-424.02 ***	-425.06 ***	-379.67 ***	-381.69 ***	72.06 ***	71.97 ***	58.14 **	58.29 **	55.13 **	57.95 **	50.17 *	52.79 *
	-4.89	-4.92	-4.28	-4.31	2.66	2.64	2.06	2.05	2.06	2.14	1.81	1.88
lead arranger prestige												
average 3-year prior market share	7.64 **		7.49 **		-4.43 ***		-4.26 ***		-3.92 ***		-3.85 ***	
	2.33		2.31		-3.44		-3.37		-3.10		-3.09	
high-prestige dummy		22.35 *		21.16 *		-16.62 ***		-16.19 ***		-10.44 **		-10.36 **
		1.89		1.82		-3.54		-3.48		-2.38		-2.37
institutional risk proxies												
country risk	-1.01 **	-0.97 *	-0.99 *	-0.95 *	-1.15 ***	-1.17 ***	-1.17 ***	-1.19 ***	-1.05 ***	-1.05 ***	-1.06 ***	-1.07 ***
	-2.00	-1.93	-1.96	-1.89	-4.28	-4.53	-4.38	-4.64	-4.95	-5.02	-5.02	-5.09
creditor rights	2.00	1.70	1.35	1.06	10.59 ***	10.80 ***	10.83 ***	11.04 ***	8.03 ***	8.05 ***	8.08 ***	8.11 ***
	0.32	0.27	0.22	0.17	3.95	4.19	4.07	4.32	4.21	4.24	4.24	4.27
financial risk proxies												
currency risk dummy	0.41	0.25	3.27	3.13	13.98 ***	14.31 ***	12.83 ***	13.15 ***	6.35	6.34	5.75	5.72
	0.03	0.02	0.23	0.22	3.30	3.39	3.03	3.12	1.27	1.25	1.15	1.13
ln(tranche maturity)	-6.69	-7.49	-7.11	-7.89	6.20 **	6.39 **	6.43 **	6.60 **	2.39	2.62	2.41	2.62
	-0.83	-0.93	-0.89	-0.99	2.03	2.10	2.12	2.18	0.69	0.76	0.70	0.76
ln(real tranche size)	22.71 ***	23.32 ***	22.82 ***	23.43 ***	-0.34	-0.52	-0.40	-0.56	2.38 **	2.01 *	2.37 **	2.01 *
	6.15	6.34	6.17	6.36	-0.27	-0.42	-0.32	-0.45	1.99	1.71	2.00	1.73
guarantee dummy	-1.28	-1.61	-1.79	-2.08	-3.58	-3.58	-3.86	-3.89	-4.81	-4.67	-5.18	-5.08
	-0.11	-0.14	-0.16	-0.18	-0.75	-0.75	-0.82	-0.83	-0.94	-0.92	-1.02	-1.00
rated tranche	91.99 ***	92.13 ***	93.28 ***	93.48 ***	-38.73 ***	-38.23 **	-39.78 ***	-39.30 ***	15.92	15.94	15.58	15.60
	3.75	3.69	3.74	3.70	-2.64	-2.55	-2.71	-2.62	1.38	1.37	1.35	1.34
operational risk dummies												
secured tranche	19.78 *	19.31 *	20.39 *	19.86 *	2.88	3.25	3.21	3.59	6.59	7.07 *	6.77	7.26 *
	1.79	1.76	1.85	1.82	0.66	0.76	0.75	0.85	1.52	1.65	1.57	1.70
tranche with general covenants	31.26	33.30	28.91	30.45	58.46 ***	56.18 ***	63.38 ***	61.36 ***	43.64 ***	44.38 ***	44.39 ***	45.17 ***
	0.56	0.59	0.52	0.55	3.56	3.49	4.12	4.15	3.85	3.92	3.93	4.00
tranche with financial covenants	25.86 *	25.32 *	27.11 *	26.57 *	-18.25 ***	-17.77 ***	-18.91 ***	-18.45 ***	-9.56	-9.30	-9.75	-9.50
	1.85	1.81	1.94	1.90	-2.67	-2.73	-2.77	-2.84	-1.36	-1.36	-1.39	-1.38
tranches with operational contracts			-46.47 **	-45.77 **			15.68 *	15.31 *			6.40	6.54
			-2.02	-2.03			1.79	1.74			0.76	0.76
tranches with sponsors as counterparty			-34.31	-31.68			-12.45	-14.02			-11.99	-13.11
			-0.90	-0.87			-0.89	-0.98			-1.10	-1.15
industry risk dummies												
corporate	25.05	22.07	24.51	21.72	26.02 *	27.21 **	26.32 *	27.49 **	20.58	20.83	20.87	21.13
	0.73	0.64	0.72	0.64	1.91	1.98	1.93	1.99	1.61	1.61	1.63	1.63
utilities	38.60	35.82	36.51	34.04	28.13 **	29.65 **	29.32 **	30.87 **	27.95 **	27.38 **	28.78 **	28.28 **
	1.03	0.96	0.98	0.92	1.98	2.07	2.07	2.16	2.08	2.01	2.14	2.08
media & telecommunication	31.01	30.18	28.57	27.88	25.69	26.41	27.24	28.04	18.17	16.86	19.54	18.36
	0.76	0.74	0.71	0.69	1.50	1.51	1.59	1.61	1.27	1.17	1.36	1.27
government	-17.53	-17.77	-17.48	-17.71	30.49 *	29.53 *	30.38 *	29.45 *	29.99	29.27	30.24	29.52
	-0.36	-0.36	-0.36	-0.36	1.84	1.79	1.83	1.79	1.38	1.34	1.38	1.35
unknown	-11.83	-14.77	-12.16	-14.94	26.57 *	28.00 *	26.92 *	28.33 *	19.78	20.24	20.08	20.54
	-0.32	-0.40	-0.33	-0.41	1.67	1.75	1.70	1.77	1.34	1.36	1.36	1.38
Log pseudolikelihood	-2375.7	-2376.1	-2371.7	-2372.3	-5927.1	-5924.2	-5924.0	-5921.0	-7481.6	-7483.6	-7480.4	-7482.3
pseudo R^2	0.028	0.028	0.030	0.030	0.017	0.018	0.018	0.018	0.010	0.010	0.011	0.010
number of observations	1177	1177	1177	1177	1175	1175	1175	1175	1390	1390	1390	1390
number of left-censored observations	843	843	843	843	74	74	74	74	14	14	14	14

Table 6: Endogeneity-Robust Regression Analysis of the Valuable Certification and Direct Compensation Hypotheses

For the OLS and 2SLS estimations, the first row reports the estimated coefficient and the second row reports the t-statistics based on robust standard errors clustered by PF deal. For the Probit, Tobit and Heckman estimations, the first row reports the estimated coefficient and the second row reports the z-statistics. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5% or 10% level, respectively. All estimations of Equation 4 use the predicted values of their respective Equation 2 as an instrument for lead arranger prestige. For a definition of the variables see Table A-1.

