IMF Working Paper

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Evidence from cross-border syndicated bank lending

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Borrowing costs and the role of multilateral development banks: Evidence from cross-border syndicated bank lending[1]

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Abstract

Cross-border bank lending is a growing source of external finance in developing countries and could play a key role for infrastructure financing. This paper looks at the role of multilateral development banks (MDBs) on the terms of syndicated loan deals, focusing on loan pricing. The results show that MDBs' participation is associated with higher borrowing costs and longer maturities---signaling a greater willingness to finance high risk projects which may not be financed by the private sector---but it is also associated with lower spreads for riskier borrowers. Overall, our findings suggest that MDBs could crowd in private investment in developing countries through risk mitigation.

Contents

1 Introduction[1]

Long term financial flows to developing countries have been partly limited by high risk perception and the resulting high cost of borrowing (Collier and Mayer, 2014; Collier and Cust, 2015; Hayakawa, Kimura and Lee, 2013; World Bank, 2015). An average developing country in sub-Saharan Africa, for instance, pays 300 basis points more than an average emerging market country in the bond market (Gueye and Sy, 2015).[2] Multilateral development banks (MDBs) can play two key roles in reducing such high risk perception, and thereby, facilitating long term financial flows. First, MDBs can de-risk investment by signaling the profitability of projects allocating their own money in projects and loan syndicates, as well as taking a subordinate loan position and extending their *de facto* preferred creditor status (Rodrik, 1995; Hagen, 2009; Hainz and Kleimeier, 2012; Chelsky, Morel and Kabir, 2013; Humphrey and Michaelowa, 2013; Humphrey, 2015; Pereira dos Santos and Kearney, 2018). Second, de-risking could be the result of MDBs' informational advantages and strong monitoring capacity—without which private lenders are reluctant to invest in projects that are deemed as too risky (Arezki, Bolton, Peters, Samama and Stiglitz, 2017). More generally, even though the largest share of lending to developing countries is provided by the private sector, international financial institutions—and especially MDBs—are a key player in development finance, especially in light of the 2030 Agenda for Sustainable Development and the financing needs for infrastructure investment (United Nations, 2015; International Monetary Fund, 2017).[3]

In this paper, we look at the de-risking role of MDBs using loan-level data on cross-border syndicated lending to emerging and developing countries during the period 1994-2014. Specifically, we address two interrelated questions. First, does the presence of an MDB in a loan syndicate affect loan terms, especially loan pricing? Second, does the involvement of an MDB mitigates borrower's riskiness, translating into lower loan spreads?[4]

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[2]Similarly, Presbitero *et al.* (2016) show that, after controlling for several macroeconomic characteristics, sub-Saharan Africa countries are as likely as other developing economies to issue sovereign bonds, but they issue at a premium of more than 100 basis points.

[3]For an overview of the key functions of MDBs, see Griffith-Jones (2016).

[4]In this paper we focus on loan pricing, and we then look at loan maturity and size. Results on loan size can inform on the direct mobilization effect of MDBs, but not on the (larger) indirect one (see World Bank, 2017, for how to measure these effects). Broccolini, Lotti, Maffioli, Presbitero and Stucchi (2018) look more generally at the

We focus on cross-border syndicated lending since it is an important—and growing—source of external finance in many emerging and developing countries (Nini, 2004; Godlewski and Weill, 2008; Cortina *et al.*, 2018). Syndicated loans account for about one third of total cross-border lending between 1995 and 2012, on average (Cerutti *et al.*, 2015), and the size of the market is comparable to that of the bond market (World Bank, 2015). As countries develop, an increasing number of firms—for instance, large exporters and firms in the infrastructure and mining sectors in developing countries—access the cross-border syndicated loan market to support their expansion strategies. These loans are increasingly important as a source of finance for firms across the world. From a borrower's perspective, syndicated loans are generally less costly than bond issuance and a series of bilateral loan agreements; provide access to finance to borrowers that are unable to tap into the bond markets because of their low creditworthiness; and could also help to diversify the sources of external finance, promoting financial deepening and stability (Santos and Winton, 2008; Godlewski and Weill, 2008). From the lenders' standpoint, the syndicated loan market allows banks to generate fee income, diversify credit exposures to particular borrowers, industries, or countries as well as to make loans in markets where they lack origination capabilities (Sufi, 2007b; Haselmann and Wachtel, 2011).

Although there is an emerging empirical literature on the pricing of syndicated loans, it is mostly limited to advanced and emerging economies and, to our knowledge, there is no study on the effect of MDBs' participation on loan pricing.[5] Most of the empirical literature analyzing the syndicated loans markets has been focused on advanced economies (see, for instance Dennis and Mullineaux, 2000; Carey and Nini, 2007; Sufi, 2007b; Bosch and Steffen, 2011; Lim, Minton and Weisbach, 2014; Berg, Saunders and Steffen, 2016). Studies on cross-border lending to emerging markets have mainly investigated the drivers of loan syndication and the role of international banks (Eichengreen and Mody, 2000; Godlewski and Weill, 2008). However, little is known on cross-border syndicated lending to developing countries. One exception is the analysis by Altunbaş and Gadanecz (2004), who evaluate the determinants of loan pricing in syndicated loans granted to borrowers in developing countries between 1993 and 2001. They find that riskier borrowers pay higher prices

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mobilization effects of MDBs and find that MDBs crowds in private investors. Specifically, using syndicated loan data at the country-industry-year level, they show that the number of loans, the size of private capital flows, the number of creditors and the average loan maturity increase in the years following the presence of syndicated loan with MDBs' participation.

[5]Hainz and Kleimeier (2012) document that the participation of MDBs in the loan syndicate helps to mitigate political risk. Broccolini, Lotti, Maffioli, Presbitero and Stucchi (2018) focus on the mobilization effects of MDBs. However, there is no evidence on the role of MDBs in mitigating borrower riskiness.

albeit macroeconomic conditions in borrowers' countries play a predominant role in explaining loan pricing.

Our analysis fills this gap by looking at how the syndicate structure—and in particular the presence of an MDB in the pool of lenders—affects loan terms. We use deal-level data on a large sample of about 17,000 syndicated loans granted to borrowers from 107 emerging and developing countries during the period 1994-2015. In addition to the loan-characteristics (price, amount, maturity, type of loan, etc.), the data includes loan-level information on lenders' name and location, number of banks in the syndicate, and type of bank (private bank or MDB), and borrowers' name, industry, location, and credit risk. We use a standard risk-return framework, as in Carey and Nini (2007) and Berg *et al.* (2016), to identify the drivers of syndicated loan terms and capture the role of MDBs. We also exploit loan-level information to test whether riskier borrowers pay a premium, and whether the participation of MDBs in the syndicate could mitigate the effect of borrower riskiness on loan pricing.

We have two main results. First, MDBs' participation is associated with higher borrowing costs and longer loan maturities. This finding indicates MDBs' higher capacity to lend at longer tenure than the private sector and—as long as spreads reflect borrower risk—the higher propensity of MDBs to finance risky projects—especially those in infrastructure—which may not be financed by the private sector. Second, the presence of an MDB in a syndicate is associated with a 37 percent reduction in the premium paid by risky borrowers, suggesting that MDBs play a de-risking role, by lowering borrowing costs for risky firms in developing countries. This effect could be the result of better information and monitoring of MDBs and the extension of their preferred creditor status. These results hold controlling for a large set of deal characteristics and absorbing time-varying unobserved heterogeneity at the industry and country level, as well as country×industry fixed effects. The results remain intact when considering different sub-samples and when using a matching technique, that compares loans with similar characteristics, but with and without an MDB in the loan syndicate.

This paper is organized as follows. Section 2 presents the data and the main stylized facts on the role of MDBs in the syndicated loan market. Section 3 discusses the analytical framework and the main results. Extensions and robustness tests are discussed in Section 4. Section 5 concludes.

2 Data and Descriptive Statistics

We collect data for more than 23,000 syndicated loans to emerging and developing countries origi-
nated during the 1994-2015 period from Dealogic Loan Analytics. A syndicate is formed by a pool
of banks organized by a lead bank (arranger), who usually has a bank relationship with the borrower
and has information on the borrower's creditworthiness. Then, to achieve the loan agreement, the
arranger presents the loan conditions (e.g., amount, price, maturity, currency, type of loan) to the
borrower and to the members of the syndicate. Each syndicate member has a separate claim on
the borrower, albeit there is only a single loan agreement. Syndicated loans are priced at LIBOR
plus a spread associated to borrower's credit risk. Participating banks charge several fees related to
the type of loans (i.e., utilization, participation, facility, and underwriting fees). Thus, spread and
fees capture different features of the lender-borrower relationship (Sufi, 2007b). We include only
loans with full information on the size of the deal, the number and nationality of banks involved and
some other basic deal characteristics. We restrict the sample to loan deals that involve borrower and
lenders from different countries, to capture cross-border flows. Finally, in line with existing studies
(e.g., Nini, 2004), we exclude loans to sovereigns, as they are likely driven by different factors com-
pared to loans to non-sovereign entities (private sector and public sector firms). For each loan, the
database offers detailed information on contractual characteristics: lender and borrower identity,
location, industry, loan type (credit line vs. term loan), size, maturity, interest rate, and currency.
After cleaning the raw data, we are left with 16,847 syndicated loans to 7,589 borrowers headquar-
tered in 107 emerging and developing countries from 1994 to 2014. When looking at pricing, the
sample is smaller because of data availability, as we have information on at most 7,571 deals (and
3,703 borrowers). Table A1 in the appendix presents the number of loan deals per country. The
sample is dominated by the large emerging markets (China, Brazil, India, Mexico, Indonesia, and
Turkey), but borrowers from low-income and lower middle-income countries represent more than 30
percent of the sample.[6]

Our baseline measure of loan pricing is the all-in interest rate spread, which includes the contract
spread over LIBOR plus any annual fee and any upfront fee. This choice allows us to approximate
the true economic value of the syndicated loan, as spread and fees capture different features of
the lender-borrower relationship (Altunbaş and Gadanecz, 2004; Carey and Nini, 2007; Ivashina,

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[6]Our results do not depend on one specific large country, nor on the presence of many countries with few loans,
see Section 4.2.

2009; Qian and Strahan, 2007; Berg *et al.*, 2016). However, we also report results for spread and fees separately to test whether the MDBs' participation affect separate components of loan pricing differently. The average all-in interest rate spread is 351 bps, but there is a significant variability, with the interquantile range going from 180 to 475 bps. Loan maturity is measured in months: the median loan has a 3-year maturity, while 27 percent of loans have a maturity of one year or shorter, and only 10 percent of loans are longer than 10 years. Loan size is measured in 2011 constant USD and includes only the cross-country components of the deal, i.e., excluding the amount financed by banks headquartered in the same country as the borrower. The median loan is of about USD 65 million, with a quarter of deals being smaller than USD 21 million and another quarter larger than USD 170 million (Table 1).

2.1 MDBs' Participation in Syndicated Loans: Stylized Facts

MDBs often participate in syndicated loans when the market could not provide funding because of high (perceived or actual) borrower's riskiness. MDBs' participation in a syndicated loan takes two forms: A/B loans and parallel loans. In the former, the MDB is the lender of record and holds a portion of the loan for its own account (the "A Loan"), and invites external participants to cover the remaining portion (the "B Loan"). In case of a parallel loan, the MDB and the external source each conclude separate loan agreements with the borrower, on a project designed and administered by the MDB. With the A/B arrangement, MDBs can extend their preferred creditor status to the participants in the syndicate and the reduced risk and transaction costs could translate into lower spreads (Chelsky, Morel and Kabir, 2013; Humphrey, 2015).[7] In our sample, about 10 percent of the loan deals (1,694) have at least one MDB in the syndicate. On average, 63% of those loans are A/B loans, implying that MDBs mainly operate as lead arrangers in the syndicated loan market. MDBs' participation is quite widespread across industries—with a concentration in agriculture and a lower presence in manufacturing and natural resources—and it is more common in lending to low- and lower middle-income countries than in lending to borrowers located in emerging markets. In our sample, the European Bank for Reconstruction and Development and the International Finance Corporation (part of the World Bank group) together make 56 percent of the sample, with the European Investment Bank, the International Bank for Reconstruction and Development, the

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[7]MDBs' loans—including A/B loans—are often excluded in debt restructuring even in crisis times. This is mainly because the IMF, the lender of last resort, has a non-tolerance policy on arrears to multilateral creditors (see International Monetary Fund, 2013).