	Modelling spreads with market share		Modelling spreads with high-prestige dummy			Modelling arranger fees with market share		Modelling arranger fees with high-prestige dummy		
dependent variable	average 3-year prior market share	spread	high-prestige dummy	spread	spread	average 3-year prior market share	arranger fee	high-prestige dummy	arranger fee	ln(arranger fee)
	Eq 2 - Tobit	Eq 4 - 2SLS	Eq 2 - Probit	Eq 4 - 2SLS	Eq 3 - Heckman	Eq 2 - Tobit	Eq 4 - Tobit	Eq 2 - Probit	Eq 4 - Tobit	Eq 3 - Heckman
intercept	1.43	588.44 ***	-0.01	593.32 ***	599.66 ***	-2.27	-201.23 *	0.60	-248.41 **	-1.17
	0.39	6.25	-0.01	6.09	12.57	-0.51	-1.71	0.23	-2.31	-1.26
lead arranger prestige		-21.58 *		-98.25 *	-69.97 **		112.52 ***		321.77 **	2.85 ***
		-1.87		-1.76	-2.01		3.58		2.68	4.48
MILLS					36.86 *					-1.54 ***
					1.79					-4.10
institutional risk proxies										
country risk	0.00	-2.46 ***	0.00	-2.49 ***	-2.45 ***	0.00	-1.13	0.00	-0.62	-0.01 **
	0.34	-4.73	0.04	-4.65	-11.43	0.83	-1.52	-0.12	-0.80	-2.13
creditor rights	-0.06	-7.53 ***	-0.06 *	-7.84 **	-8.45 ***	-0.06	-1.65	-0.03	-4.90	0.03
	-1.47	-2.65	-1.90	-2.58	-3.15	-0.86	-0.17	-0.67	-0.50	0.46
financial risk proxies										
currency risk dummy	0.29 ***	-33.60 **	0.27 ***	-31.55 **	-33.55 ***	0.20	-8.45	0.17	-11.32	0.03
	2.58	-2.46	3.42	-2.23	-4.58	1.25	-0.41	1.61	-0.57	0.20
ln(tranche maturity)	-0.07	-7.51	-0.06	-7.89	-7.00 **	-0.19 **	9.61	-0.14 **	1.21	-0.05
	-1.25	-1.49	-1.46	-1.50	-1.97	-2.00	0.75	-1.97	0.10	-0.52
ln(real tranche size)		-9.34 ***		-9.70 ***	-10.78 ***		1.50		10.32 *	0.15 ***
		-3.20		-3.31	-4.52		0.21		1.74	3.29
guarantee dummy	0.00	-22.68 ***	-0.02	-23.33 ***	-23.18 ***	-0.06	3.95	-0.06	3.20	0.02
	-0.03	-2.76	-0.23	-2.73	-3.48	-0.51	0.23	-0.62	0.19	0.14
rated tranche	0.42 *	35.18 **	0.21 *	33.83 **	30.28 ***	0.05	73.62	0.01	76.46	1.93 ***
	1.82	2.38	1.88	2.26	2.72	0.12	1.53	0.04	1.46	4.64
operational risk dummies										
secured tranche	-0.24 ***	13.53 *	-0.03	16.61 **	16.67 ***	-0.30 **	42.67 **	-0.12	29.63 *	0.30 **
	-2.75	1.88	-0.41	2.25	2.98	-2.49	2.48	-1.38	1.85	2.57
tranche with general covenants	-0.34	62.12 ***	-0.12	64.47 ***	65.12 ***	-0.37	62.21	-0.28	91.40	0.84
	-1.48	3.28	-0.78	3.29	4.98	-1.17	0.72	-0.41	1.16	0.96
tranche with financial covenants	-0.20 *	-17.67 *	-0.12	-17.00	-17.15 **	0.65	26.75	-0.08	18.65	0.39 **
	-1.80	-1.70	-1.45	-1.63	-2.38	1.02	1.26	-0.67	0.82	2.56
tranches with operational contracts	-0.45 **	9.04	-0.37 ***	5.93	9.02	0.17	-23.31	-0.38 **	-20.06	-0.30
	-1.96	0.77	-2.90	0.43	0.70	0.27	-0.58	-2.04	-0.55	-1.04
tranches with sponsors as counterparty	0.04	-7.54	-0.08	-10.80	-6.46	-0.14	-95.77	0.18	-47.43	-0.35
	0.18	-0.46	-0.45	-0.62	-0.41	-0.87	-1.06	0.67	-0.73	-1.04
industry risk dummies										
corporate		27.15		27.71	28.55		13.78		-9.53	0.15
		0.59		0.57	1.32		0.23		-0.20	0.45
utilities		15.76		19.38	6.73		-53.44		-65.15	0.22
		0.32		0.37	0.30		-0.80		-1.07	0.64
media & telecommunication		68.53		64.14	55.48 **		-70.28		-62.85	0.34
		1.36		1.23	2.24		-0.85		-0.82	0.81
government		12.84		12.01	20.18		-35.67		-14.80	-0.30
		0.27		0.24	0.77		-0.49		-0.24	-0.63
unknown		28.94		28.45	29.51		-12.53		-42.63	-0.16
		0.62		0.58	1.32		-0.20		-0.84	-0.46
Step 1 control variables										
ln(real deal size)	0.37 ***		0.23 ***			0.36 ***		0.26 ***		
	10.19		9.49			8.11		7.59		
ln(real PF global market volume)	-0.25 *		-0.18 ***			-0.08		-0.20 **		
	-1.78		-2.78			-0.51		-2.16		
Endogeneity test										
Wald χ^2		117.35					42.94		6.430	
prob>χ^2		0.00					0.00		0.011	
Log pseudolikelihood	-4347.1		-1330.7			-2028.6	-4364.5	-631.2	-2993.5	
adjusted / pseudo R^2	0.036	0.100	0.054	0.042		0.030		0.054	0.002	
number of observations	2479	2479	2479	2479	2479	1177	1177	1177	1177	1177
number of left-censored observations	197					106	843	843	843	

Table 6 continued: Endogeneity-Robust Regression Analysis of the Valuable Certification and Direct Compensation Hypotheses

For the OLS and 2SLS estimations, the first row reports the estimated coefficient and the second row reports the t-statistics based on robust standard errors clustered by PF deal. For the Probit, Tobit and Heckman estimations, the first row reports the estimated coefficient and the second row reports the z-statistics. ***, **, and * indicate that the coefficients are significantly different from zero at the 1%, 5% or 10% level, respectively. All estimations of Equation 4 use the predicted values of their respective Equation 2 as an instrument for lead arranger prestige. For a definition of the variables see Table A-1.

	Modelling non-arranger fees with market share		Modelling non-arranger fees with high-prestige dummy			Modelling total upfront fees with market share		Modelling total upfront fees with high-prestige dummy		
dependent variable	average 3-year prior market share	non-arranger fee	high-prestige dummy	non-arranger fee	ln(non-arranger fee)	average 3-year prior market share	total upfront fee	high-prestige dummy	total upfront fee	ln(total upfront fee)
	Eq 2 - Tobit	Eq 4 - Tobit	Step 1 - Probit	Eq 4 - Tobit	Eq 3 - Heckman	Eq 2 - Tobit	Eq 4 - Tobit	Step 1 - Probit	Eq 4 - Tobit	Eq 3 - Heckman
intercept	-2.26	47.65	0.65	47.57	3.00 ***	-3.53	75.90 **	-0.60	71.84 **	3.26 ***
	-0.51	1.49	0.25	1.53	5.22	-0.85	2.29	-0.27	2.25	7.06
lead arranger prestige		-10.57		-41.82	-0.89 **		10.79		37.20	0.23
		-1.26		-1.57	-2.27		1.10		0.91	0.68
MILLS					0.38 *					-0.20
					1.65					-0.98
institutional risk proxies										
country risk	0.00	-1.16 ***	0.00	-1.22 ***	-0.03 ***	0.00	-1.06 ***	0.00	-1.03 ***	-0.02 ***
	0.84	-4.36	-0.14	-5.25	-8.73	0.80	-4.53	0.09	-4.38	-7.97
creditor rights	-0.07	10.97 ***	-0.03	11.51 ***	0.33 ***	-0.04	7.46 ***	-0.02	7.23 **	0.18 ***
	-0.88	4.16	-0.69	4.62	8.19	-0.67	3.75	-0.50	3.52	6.43
financial risk proxies										
currency risk dummy	0.20	13.54 ***	0.17	14.38 ***	0.40 ***	0.22	4.11	0.15	3.92	0.21 ***
	1.24	3.02	1.59	3.11	4.98	1.54	0.73	1.49	0.68	3.30
ln(tranche maturity)	-0.19 **	5.43	-0.14 **	5.79 *	0.08	-0.11	3.86	-0.07	3.36	0.06
	-1.98	1.50	-1.96	1.75	1.49	-1.26	0.99	-1.17	0.87	1.34
ln(real tranche size)		0.88		0.56	0.02		-0.56		0.11	0.03
		0.46		0.36	0.80		-0.28		0.06	1.24
guarantee dummy	-0.06	-4.27	-0.06	-4.44	-0.03	-0.04	-4.48	-0.02	-4.68	-0.03
	-0.51	-0.89	-0.64	-0.93	-0.37	-0.32	-0.85	-0.19	-0.88	-0.57
rated tranche	0.06	-38.56 **	0.06	-37.48 **	-0.95 ***	0.36	9.53	0.33 *	8.23	0.19
	0.15	-2.37	0.19	-2.15	-3.85	1.22	0.73	1.86	0.59	1.37
operational risk dummies										
secured tranche	-0.30 **	1.98	-0.11	2.86	-0.04	-0.26 **	9.27 **	-0.07	8.06 *	0.01
	-2.50	0.48	-1.36	0.69	-0.53	-2.37	2.05	-0.95	1.76	0.24
tranche with general covenants	-0.37	61.17 ***	-0.29	55.90 ***	1.85 ***	-0.28	48.32 ***	-0.03	46.30 ***	1.07 ***
	-1.17	3.87	-0.42	3.69	3.65	-1.08	3.98	-0.14	3.90	6.93
tranche with financial covenants	0.65	-18.89 ***	-0.07	-17.79 ***	-0.55 ***	0.43	-9.22	-0.10	-9.96	-0.36 ***
	1.02	-2.79	-0.65	-2.91	-6.15	0.93	-1.23	-0.96	-1.27	-5.12
tranches with operational contracts	0.17	14.12	-0.38 **	12.92	0.58 ***	-0.24	8.58	-0.22	8.51	0.31 **
	0.26	1.45	-2.04	1.27	3.41	-0.60	1.01	-1.29	1.07	2.54
tranches with sponsors as counterparty	-0.14	-8.58	0.18	-12.52	-0.62 ***	-0.15	-16.41	0.07	-13.34	-0.38 **
	-0.85	-0.57	0.66	-0.82	-2.66	-0.99	-1.08	0.32	-0.98	-2.33
industry risk dummies										
corporate		26.71 *		29.83 **	0.53 **		22.51 *		21.94 *	0.32 *
		1.90		2.04	2.32		1.74		1.83	1.73
utilities		34.52 **		39.07 **	0.61 **		18.94		18.69	0.39 **
		2.14		2.27	2.53		1.27		1.26	2.04
media & telecommunication		33.07 *		35.59 *	0.68 **		9.30		11.38	0.46 **
		1.64		1.68	2.33		0.58		0.78	2.13
government		31.12 *		28.86 *	0.71 **		33.27		36.49 *	0.22
		1.79		1.70	2.19		1.51		1.66	0.86
unknown		26.82 *		30.52 *	0.45 *		23.02		21.97	0.19
		1.65		1.86	1.89		1.49		1.52	0.99
Step 1 control variables										
ln(real deal size)	0.36 ***		0.26 ***			0.35 ***		0.24 ***		
	8.11		7.61			8.96		7.84		
ln(real PF global market volume)	-0.08		-0.21 **			-0.05		-0.17 **		
	-0.51		-2.18			-0.32		-1.98		
Endogeneity test										
Wald χ^2		100.56		0.97			81.67		1.390	
prob>χ^2		0.00		0.32			0.00		0.238	
Log pseudolikelihood	-2025.8	-7934.6	-630.4	-6554.5		-2393.9	-9853.4	-746.6	-8233.5	
adjusted / pseudo R^2	0.030		0.054			0.032		0.051		
number of observations	1175	1175	1175	1175	1175	1390	1390	1390	1390	1390
number of left-censored observations	106	74	74	74		127	14	14	14	

Table 7: Regional Differences in the Lead Arranger's Position

See notes to Tables 4 and 5. Each regression uses the maximum number of observations for which the regression variables are available. The number of observations for Africa, Eastern Europe and CIS, Latin America and the Carribean, and Middle East and Turkey are too few to allow for a separate regression analysis. For Asia, North America and Western Europe, regressions are only reported when at least 100 observations are available. Variables are excluded from the regression if they do not vary over the sample or if they cause collinearity problems.