African Development Bank, the Inter-American Development Bank, and the Asian Development Bank being other key players.

Table 2 compares syndicated loan characteristics with and without MDBs' participation. Loan deals with MDBs' participation are more expensive, have longer maturities and are smaller in size than those formed only by private banks. Figure 1, which plots the distribution of the all-in spread for loans with and without MDBs' participation, clearly shows that deals that involve MDBs have higher all-in spreads. On average, syndicated loans with MDBs' participation cost 96 bps more than loan syndicates formed solely by private institutions (see Table 2). This premium reflects an almost equal difference in the interest rate spread and in fees. The price difference is partly the reflection of significant differences in maturity, which is 32 months longer for loan deals that involve MDBs, and loan size, as deals with MDBs' participation are, on average, smaller by about USD 28 million.

As these differences could reflect a number of differences in loan and borrower characteristics across the sample of deals, in the following analysis we look at these relationships in a multivariate setting and with a matching approach, to compare deals as similar as possible but that differ only in the presence of MDBs.

2.2   Macro Trends

The value of cross-border syndicated loans shows a cyclical trend with increasing flows in early 1990s followed by a fall in early 2000s (Figure 2).[8] Then, a rapid surge is observed until the onset of the global financial crisis, when inflows slightly declined, partly due to the "flight to home" effect (Giannetti and Laeven, 2012; Cerutti *et al.*, 2015). MDBs' participation has also followed a similar pattern, assuming more importance, in relative terms, during the downward phases of the cycle— early 2000s and post-global financial crisis, consistent with a counter-cyclical role of MDB lending (Galindo and Panizza, 2018)—when loans with MDBs' participation amounted to up to 15 percent of all cross-border lending. In more recent years, however, this share declined to below 10 percent. The regional composition of these flows changed over time, with an increasing importance of cross border syndicated lending to low-income countries, especially in South Asia and Sub-Saharan Africa, starting from 2007 (Figure A2, see also Gurara, Klyuev, Mwase and Presbitero (2018)). Lending to low-income countries has a strong component of infrastructure financing but it is still concentrated in a few recipient countries, even though, relative to the size of the economy, cross border syndicated

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[8]A very similar patter emerges looking at the number of deals, see Figure A1

bank lending has become as important in low-income countries as in emerging markets.

3 Main Results

3.1 The Empirical Analysis

We look at the drivers of syndicated loan terms, focusing on the role of MDBs, in a model that controls for deal, lender, and borrower specific-characteristics (Carey and Nini, 2007; Berg *et al.*, 2016). More precisely, we estimate the following equation:

$$Y_{jt} = \alpha MDB_{jt} + \gamma' \mathbf{X}_{jt} + \psi_{j(t)} + \phi_{j(t)} + \tau_t + \epsilon_{it} \tag{1}$$

where the dependent variable is, alternatively, one of the pricing measures, size (in logarithm), or maturity (in months) of deal j originated in year t. The key explanatory variable measures the MDBs' participation in the syndicate with binary variable equal to one if at least one MDB is involved in the syndication of the loan, and zero if the syndicate includes only private banks.

The standard set of explanatory variables include: 1) the borrower's credit risk, measured by three categories—investment grade, leveraged, and highly leveraged; 2) the number of tranches of the loan; 3) the currency in which the loan is denominated, classified in three categories—USD, Euro, and other currencies; 4) a dummy equal to 1 if the loan is granted to public sector borrowers and 0 if the loan is to the private sector; 5) a dummy equal to 1 for term loans, and zero for credit facilities; and 6) a dummy equal to 1 if the loan has a guarantor, and 0 otherwise. Other than MDBs' participation, we look at the lender side of the deal measuring the concentration of the loan syndicate by the Herfindahl–Hirschman Index (HHI), calculated on bank shares in the loan. A more concentrated loan syndicate, as banks retain a higher share of the loan—especially lead arrangers—may signal lower risk and reduce moral hazard (Sufi, 2007b; Bosch and Steffen, 2011).

Finally, the model is saturated with industry (ψ_j), country (ϕ_j), and year (τ_t) fixed effects to absorb unobserved heterogeneity across industries, countries and time, as loan terms could depend on global conditions as well as industry and country-specific unobservable factors. In the most demanding specification we absorb time-varying country and industry-specific unobserved factors that may drive loan terms by including country×year (ϕ_{jt}) and industry×year (ψ_{jt}) fixed effects. Summary statistics and definition of all the variables are presented in Table 1.

3.2 Loan Pricing

Table 3 shows the results of equation 1 when the dependent variable is the all-in spread. Column 1 to 5 incrementally add fixed effects up to our preferred specification with country×year and industry×year fixed effects. Finally, in column 6 we include country×industry fixed effects to allow for the possibility that industry-specific unobserved factors may affect loan pricing across countries differently (but not over time, which is absorbed by the year fixed effects). The comparison of the R^2 across specifications indicates that global shocks, captured by year fixed effects, play a key role in explaining the variation in loan prices (the R^2 increases from 0.38 to 0.51 between column 1 and 2), while the role of country-specific factors is smaller (columns 2 versus 3). The inclusion of time-varying country and industry fixed effects raises the R^2 to 0.66 (column 5), suggesting that our model is able to capture two third of the observed variation in loan prices across borrowers.