dependent variable	spread					arranger upfront fee			non-arranger upfront fee			total upfront fee				
region	developing countries	developed countries	Asia	North America	Western Europe	developing countries	developed countries	Asia	developing countries	developed countries	Asia	developing countries	developed countries	Asia	North America	Western Europe
intercept	826.82 ***	416.62 ***	688.52 ***	1493.99 ***	90.35	-425.99 ***	-294.73 **	-420.84 ***	67.66 *	55.60	95.78 ***	22.08	67.03	76.59 **	631.43 *	307.95
	3.98	5.66	4.07	4.90	1.62	-3.08	-2.46	-3.64	1.65	1.43	3.39	0.50	1.59	2.46	1.88	1.03
lead arranger prestige																
average 3-year prior market share	-7.45	-5.28 **	-10.11 **	-5.76 **	1.50	12.91 ***	1.65	8.49 **	-8.40 ***	0.63	-4.93 ***	-8.42 ***	0.71	-3.95 ***	2.83	3.40
	-1.48	-2.39	-2.03	-2.04	0.69	2.85	0.33	2.14	-4.13	0.41	-3.80	-3.99	0.45	-2.91	0.82	1.05
institutional risk proxies																
country risk	-3.81 ***	-0.90	-5.33 ***	-8.54 **	0.47	-0.51	-1.04	-1.38 *	-0.72	-1.40 ***	-1.96 ***	-1.24 **	-0.83 ***	-2.38 ***	-4.55	-3.40
	-4.97	-1.32	-5.75	-2.57	1.25	-0.59	-1.07	-1.81	-1.28	-4.59	-6.97	-2.50	-2.87	-8.22	-1.61	-1.18
creditor rights	1.78	-9.07 ***	23.24 ***	-213.77 ***	4.10	-0.89	-2.14	11.54	6.51	13.03 ***	20.68 ***	9.61 **	8.10 ***	24.38 ***		7.99
	0.29	-2.85	3.54	-2.69	1.02	-0.09	-0.27	1.16	1.30	5.07	7.73	2.00	3.75	8.16		1.58
financial risk proxies																
currency risk dummy	-75.71 **	-21.97 **	-34.76 *	93.52	7.61	-19.65	13.68	9.52	-1.96	16.24 ***	13.86 ***	-9.82	9.16	9.40 *	166.76	-7.47
	-2.04	-2.00	-1.80	1.11	0.77	-0.75	0.83	0.55	-0.25	3.42	3.05	-1.01	1.43	1.87	1.22	-0.61
ln(tranche maturity)	-7.28	-4.21	-1.54	3.92	15.16 ***	8.62	-17.29 *	-12.67	13.73 **	4.00	7.37 **	11.42 *	-2.91	6.36 *	-15.72	4.69
	-0.59	-0.96	-0.13	0.61	3.83	0.58	-1.82	-1.21	2.48	1.30	2.27	1.95	-0.72	1.91	-1.38	0.66
ln(real tranche size)	-17.09 **	-9.08 ***	-8.81 *	-17.55 ***	-3.85 *	23.18 ***	21.58 ***	27.39 ***	-1.36	0.60	0.00	3.40	2.29 *	3.79 **	-3.43	2.72
	-2.46	-4.15	-1.90	-4.07	-1.94	3.84	4.78	5.37	-0.62	0.42	0.00	1.47	1.76	2.39	-1.07	1.24
guarantee dummy	-34.27 ***	-4.70	-23.13 **	-2.89	3.87	2.78	-4.90	-0.46	-6.10	-1.69	-1.28	-2.61	-8.08	-0.19	-8.47	-65.00 ***
	-2.71	-0.44	-2.06	-0.08	0.20	0.19	-0.28	-0.03	-0.91	-0.33	-0.27	-0.39	-1.16	-0.04	-0.47	-3.53
rated tranche	-41.88 *	37.03 ***	63.61	22.85	19.11	77.40 ***	119.96 ***	3.67	-11.64	-55.14 ***	-16.23 *	4.49	17.72	-39.27 ***	8.96	25.13 *
	-1.65	2.81	0.82	1.41	1.50	3.36	2.87	0.14	-1.16	-2.64	-1.86	0.17	1.53	-3.65	0.64	1.68
operational risk dummies																
secured tranche	51.50 ***	-11.36	14.05	28.98 *	-14.59 *	24.49	21.41	31.93 **	6.20	-4.30	4.20	11.26	-1.90	6.13	27.21 **	4.58
	4.06	-1.32	1.50	1.87	-1.73	1.57	1.40	2.28	0.85	-0.97	0.93	1.63	-0.36	1.25	2.11	0.27
tranche with general covenants	42.01	62.29 ***	92.47 ***	-0.89	63.60 ***	71.93 **	8.34		57.77 ***	75.24 ***		20.10	42.69 ***		8.45	43.02 **
	0.75	3.22	4.86	-0.04	2.89	2.12	0.12		3.59	5.07		1.16	3.48		0.77	2.16
tranche with financial covenants	-17.42	-2.67	-20.10	15.49	6.38	42.91 **	14.34	44.47 **	-23.73	-9.76	-17.51 **	-17.40	-0.39	-7.36	-1.33	22.02
	-0.89	-0.23	-1.27	0.76	0.80	2.29	0.78	2.38	-1.63	-1.56	-2.54	-1.47	-0.05	-0.89	-0.11	1.08
tranches with operational contracts	-7.44	16.58 *	6.83	35.69 **	13.51	-90.25 ***	-34.74	-64.35 **	-9.29	18.57 **	15.90 *	1.27	2.77	2.66	20.11	-5.93
	-0.28	1.86	0.40	2.37	1.17	-2.67	-1.24	-2.17	-0.59	2.13	1.72	0.08	0.32	0.23	1.34	-0.64
tranches with sponsors as counterparty	-67.88 **	11.15	-28.24	4.17	-54.30 ***	-4.14	-39.11	-62.44	9.98	-10.16	-8.05	-14.40	-9.40	-14.51	-6.08	5.74
	-2.44	0.59	-1.53	0.13	-4.94	-0.05	-1.04	-1.33	0.23	-1.00	-0.76	-0.31	-1.01	-1.52	-0.70	0.47
industry risk dummies																
corporate	20.35	15.41	16.01	13.63	-51.17	19.18	21.91	-6.12	23.73 *	25.04 **	8.84	21.18	7.91	6.42	-43.17 *	-42.42
	0.31	0.75	0.27	0.88	-1.47	0.51	1.03	-0.15	1.65	2.34	0.95	1.34	0.43	0.74	-1.67	-1.46
utilities	19.75	-19.29	-11.38	-44.73 **	-44.61	15.81	46.15	-1.85	31.23 **	25.12 **	7.80	32.97 **	10.67	11.54	-34.30	-30.78
	0.28	-0.92	-0.19	-2.56	-1.27	0.38	1.48	-0.04	2.04	2.04	0.75	1.97	0.55	1.13	-1.57	-1.19
media & telecommunication	8.25	60.05 **	33.71	63.18 **	-43.84	12.86	32.03	-7.09	12.33	42.10 **	16.35	18.20	7.05	21.63	-64.33 **	-39.94 **
	0.12	2.30	0.54	2.42	-1.17	0.28	0.76	-0.14	0.67	2.37	0.94	0.99	0.36	1.23	-2.29	-2.61
government	34.02	13.87	72.74	-8.33	-46.97	-16.69	-48.65	-26.72	21.69	32.78 *	9.73	43.04	-2.12	2.20		-88.72 **
	0.47	0.42	0.94	-0.42	-1.32	-0.29	-1.12	-0.37	1.13	1.83	0.69	1.53	-0.09	0.16		-2.51
unknown	12.14	28.77	-1.35	14.92		-39.89		-36.62	31.36	17.22	9.41	30.87	-0.34	2.18	-47.03 **	-56.21
	0.18	1.19	-0.02	0.78		-0.93		-0.84	1.55	1.57	0.78	1.52	-0.02	0.19	-2.22	-1.49
Log pseudolikelihood						-1126.3	-1236.2	-1730.0	-3001.2	-2852.6	-4976.3	-3425.7	-4014.5	-5246.2	-665.1	-596.9
adjusted / pseudo R^2	0.204	0.107	0.178	0.244	0.163	0.043	0.024	0.029	0.011	0.025	0.026	0.012	0.009	0.023	0.038	0.026
number of observations	874	1606	1219	518	375	570	607	977	569	606	977	626	764	984	126	121
number of left-censored observations						411	432	741	22	52	47	3	11	14	0	0