Regardless of the model specification, the coefficient of the MDBs' participation dummy is always positive and statistically significant, raging from 82 (column 2, with country and year fixed effects) to 45 (in the most demanding specification of column 5 with country×year and industry×year fixed effects). Taking the latter as our preferred and conservative specification, our results imply that the price of loans with MDBs' participation is higher by 45 bps or 13 percent (relative to the average all-in spread of 351 bps). If spreads reflect borrower risk (Strahan, 1999), this result would suggest that MDBs self-select into loans with higher risk—and therefore higher spreads—that could not otherwise be financed by the private sector, in line with the evidence discussed by Hainz and Kleimeier (2012) on a large sample of syndicated loans.

The set of coefficients on deal characteristics are broadly in line with existing evidence. We find that smaller loans and those with longer maturity are associated with higher prices (Carey and Nini, 2007; Ivashina, 2009; Berg, Saunders and Steffen, 2016). In particular, taking the results of column 5, an additional year of maturity is associated with a 9 bps increase in the all-in spread, reflecting the increasing risk premium for loans with longer maturities. A higher number of tranches in the deal is also associated with higher prices, consistent with an adverse effect of loan complexity on pricing (Lee and Mullineaux, 2004; Maskara, 2010; Lim, Minton and Weisbach, 2014). Borrower's credit risk has an important effect on loan pricing. Highly leveraged and leveraged borrowers pay significantly more than investment grade borrowers. The estimated premium is sizable and robust across all specifications. A highly leveraged borrower pays on average 365 bps more than an investment grade borrower while leveraged borrowers pay a premium of 115 bps (column 5). This

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result supports the presence of market discipline in the syndicated loan market and is consistent with the model developed by Diamond (1991), and with existing evidence from the syndicated loan market in advanced economies (Santos and Winton, 2008; Haselmann and Wachtel, 2011; Lim, Minton and Weisbach, 2014).

Loans in Euro and in other currencies have a discount compared with loans in USD, in line with previous evidence from syndicated loans in emerging markets (Eichengreen and Mody, 2000). Interestingly, term loans are relatively more expensive than credit lines. On average a term loan costs 37 bps more than a credit facility (column 5), consistent with the view that firms with access to credit lines are generally more likely to have high cash flows and are less financially constrained (Sufi, 2007a; Acharya, Almeida, Ippolito and Perez, 2014). Moreover, borrowers from public sector companies and government pay lower prices (55 bps less) than private sector ones, suggesting the importance of (implicit) sovereign guarantees on loan pricing. Deals with a guarantor do not show any statistical difference in price from loans without guarantor. In line with existing evidence (Qian and Strahan, 2007), syndicated loans with higher concentration of lenders (as measured by the HHI) are associated with lower prices: on average, one standard deviation in the HHI is associated with a discount of 26 bps (column 5). This result is robust across all specifications and suggest that a higher concentration of banks' shares in the syndicate may signal a greater willingness to lend, which can be associated with a lower default risk (Sufi, 2007b; Bosch and Steffen, 2011).

Results hold when we use spread and fees separately as alternative measures of loan pricing (See Table 4). In particular, the premium due to the presence of MDBs in the syndicate is almost equally split between higher fees (19 bps) and higher loan spreads (25 bps). All the other variables have relatively similar effect on the two components of the price structure, with the exception of maturity, term loans and the degree of syndicate concentration, which have a larger effects on fees than on spreads.

3.3 De-Risking

MDBs often participate in syndicated loans when the market could not provide funding because of high (perceived or actual) borrower's riskiness. Simply comparing investment grade and risky loans (e.g., leveraged and highly leveraged loans) does not show any propensity of MDBs to join risky loan deals.[9] However, to the extent that the all-in spread reflects credit risk (Strahan, 1999), Figure

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[9]The share of loan deals with MDBs' participation which are classified as leveraged or highly leveraged is 22%; this share is 25% for deals without any MDB in the syndicate.

1 and the baseline regressions (see Table 3) suggest that there is a positive correlation between (unobserved) risk and MDBs' participation. On the other hand, MDBs are also expected to reduce the cost of borrowing through their de-risking measures, including informational advantages, better monitoring, and the extension of their *de facto* senior creditor status. Information on the broader investment environment and the quality of government policy-making is a public good that may not be supplied by private agents.[10] MDBs are better positioned to internalize the costs of such information provisioning (Rodrik, 1995). Through their global and regional membership as well as collective agreements, MDBs have access to government data which enable them to monitor government policies in several countries. In addition, MDBs have the right incentive to collect (and disseminate) quality information as they commit their own resources. Finally, MDBs' participation by itself serves as a guarantee given that loans with the involvement of MDBs are often excluded in debt restructuring even in crisis times and serviced regularly.

To test for the de-risking role of MDBs, we perform two exercises by interacting the MDBs participation dummy with two variables which could proxy for borrower creditworthiness. First, we identify risky loan deals with a dummy equal to one for those classified as leveraged or highly leveraged (*Risky*). Second, we proxy borrower riskiness using the country credit risk rating— an indicator of sovereign creditworthiness provided by Institutional Investor country credit rating dataset.[11] In particular, we define a dummy variable *High country risk* to identify borrowers which are located in countries in the bottom half of the distribution of the country credit risk rating variable.

A simple inspection of the data seems to support the hypothesis that MDBs could play a de-risking role (Figure 3). While there is a strong association between borrower riskiness and the all-in spread for deals that do not have any MDB involved (panel a), the presence of an MDB in the syndicate allows risky (leveraged and highly leveraged) borrowers to obtain loans priced similar to those obtained by less risky (investment grade) borrowers (panel b).

To test this hypothesis more formally, Table 5 presents the results of the pricing model using our

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[10]Hainz and Kleimeier (2012) argue that MDBs provide a so-called "political umbrella" because these banks can use their leverage to influence governmental decisions and deter adverse events that would negatively affect the project outcome.

[11]The dataset is published by Euromoney Institutional Investor PLC, and contains ratings of sovereign creditworthiness for 184 countries, from September 1979 to September 2016. Ratings are based on an assessment on country's fiscal sustainability, debt and liquidity, economic structure and performance, monetary policy and financial stability, balance of payments and political environment. The ratings grade each country on a scale from 0 to 100, with a rating of 100 given to those countries with the lowest chance of defaulting on their government debt obligations.

specifications with country×year and industry×year fixed effects, looking separately at the all-in spread, as well at spread and fees. For each price measure, in the first column we include the interactions between the MDB participation dummy and the borrower riskiness indicator (*Risky*), while in the second column we replace the deal-specific riskiness measure with the dummy for the sovereign riskiness (*High country risk*).

The results show that MDBs' participation is associated with a reduction of the premium associated with leveraged and highly leveraged borrowers by about a third (column 1). This result remains significant even when considering spread and fees separately, although it is larger and more precisely estimated for the former (columns 3 and 5). Consistent with these finding, and in line with existing evidence that parties could invite MDBs to participate in the loan syndicate to compensate for the high country risk level (Hainz and Kleimeier, 2012), we find that the presence of an MDB in the syndicate is associated with significantly lower borrowing costs (about 41 bps) for companies headquartered in riskier countries, even controlling for deal characteristics, including the borrower's creditworthiness.

3.4   Infrastructure and Public Sector Lending

In this section we look at two other dimensions that could matter for the way in which MDBs participation in syndicated loans can affect pricing. First, given the increasing and prominent role of MDBs in infrastructure financing (Humphrey, 2018), we are interested in the implications of MDBs' participation on borrowing costs for infrastructure projects. On the one hand, one could expect a lower cost due to risk mitigation measures, as MDBs bring close supervision and credit enhancement instruments. However, it could also be the case that MDBs self-select into loans for long-term projects with high risks, that might not match the risk profile of private sector investors. We discriminate between these two hypotheses interacting the MDB participation dummy with the infrastructure project loans indicator. The coefficient of the interaction term is positive and significant, meaning that infrastructure loans with MDBs' participation are about 66 bps more expensive than similar loans financed entirely by commercial banks (Table 6, column 1). This result, which is mostly driven by the change in spread rather than in fees (columns 3 and 5), would suggest that MDBs play a key role in infrastructure financing, as they tend to finance infrastructure projects with higher risks compared to similar projects financed by commercial banks alone.

As a second exercise, we allow MDBs' participation to have a different effect on loan prices

for private and public sector borrowers. We observe that MDBs' participation is associated with significantly lower borrowing costs for public sector firms, suggesting a key role of MDBs for public sector financing. This effect is economically sizable, as the presence of an MDB in the syndicate almost double the reduction in the all-in spread of public sector borrowers compared to private sector ones (Table 6, column 2). This effect is almost equally large across spread and fees, albeit in the latter case the point estimate is not statistically significant (column 6).

3.5 Other Loan Terms

Having focused on how MDBs' participation is associated with loan pricing, we now test in the same multivariate framework whether loan deals with MDBs' involvement are smaller in size and longer in maturity than other comparable loans, as suggested by the descriptive analysis (see Table 2). Results are presented in Table 7, in which the dependent variable is, alternatively, loan size (in million of USD) in columns 1-3 and loan maturity (in months) in columns 4-6. For each loan term, we report the main specifications with country, industry and year fixed effect, time-varying industry and country fixed effects, and country×industry and year fixed effects.[12]

Loan size The presence of MDBs is associated with lower loan size compared to loans from syndicates formed only by private banks. According to the estimates in column 2, the difference in loan size is economically meaningful, as deals with MDBs are on average USD 70 million smaller than loans granted only by commercial banks—almost 40 percent smaller than the average loan, which amounts to about USD 180 million. This result would suggest some caution when discussing the scope of MDBs in directly mobilizing private sector resources, especially in light of the large financing needs for achieving the Sustainable Development Goals outlined in the 2030 Agenda for Sustainable Development.[13]

Moving to other deal characteristics, we find that highly leveraged borrowers obtain smaller loans, confirming the importance of market discipline. Longer and more complex loans are associated with larger loan size, while term loans are generally smaller than credit facilities by around USD

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[12]Results are based on the large sample of almost 15,000 loan deals, but they remain qualitatively the same when restricting the sample to deals for which the information on the all-in spread is non missing; see Table A4.

[13]However, MDBs can also catalyze private investment on a broader scale through advice, support for policy reform, capacity building, and demonstration effects. See Broccolini *et al.* (2018) for evidence of the catalytic effects of MDBs in the syndicated loans market. A recent joint report by MDBs confirm that the most of the total mobilization effect by MDBs is indirect, while direct mobilization account for about 30 percent of all private sector resources mobilized in 2016 (World Bank, 2017).

35 million. Finally, deals with a higher degree of lender concentration are also smaller, suggesting that risk diversification—as more lenders enter into the syndicate—contributes to increase lending in the syndicated loan market (Dennis and Mullineaux, 2000; Sufi, 2007b).

Maturity MDBs' participation is associated with loans with longer maturities compared to loan syndicates exclusively composed of private banks. The difference is economically meaningful, ranging from about 25 months to 27 months (columns 4-6). Taking the specification of column 5 with time varying fixed effects as a baseline, we observe that loans with an MDB in the syndicate are, on average, 27 months longer than those in which only private banks are involved. This result is consistent with evidence showing that MDBs have a greater capacity to lend at longer tenure than the private sector, and mostly provide longer maturities than the private sector (Chelsky, Morel and Kabir, 2013; Ehlers, 2014; Inderst and Stewart, 2014).

The coefficients of the other deal characteristics are consistent with the existing evidence. Loans with more tranches, larger amount, denominated in currencies other than the dollar, and term loans are associated with longer maturities. As expected, loans to leveraged and highly leveraged borrowers have lower maturities compared to loans to investment grade borrowers, which confirm our previous findings on market discipline (i.e. safer borrowers borrow at lower prices and longer maturities compared to riskier borrowers). Deals with a guarantor also have longer maturities than those without a guarantor, confirming that the presence of guarantees benefit loan terms. Syndicate concentration is associated with significantly longer loan maturities, suggesting that banks tend to keep larger shares in loans with longer maturities. This result, in conjunction with our findings in the price specification, may indicate that concentrated syndicates seem to lend at better terms.