Table 7 continued: Regional Differences in the Lead Arranger's Position

See notes to Tables 4 and 5. Each regression uses the maximum number of observations for which the regression variables are available. The number of observations for Africa, Eastern Europe and CIS, Latin America and the Carribean, and Middle East and Turkey are too few to allow for a separate regression analysis. For Asia, North America and Western Europe, regressions are only reported when at least 100 observations are available. Variables are excluded from the regression if they do not vary over the sample or if they cause collinearity problems.

dependent variable	spread					arranger upfront fee			non-arranger upfront fee			total upfront fee				
region	developing countries	developed countries	Asia	North America	Western Europe	developing countries	developed countries	Asia	developing countries	developed countries	Asia	developing countries	developed countries	Asia	North America	Western Europe
intercept	832.97 ***	428.56 ***	698.16 ***	1555.11 ***	89.06 *	-427.95 ***	-1236.31 ***	-422.27 ***	71.90 *	49.30	94.07 ***	24.41	65.01	76.08 **	578.35 *	299.21
	4.02	5.84	4.19	5.21	1.66	-3.13		-3.64	1.74	1.24	3.29	0.54	1.51	2.39	1.96	1.02
lead arranger prestige																
high-prestige dummy	-14.12	-8.67	-14.11	-18.34	13.67	43.27 ***	0.49	17.49	-26.90 ***	-5.12	-17.47 ***	-22.27 ***	-1.11	-12.49 **	3.97	10.81
	-0.77	-1.22	-0.80	-1.50	1.65	2.76	0.03	1.18	-3.59	-1.05	-3.71	-3.21	-0.21	-2.53	0.46	0.87
institutional risk proxies																
country risk	-3.77 ***	-0.95	-5.35 ***	-8.87 ***	0.48	-0.41	-1.02	-1.38 *	-0.76	-1.34 ***	-1.96 ***	-1.25 **	-0.81 ***	-2.38 ***	-4.08	-3.33
	-5.04	-1.39	-5.82	-2.70	1.32	-0.48	-1.04	-1.82	-1.37	-4.25	-6.98	-2.57	-2.71	-8.19	-1.62	-1.17
creditor rights	2.40	-9.37 ***	22.66 **	-231.25 ***	3.00	-2.98	-2.16	11.56	7.43	13.06 ***	20.25 ***	10.36 **	8.17 ***	24.09 ***		7.54
	0.38	-2.97	3.52	-2.93	0.81	-0.31	-0.27	1.17	1.55	5.02	7.67	2.21	3.71	8.11		1.40
financial risk proxies																
currency risk dummy	-77.60 **	-22.85 **	-35.94 *	95.05	5.06	-20.88	13.92	9.54	-2.38	16.35 ***	14.14 ***	-10.89	9.27	9.57 *	167.65	-6.63
	-2.09	-2.06	-1.86	1.12	0.50	-0.79	0.85	0.55	-0.30	3.44	3.13	-1.10	1.44	1.90	1.21	-0.53
ln(tranche maturity)	-6.85	-4.26	-0.74	3.70	15.28 ***	8.47	-17.49 *	-14.20	13.43 **	3.78	7.69 **	11.31 *	-2.96	6.68 *	-15.28	5.33
	-0.55	-0.97	-0.06	0.58	3.94	0.59	-1.84	-1.35	2.42	1.21	2.35	1.91	-0.73	1.96	-1.37	0.83
ln(real tranche size)	-18.05 ***	-9.72 ***	-10.05 **	-18.05 ***	-3.98 **	23.58 ***	21.80 ***	28.45 ***	-1.63	0.75	-0.20	2.86	2.41 *	3.57 **	-3.09	2.62
	-2.65	-4.48	-2.24	-4.19	-1.99	3.97	4.84	5.62	-0.75	0.53	-0.14	1.26	1.87	2.26	-1.04	1.14
guarantee dummy	-33.46 ***	-5.34	-23.99 **	-3.18	4.44	0.50	-4.91	-0.94	-4.84	-1.88	-1.24	-1.26	-8.05	-0.13	-8.74	-61.44 ***
	-2.60	-0.50	-2.15	-0.09	0.23	0.03	-0.28	-0.07	-0.73	-0.36	-0.26	-0.19	-1.15	-0.03	-0.49	-3.52
rated tranche	-44.48 *	35.20 ***	58.68	21.64	19.71	77.94 ***	119.12 ***	-2.23	-11.72	-56.12 ***	-7.33	1.94	17.93	-33.34 ***	9.63	24.52
	-1.78	2.72	0.78	1.35	1.57	3.23	2.85	-0.08	-1.12	-2.65	-0.80	0.07	1.54	-3.26	0.66	1.54
operational risk dummies																
secured tranche	53.17 ***	-10.95	14.89	30.65 **	-14.01 *	22.41	21.31	30.60 **	7.89	-4.54	4.94	13.04 *	-1.88	6.71	26.41 **	4.00
	4.33	-1.27	1.60	1.98	-1.66	1.46	1.39	2.19	1.12	-1.03	1.10	1.94	-0.36	1.38	2.09	0.25
tranche with general covenants	42.12	64.01 ***	92.75 ***	-0.53	63.58 ***	65.27 *	7.64		60.34 ***	72.90 ***		21.18	42.48 ***		8.53	45.31 **
	0.77	3.30	4.53	-0.02	2.95	1.87	0.11		3.47	4.71		1.25	3.46		0.78	2.12
tranche with financial covenants	-16.59	-2.53	-20.80	15.78	6.86	35.92 *	14.07	44.44 **	-20.34	-10.19	-17.63 ***	-14.90	-0.63	-7.46	-1.20	22.28
	-0.83	-0.22	-1.33	0.78	0.84	1.88	0.77	2.39	-1.50	-1.64	-2.62	-1.34	-0.08	-0.92	-0.10	1.13
tranches with operational contracts	-8.66	18.03 **	7.89	35.07 **	15.89	-81.06 **	-35.05	-64.46 **	-14.54	18.07 **	16.23 *	0.20	2.66	2.86	21.38	-5.70
	-0.33	2.02	0.46	2.36	1.43	-2.47	-1.25	-2.20	-0.87	2.08	1.78	0.01	0.31	0.24	1.37	-0.62
tranches with sponsors as counterparty	-70.18 **	11.30	-30.08	4.06	-55.14 ***	-4.16	-38.99	-58.11	8.22	-10.22	-11.07	-17.70	-9.40	-16.90 *	-6.89	5.84
	-2.44	0.59	-1.57	0.13	-4.45	-0.05	-1.05	-1.29	0.17	-1.01	-1.08	-0.35	-1.03	-1.77	-0.81	0.47
industry risk dummies																
corporate	20.78	14.39	18.63	8.41	-48.76	13.50	22.30	-8.36	25.51 *	27.67 **	9.94	22.72	7.56	7.32	-41.70	-37.53
	0.31	0.70	0.31	0.53	-1.51	0.36	1.05	-0.20	1.78	2.59	1.01	1.47	0.40	0.80	-1.65	-1.35
utilities	19.75	-22.66	-12.64	-51.51 ***	-42.15	8.05	47.35	-2.58	33.32 **	28.86 **	9.01	34.07 **	11.03	12.23	-29.39	-26.34
	0.28	-1.08	-0.20	-3.12	-1.29	0.20	1.54	-0.06	2.17	2.34	0.83	2.08	0.56	1.14	-1.50	-0.99
media & telecommunication	5.00	55.95 **	29.31	56.54 **	-39.48	17.42	33.64	-6.62	8.56	47.29 ***	17.62	14.65	7.51	22.14	-61.21 **	-34.53 **
	0.07	2.14	0.46	2.19	-1.11	0.37	0.80	-0.13	0.45	2.62	0.99	0.80	0.37	1.24	-2.35	-2.25
government	36.07	14.02	75.60	-12.18	-44.17	-19.32	-48.50	-28.37	20.68	34.34 *	9.38	42.76	-3.02	2.06		-82.73 **
	0.50	0.42	0.97	-0.64	-1.32	-0.34	-1.13	-0.39	1.12	1.90	0.66	1.53	-0.12	0.15		-2.43
unknown	12.45	27.72	1.06	8.65		-46.49	-297.19 **	-39.44	33.90 *	19.46 *	11.03	33.38	-0.94	3.41	-45.19 **	-52.82
	0.18	1.14	0.02	0.45		-1.09	-2.46	-0.91	1.66	1.77	0.89	1.64	-0.05	0.29	-2.16	-1.45
Log pseudolikelihood						-1126.1	96.4	-1731.8	-3002.3	-2851.8	-4975.5	-3429.9	-4014.6	-5246.8	-665.4	-596.6
adjusted / pseudo R2	0.201	0.104	0.172	0.242	0.172	0.043	0.024	0.028	0.011	0.025	0.026	0.010	0.009	0.023	0.038	0.026
number of observations	874	1606	1219	518	375	570	607	977	569	606	977	626	764	984	126	121
number of left-censored observations						411	432	741	22	52	47	3	11	14	0	0