4 Extensions and Robustness

4.1 Matching

Our main analysis is conducted in a standard multivariate setting, in which we control for a large set of observable loan characteristics and time, industry and countries fixed effects, to isolate the effect of MDBs' participation on loan terms. However, unobserved heterogeneity could bias our results, if it is correlated with the participation of MDBs in the syndicate. In an ideal setting, we would like to observe two identical loan deals, with the only exception that one involves an MDB in the pool of lenders and the other not. One way to get closer to this setting is to match *treated* (e.g., those

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with MDBs' participation) and *untreated* (i.e., those without MDBs' participation) along many observable dimensions to estimate the average treatment effect (ATE). In particular, we use the nearest-neighbor matching estimator and we do: i) exact matching on loan type (i.e., we compare within credit facilities and term loans), and ii) nearest-neighbor matching using the set of covariates used in the baseline model, including year, industry and country fixed effects.

The results—shown in Table 8—are consistent with what we found in the multivariate setting. Comparing the sample difference in the average all-in spread across loans with and without MDBs' participation with the ATE estimated after the matching indicates that most of the effect of MDBs' participation seen in the univariate setting is accounted for by observable deal characteristics. However, even after the matching, the ATE indicates that loan deals with MDBs' participation are, on average, priced at a higher all-in spread (33 bps), a result very close to our baseline (Table 3, column 5). This difference is driven exclusively by a higher spread, while fees are not statistically different across loan deals with and without MDBs (columns 2 and 3). We also confirm that the involvement of an MDB in the syndicate is associated with longer loan maturities, and lower loan volume (columns 4 and 5).

Finally, in Table 9 we perform a slightly different exercise to look at the de-risking role of MDBs. In this case, we consider the dummy for leveraged and high leveraged borrowers (*Risky*) as the treatment and we split the sample between loan deals with and without MDBs' participation to test whether the effect of borrower risk is indeed lower in the former than in the latter. The result supports our hypothesis, as risky loans pay a premium of 204 bps on the all-in spread when the syndicate is composed of only commercial banks, while this premium decreases to 130 bps when MDBs participate in the loan syndicate

4.2   Robustness

We test the robustness of our main findings running a set of additional tests. First, we consider the fact that our sample is characterized by two features: the concentration of many deals in few countries (especially China, India and Mexico) and the presence of many countries (74) with a small number of loan deals. In Table 10 we replicate our main results—the standard association between MDBs' participation and the all-in spread and the de-risking effect—dropping the borrowers headquartered in China (columns 1-2); in China, India and Mexico (columns 3-4); and in the 74 countries which have less than 50 deals in our sample over the whole period 1994-2015 (columns

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5-6). In all the three cases, the main findings on the role of MDBs on loan pricing both for an average and a risky borrower remain intact.

Second, we run a separate analysis for credit lines and term loans, on the ground that their pricing structure is likely to differ for several reasons, related to the different options included in the contracts (e.g., to draw on a line of credit, or terminate a loan contract) (Berg, Saunders and Steffen, 2016) and to the role of liquidity risk for participating banks (Gatev and Strahan, 2009). We find differences in how some loan characteristics, such as the syndicate concentration and maturity, affect all-in spread across credit lines and term loans (Table 11). MDBs are more often involved in term loans—63% of deals with MDBs' participation are term loans. In this case, consistent with the hypothesis of risk mitigation through better information and the extension of the preferred creditor status, the involvement by an MDB in the syndicate significantly lowers borrowing costs for risky borrowers. On average, MDBs are not associated with higher borrowing costs, and the standard positive association between MDBs' participation and spreads is in place only for non-risky borrowers (columns 4-6). By contrast, the reduction of borrowing costs for risky borrowers when MDBs are involved in the loan deal is smaller and less robust when considering credit facilities, for which the risk mitigation via preferred credit status is not in place.

Finally, we cluster standard errors at the country level, rather than at the country-year level, as done throughout the paper. All our findings on the role of MDBs remain statistically significant. The replication of Table 3 with the alternative clustering shows that the change of the standard errors is relatively limited and, in some cases, our baseline estimates are more conservative (Table A3).

5   Conclusions

This paper looks at two interrelated questions. First, does the presence of an MDB in a syndicated loan affect loan terms, and especially the loan pricing? Second, does the involvement of MDBs mitigate borrower credit risk, translating into lower spreads? We examine loan terms of cross-border syndicated loans to address these questions. A key finding from our analysis is that MDBs' participation is associated with higher borrowing costs, indicating MDBs' greater willingness to finance high-risk projects that may not be financed by the private sector. However, the results show that MDBs play an important de-risking role, reducing spreads significantly, especially for riskier borrowers and those located in high risk countries. Moreover, MDBs' participation is associated with

longer loan maturities, implying MDBs' greater capacity to lend at longer tenure than the private sector, and smaller loan size, which cautions about the scope for a potential direct mobilization effect of MDBs. Overall, our findings suggest that risk mitigation can be a channel through which MDBs—thanks to better information and monitoring and the extension of their preferred creditor status—can crowd in private investment to developing countries and emerging markets.

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Figure 1: MDBs' Participation and Loan Pricing
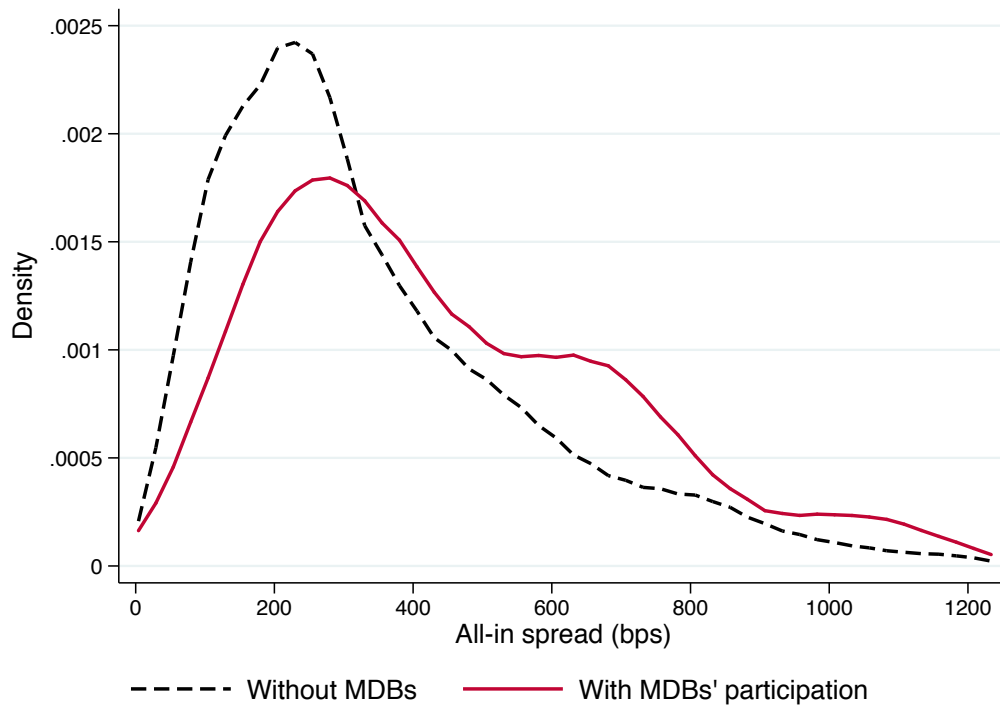
Notes: The figure shows the all-in spread (in bps) of cross-border syndicated loans to developing countries. The chart is based on a sample of 7,038 deals to 106 countries and separates between deals with at least a multilateral and deals with only commercial banks. Data source: Dealogic Loan Analytics.

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Figure 2: Cross-border Syndicated Lending to Developing Countries, in USD
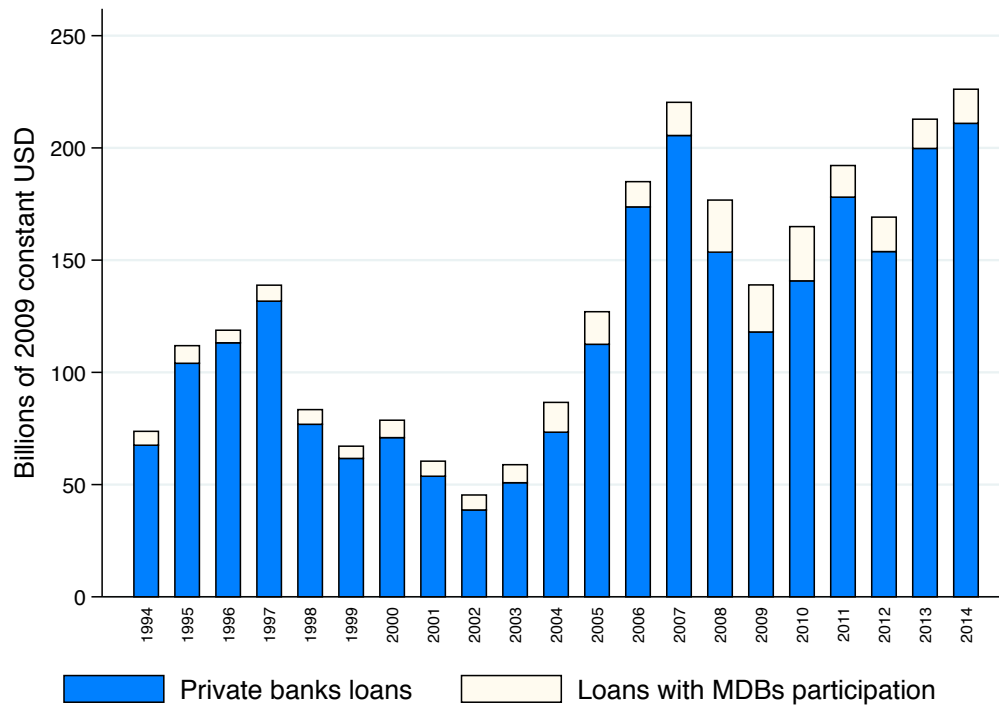
Notes: The figure shows the value in constant 2011 USD (billion) of cross-border syndicated lending to developing countries. The chart is based on a sample of 16,847 deals to 106 countries and separates between deals with at least a multilateral development bank in the syndicate and deals with only commercial banks. Data source: Dealogic Loan Analytics.

Figure 3: The De-risking Role of MDBs' Participation
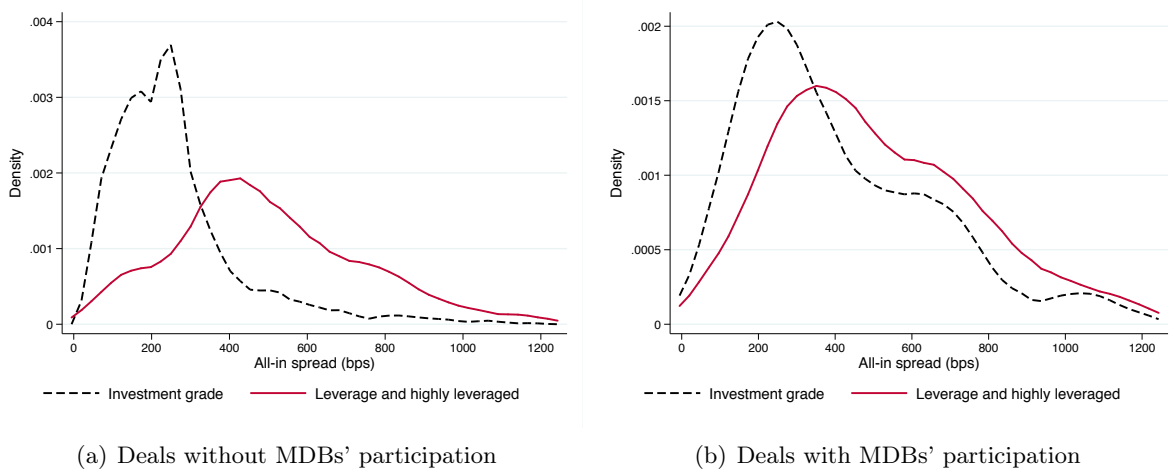
(a) Deals without MDBs' participation