Table 8: Impact of the Asian Crisis on the Lead Arranger's Position

See notes to Tables 4 and 5. Each regression uses the maximum number of observations for which the regression variables are available. Variables are excluded from the regression if they do not vary over the sample or if they cause collinearity problems.

dependent variable	spread			arranger upfront fee			non-arranger upfront fee			total upfront fee		
period	pre-crisis	crisis	post-crisis	pre-crisis	crisis	post-crisis	pre-crisis	crisis	post-crisis	pre-crisis	crisis	post-crisis
independent variables												
intercept	483.28 ***	983.36 ***	482.91 ***	-564.91 ***	-806.97 ***	-333.80 ***	133.00 ***	107.84	6.49	126.41 ***	-21.05	-40.93
	6.08	2.68	6.87	-3.78	-3.31	-3.12	4.33	1.30	0.17	3.63	-0.33	-1.16
lead arranger prestige												
average 3-year prior market share	-3.39	7.07	-11.41 ***	2.03	31.99 ***	0.00	-4.21 ***	-8.52 *	-4.93 **	-4.38 ***	-0.46	-5.93 ***
	-1.34	0.50	-3.79	0.36	3.36	0.00	-3.01	-1.73	-2.21	-2.63	-0.14	-2.73
institutional risk proxies												
country risk	-1.99 ***	-2.90 *	-2.59 ***	-0.32	-3.91 ***	-0.25	-1.87 ***	-1.60 **	-0.73 **	-1.78 ***	-1.21 ***	-0.42
	-3.67	-1.79	-5.68	-0.34	-3.01	-0.41	-6.87	-2.43	-2.13	-5.72	-2.63	-1.28
creditor rights	5.16	-15.67	-11.05 ***	27.90 **	11.23	-3.39	16.82 ***	23.03 **	5.13	12.94 ***	4.96	7.59 **
	1.09	-1.65	-3.00	2.34	0.53	-0.45	5.34	2.49	1.36	4.20	1.00	2.35
financial risk proxies												
currency risk dummy	-20.86	-38.97	-48.38 ***	12.37	27.71	35.47 *	-3.94	37.57 ***	23.33 **	-17.14 **	20.97 **	28.82 **
	-1.45	-0.89	-2.91	0.54	0.87	1.79	-0.66	3.00	2.46	-2.59	2.13	2.50
ln(tranche maturity)	18.18 **	-18.15	-10.36 **	7.59	4.37	-13.20	6.81 *	0.52	4.79	8.81 *	3.37	-3.40
	2.01	-1.03	-2.13	0.45	0.18	-1.57	1.79	0.06	1.03	1.79	0.47	-0.64
ln(real tranche size)	-14.25 ***	-27.51 **	-7.75 ***	22.13 ***	44.30 ***	17.43 ***	-0.05	-0.72	-0.69	1.37	4.47	3.26 **
	-3.56	-2.42	-2.69	4.02	3.48	3.69	-0.03	-0.16	-0.36	0.73	1.41	1.98
guarantee dummy	-8.51	-26.10	-35.90 ***	-6.26	54.76	3.56	0.62	-17.54	-7.57	-3.22	6.88	-16.90 *
	-0.71	-0.60	-3.05	-0.38	1.43	0.21	0.12	-1.32	-0.79	-0.55	0.50	-1.66
rated tranche	53.32 **	85.89 **	5.13			69.63 ***		-10.85	-35.94 **	42.15	22.30 *	15.28
	2.15	2.22	0.41			2.73		-0.72	-2.56	0.69	1.80	0.96
operational risk dummies												
secured tranche	31.77 ***	43.57 **	-6.83	10.68	103.37 ***	29.89 *	9.74 **		-2.77	3.80	10.10	7.41
	3.59	2.01	-0.59	0.61	2.85	1.96	2.03		-0.36	0.66	0.83	0.97
tranche with general covenants	1.77	99.46	81.23 ***			37.77		146.80 ***	49.64 **	58.70 *	33.86	60.00 ***
	0.07	1.33	3.15			0.71		2.67	2.54	1.86	1.44	2.81
tranche with financial covenants	-2.83	-48.29	-11.22	-54.96	-3.80	-4.44	-52.25 ***	-20.61	-11.88	-49.18 ***	-9.17	-6.44
	-0.12	-0.81	-1.05	-0.95	-0.09	-0.27	-4.73	-0.85	-1.55	-3.38	-0.54	-0.79
tranches with operational contracts		12.50	15.34		-37.44	-37.07		-2.28	9.26		17.01	-1.92
		0.58	1.36		-1.10	-1.40		-0.15	0.77		1.29	-0.21
tranches with sponsors as counterparty		-8.77	3.14			-45.14		-31.03	4.15		-13.57	-8.61
		-0.22	0.22			-1.33		-1.50	0.23		-0.76	-0.62
industry risk dummies												
corporate	3.00	2.45	125.82 ***	-23.73	53.34	87.69 *	5.96	29.73	73.31 ***	3.51	31.66	81.35 ***
	0.05	0.02	2.83	-0.58	1.30	1.66	0.65	1.23	4.98	0.39	1.63	6.27
utilities	4.46	-28.32	96.70 **	-44.80	23.26	109.45 *	1.69	34.56	80.58 ***	-0.45	42.91 **	93.50 ***
	0.08	-0.22	2.15	-0.89	0.52	1.96	0.17	1.52	4.53	-0.05	2.13	5.83
media & telecommunication	19.82	15.46	190.77 ***	-54.69	31.74	99.58 *	13.04	26.50	62.98 ***	4.82	36.03 *	67.62 ***
	0.35	0.12	3.72	-0.88	0.45	1.67	0.63	0.91	3.07	0.34	1.69	3.88
government	-30.14	-18.90	125.77 **	3.47		-0.96	1.60	67.62 ***	77.11 ***	31.12	64.98 **	67.19 ***
	-0.48	-0.14	2.48	0.05		-0.02	0.11	2.71	4.56	0.80	1.99	4.11
unknown	3.27	6.75	134.21 ***	-38.01		8.86	1.54	52.23	71.73 ***	1.49	55.48 *	66.46 ***
	0.06	0.05	2.78	-0.87		0.15	0.13	1.52	4.12	0.11	1.86	4.57
Log pseudolikelihood				-806.0	-258.7	-1254.9	-2920.7	-792.8	-2168.9	-3308.1	-1270.8	-2853.7
adjusted / pseudo R^2	0.111	0.255	0.143	0.023	0.116	0.032	0.017	0.041	0.019	0.015	0.027	0.014
number of observations	822	380	1278	559	154	464	559	154	462	615	239	536
number of left-censored observations				452	116	275	5	5	64	2	0	12

Table 8 continued: Impact of the Asian Crisis on the Lead Arranger's Position

See notes to Tables 4 and 5. Each regression uses the maximum number of observations for which the regression variables are available. Variables are excluded from the regression if they do not vary over the sample or if they cause collinearity problems.

dependent variable	spread			arranger upfront fee			non-arranger upfront fee			total upfront fee		
period	pre-crisis	crisis	post-crisis	pre-crisis	crisis	post-crisis	pre-crisis	crisis	post-crisis	pre-crisis	crisis	post-crisis
independent variables												
intercept	492.27 ***	987.39 ***	492.52 ***	-585.06 ***	-755.80 ***	-328.81 ***	138.28 ***	88.34	3.70	133.45 ***	-19.78	-39.42
	6.16	2.65	7.05	-3.90	-3.39	-3.07	4.51	1.10	0.10	3.79	-0.31	-1.08
lead arranger prestige												
high-prestige dummy	-1.87	31.97	-26.12 ***	-17.37	86.25 ***	13.94	-11.44 **	-18.58	-21.07 ***	-9.86 *	4.32	-20.17 ***
	-0.22	0.81	-3.15	-0.83	2.98	0.89	-2.49	-1.43	-2.65	-1.93	0.45	-2.81
institutional risk proxies												
country risk	-2.05 ***	-2.92 *	-2.58 ***	-0.25	-4.12 ***	-0.21	-1.88 ***	-1.52 **	-0.78 **	-1.81 ***	-1.22 ***	-0.44
	-3.72	-1.76	-5.66	-0.26	-3.24	-0.34	-6.87	-2.35	-2.40	-5.66	-2.63	-1.39
creditor rights	5.36	-14.28 *	-10.84 ***	27.27 **	26.54	-4.28	16.25 ***	20.36 **	6.57 *	12.62 ***	5.01	8.53 ***
	1.13	-1.66	-2.95	2.31	1.30	-0.56	5.21	2.31	1.82	4.10	1.05	2.64
financial risk proxies												
currency risk dummy	-20.58	-42.31	-50.28 ***	13.13	28.82	33.23	-3.70	36.88 ***	24.26 ***	-16.76 **	20.14 **	28.93 **
	-1.43	-0.93	-2.98	0.58	0.90	1.64	-0.62	3.12	2.63	-2.52	2.15	2.45
ln(tranche maturity)	18.16 **	-17.67	-10.60 **	7.45	-0.07	-13.19	6.97 *	2.02	4.81	9.08 *	3.73	-3.17
	2.01	-0.97	-2.15	0.45	0.00	-1.57	1.81	0.24	1.03	1.83	0.50	-0.60
ln(real tranche size)	-14.76 ***	-27.07 ***	-8.81 ***	23.23 ***	43.76 ***	17.12 ***	-0.45	-1.68	-0.76	0.88	4.15	2.84 *
	-3.74	-2.72	-3.09	4.30	3.82	3.61	-0.26	-0.39	-0.39	0.48	1.29	1.71
guarantee dummy	-8.34	-26.41	-35.88 ***	-7.65	42.36	3.02	0.63	-16.09	-7.61	-3.18	6.40	-16.68 *
	-0.69	-0.60	-3.04	-0.46	1.16	0.18	0.12	-1.25	-0.83	-0.54	0.47	-1.69
rated tranche	48.61 **	80.50 **	2.61			69.77 ***			-35.49 **	38.43	21.77 *	15.05
	1.99	2.22	0.22			2.65			-2.41	0.63	1.86	0.95
operational risk dummies												
secured tranche	32.73 ***	41.06 **	-6.01	8.95	88.92 **	30.32 **	10.65 **	-8.74	-3.39	4.86	9.61	6.75
	3.70	2.12	-0.52	0.52	2.56	2.01	2.21	-0.57	-0.45	0.85	0.80	0.90
tranche with general covenants	6.63	102.67	83.83 ***			38.56		129.26 **	48.58 ***	61.08 **	33.63	62.03 ***
	0.25	1.43	3.24			0.72		2.40	2.64	1.99	1.48	2.91
tranche with financial covenants	-2.01	-49.99	-11.04	-60.83	-24.56	-3.91	-49.49 ***	-14.21	-11.82	-47.27 ***	-8.74	-6.45
	-0.08	-0.85	-1.03	-1.05	-0.54	-0.24	-4.49	-0.62	-1.61	-3.43	-0.52	-0.82
tranches with operational contracts		11.98	18.42 *		-36.22	-34.66		-2.27	8.32		16.22	-1.99
		0.57	1.68		-1.12	-1.33		-0.15	0.69		1.24	-0.20
tranches with sponsors as counterparty		-5.57	3.10			-45.33		-33.18	1.85		-12.64	-11.09
		-0.14	0.21			-1.30		-1.64	0.10		-0.71	-0.74
industry risk dummies												
corporate	2.31	-8.80	123.79 ***	-19.61	50.62	81.86	5.98	52.44 **	77.07 ***	2.95	34.74 *	83.56 ***
	0.04	-0.07	2.84	-0.48	1.16	1.54	0.63	2.36	5.63	0.32	1.80	7.02
utilities	1.62	-36.89	91.95 **	-35.14	29.13	100.19 *	1.18	53.78 **	85.52 ***	-2.36	45.73 **	95.51 ***
	0.03	-0.30	2.09	-0.70	0.66	1.80	0.12	2.56	5.14	-0.23	2.29	6.61
media & telecommunication	15.75	6.16	188.28 ***	-43.42	30.84	94.89	9.74	47.13	66.38 ***	0.93	37.97 *	70.56 ***
	0.28	0.05	3.73	-0.71	0.42	1.59	0.49	1.60	3.32	0.07	1.77	4.40
government	-30.44	-22.64	127.48 **	5.34		-4.68	-0.31	84.17 ***	78.40 ***	29.96	67.40 **	67.58 ***
	-0.48	-0.17	2.54	0.08		-0.08	-0.02	5.19	4.93	0.76	2.10	4.44
unknown	2.49	-4.09	130.99 ***	-32.57		5.63	1.65	76.66 *	73.49 ***	1.04	58.89 *	68.21 ***
	0.04	-0.03	2.74	-0.75		0.10	0.14	1.95	4.46	0.08	1.83	4.99
Log pseudolikelihood				-805.5	-259.7	-1254.1	-2922.3	-793.9	-2165.0	-3310.4	-1270.6	-2852.4
adjusted / pseudo R^2	0.109	0.258	0.136	0.024	0.112	0.033	0.017	0.039	0.021	0.014	0.027	0.015
number of observations	822	380	1278	615	239	536	559	154	464	559	154	462
number of left-censored observations				2	0	12	452	116	275	5	5	64

Table A-1: Definitions of Variables

Variable	Description	Source
spread	Spread over the base rate in basis point	Dealscan
total upfront fee	Overall upfront fee as reported by Dealscan, missing values have been replaced from 'tiered upfront fee' field as far as possible.	Dealscan
arranger upfront fee	Maximum upfront fee in basis points among all types of arranger fees as reported in Dealscan's tiered upfront fee field. These include arangement fee, co-arrangement fee or lead arrangement fee.	Dealscan
non-arranger upfront fee	Maximum upfront fees in basis points among all types of non-arranger fees as reported in Dealscan's tiered upfront fee fields. These include participation fee, underwriting fee, management fee, lead management fee, front-end fee, etc.	Dealscan
lead arranger market share	The annual market share of each arranger is obtained from annual PF league tables where the full amount of a tranche is allocated to each lead arranger. Market shares are calculated as the individual lead arranger's amount in percent of the total amount of all lead arrangers in the league table. Based on the year of loan signing, 1-, 3-, 5-, and 7-year prior average market shares are calculated. For loan tranches with multiple lead arrangers, both the sum as well as the average of all individual lead arranger market shares is used. Market shares are calculated by bank group. Mergers are taken into account and consequently the relevant market shares depend on the year of loan signing.	Dealscan
high prestige dummy	Dummy equal to 1 if the market share of the lead arranger(s) falls into the top 25% quartile. This dummy is based on the full sample of 4,122 tranches.	Dealscan
country risk	Country risk score ranging from 0 for the country with the higest risk to 100 for the country with the lowest risk. The country risk score is based on political risk (25%), economic performance (25%), debt indicators (10%), default / rescheduled debt (10%), credit ratings (10%), bank finance access (5%), short term finance access (5%), capital markets access (5%). and forfaiting (5%). Weights of each components are given in parentheses.	Euromoney
creditor rights	An index aggregating creditor rights, following La Porta and others (1998), provided by Djankov, McLiesh and Shleifer. A score of one is assigned when each of the following rights of secured lenders are defined in laws and regulations: First, there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization. Second, secured creditors are able to seize their collateral after the reorganization petition is approved, i.e. there is no "automatic stay" or "asset freeze." Third, secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers. Finally, if management does not retain administration of its property pending the resolution of the reorganization. The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights) and is constructed as at January for every year from 1978 to 2003. As the creditor rights index is relatively stable over time, loans signed in 2004 and 2005 are assigned the creditor rights index for 2003. Countries without a credit rights score have been assigned a value of 0.	Djankov, McLiesh, Shleifer "Private credit to 129 countries", available at http://www.andrei-shleifer.com/data.html
tranche size	Real size of the loan tranche converted into US dollar. To facilitate the comparison of loan signed in different years, the loan size is converted into real values using the IFS's GDP deflator for the US (USY99BIRH).	Dealscan
deal size	Real size of all tranches belonging to the same project (same borrower, same loan signing date) converted into US dollar. To facilitate the comparison of loans signed in different years, the deal size is converted into real values using the IFS's GDP deflator for the US (USY99BIRH).	Dealscan
currency risk	Dummy equal to 1 for tranches that are denominated in a currency different from the currency in the borrower's home country.	Dealscan
maturity	Life of the tranche in months	Dealscan
guarantee	Dummy equal to 1 for tranches that are supported by a guarantee.	Dealscan
rating	Loan rating based on the S&P and Moody's bank loan rating at close. If missing, S&P and Moody's senior debt rating at close are used. If both rating are available, the average rating is calculated. For the descriptive statistics, the rating is converted as follows: AAA+=Aaa1=1, AAA=Aaa2=2, and so on until D=28. In the regressions a dummy is used which is set to 1 if at least one rating exists. Additionally, a dummy variable is coded as 1 if any rating exists.	Dealscan
leverage	Debt-to-equity ratio of the project calculated as (loans+bonds)/equity	ProjectWare
secured tranche dummy	Dummy equal to 1 for tranches that are secured.	Dealscan
general covenants dummy	Dummy equal to 1 for tranches that have general covenants.	Dealscan
financial covenants dummy	Dummy equal to 1 for tranches that have financial covenants.	Dealscan
construction contract	Operational risk management contract dummy. Dummy equal to 1 if construction contract exists.	ProjectWare
EPC construction contract	Operational risk management contract dummy. Dummy equal to 1 if EPC contstruction contract exists.	ProjectWare

Table A-1 continued: Definitions of Variables

Variable	Description	Source
off-take contract	Operational risk management contract dummy. Dummy equal to 1 if off-take contract exists.	ProjectWare
supply contract	Operational risk management contract dummy. Dummy equal to 1 if supply contract exists.	ProjectWare
equipment contract	Operational risk management contract dummy. Dummy equal to 1 if equipment contract exists.	ProjectWare
O&M contract	Operational risk management contract dummy. Dummy equal to 1 if O&M contract exists.	ProjectWare
operational contract dummy	Dummy equal to 1 if at least one of the above six contracts exists.	ProjectWare
sponsors as SPV countrerparties	Dummy equal to 1 for projects where sponsors are counterparties in the special purpose vehicle company.	ProjectWare
broad industry group dummies	Dummies equal to 1 if project belongs to a certain industry. For each of the following industry groups, a dummy is created: Corporate, government, media & telecommunication, utilities, unknown industry. The control group includes banks and financial services.	Dealscan
developing country dummy	Low, lower-middle and upper-middle income countries as defined by the World Bank are considered developing countries. Upper income countries are considered to be developed countries. Details can be found at the following website. We use the categorization as posted in July 2006. http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20420458~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html	World Bank
PF global market volume	Real size of all loan tranches signed in a given year converted into US dollar. To facilitate the comparison of loan signed in different years, the loan size is converted into real values using the IFS's GDP deflator for the US (USY99BIRH). In the regressions, the PF global market volume is measured in the year of loan signing.	Dealscan
number of lenders	Number of lenders in the tranche's syndicate. This includes banks in all roles. The defining characteristic is the fact that the bank lends to the project.	Dealscan
number of lead arranger	Number of lead arrangers in the tranche's syndicate. Banks are lead arrangers when they are listed in Dealscan's field 'lead arranger'.	Dealscan
year	Year in which the tranche is signed.	Dealscan