(b) Deals with MDBs' participation

The figure shows the all-in spread (in bps) of cross-border syndicated loans to developing countries. The chart is based on a sample of 7,038 deals to 106 countries and distinguishes between investment grade and leveraged and highly leveraged deals. Panel (a) presents the density for deals with only commercial banks, while panel (b) include deal with at least a multilateral development bank in the syndicate. Data source: Dealogic Loan Analytics.

Table 1: Descriptive Statistics

Notes: The table presents the summary statistics of the variables employed in the analysis. The data is based on a sample of 16,847 deals to 107 countries granted during the period 1994-2015. All-in spread, spread, and fees are in basis points (bps). Deal value is expressed in USD million or in logarithm (log of deal value), while maturity is expressed in months. MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Term loan is a dummy equal to 1 for term loans, and 0 for credit facilities. Public is a dummy equal to 1 if the loan is granted to public sector borrowers and 0 if the loan is to the private sector. Risky is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. The deal currency is classified in three categories—USD, Euro, and other currencies. Deal with a guarantor is a dummy equal to 1 if the loan has a guarantor, and 0 otherwise. Syndicate concentration is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. Data source: Dealogic Loan Analytics.

Variable	Obs.	Mean	S.D.	Min	p25	p50	p75	Max
All-in spread	7038	351.5	232.08	37.5	180	286.6	475	1200
Spread	7345	168.9	116.24	17	85	135	225	625
Fees	7228	179.87	121.52	13	90	149	250	625
Deal value (USD million)	16847	177.03	438.64	0	21	65	170	18000
Log of deal value	16847	17.87	1.61	7.6	16.86	17.99	18.95	24
Maturity (months)	14915	52.6	46	1	12	36	72	360
MDB	16847	0.1	0.3	0	0	0	0	1
Number of tranches	16847	1.29	0.77	1	1	1	1	16
Term loan	16847	0.55	0.5	0	0	1	1	1
Public	16847	0.26	0.44	0	0	0	1	1
Investment grade	16847	0.75	0.43	0	0	1	1	1
Leveraged	16847	0.21	0.41	0	0	0	0	1
Highly leveraged	16847	0.04	0.19	0	0	0	0	1
Risky	16847	0.25	0.43	0	0	0	1	1
USD loan	16847	0.8	0.4	0	1	1	1	1
Euro loan	16847	0.08	0.28	0	0	0	0	1
Other currencies loan	16847	0.12	0.32	0	0	0	0	1
Deal with a guarantor	16847	0.23	0.42	0	0	0	0	1
Syndicate concentration	16847	0.45	0.38	0.01	0.12	0.27	1	1

Table 2: Syndicated Loan Terms and MDBs' Participation

Notes: The table shows the average values of loan terms for deals with only private banks and for those with at least one MDB involved in the syndication of the loan. The last columns show the difference and the results of a t-test for the equality of the means across the two samples. The sample period is 1994-2015. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Data sources: Dealogic Loan Analytics.

| | Deals | | | | | |
| | Commercial banks only | | with MDBs' participation | | | |
	Mean	Obs.	Mean	Obs.	Difference	t-test
All-in spread (bbs)	345.23	6601	446.32	437	101.09	***
Spread (bps)	165.77	6899	217.38	446	51.61	***
Fees (bps)	176.99	6776	223.08	452	46.09	***
Deal value (USD million)	179.36	15153	156.18	1694	-23.18	***
Maturity (months)	50.63	13967	81.62	948	30.99	***

Table 3: Loan Pricing—All-in Spread

Notes: The table presents OLS estimates of model 1. The dependent variable is the all-in spread of the loan (spread plus fees) in basis points (bps). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). The excluded category for currency are deals in USD. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Data sources: Dealogic Loan Analytics.

Dep. Var.: All-in spread	(1)	(2)	(3)	(4)	(5)	(6)
MDB	64.3813***	82.6265***	63.0023***	47.0927***	45.4043***	60.4875***
	(12.878)	(12.067)	(12.268)	(12.747)	(13.484)	(12.896)
Log of deal value	-3.1679	-20.1222**	-14.0197**	-17.424***	-19.465***	-13.9254**
	(9.384)	(7.834)	(5.124)	(4.770)	(4.844)	(5.491)
Number of tranches	21.2247***	15.1710**	11.8910**	13.9997***	13.8604***	11.0556*
	(6.220)	(5.604)	(5.100)	(4.329)	(3.967)	(5.810)
Maturity (in months)	0.4245*	0.7051***	0.7194***	0.7929***	0.7700***	0.6750***
	(0.245)	(0.144)	(0.196)	(0.208)	(0.192)	(0.195)
Leveraged	171.4569***	159.1101***	130.6725***	119.2904***	115.4159***	128.8962***
	(26.835)	(13.532)	(12.953)	(14.553)	(14.725)	(13.155)
Highly leveraged	426.2991***	465.8138***	388.7043***	368.8614***	364.6687***	381.8506***
	(26.631)	(22.611)	(20.519)	(19.645)	(20.382)	(20.362)
Term loan	28.6088**	38.1940***	40.2687***	35.3235***	36.6469***	44.2661***
	(10.880)	(11.120)	(9.874)	(9.830)	(9.288)	(10.116)
Public	-37.1885**	-49.718***	-55.140***	-61.913***	-55.473***	-54.526***
	(14.774)	(15.938)	(11.868)	(13.996)	(12.748)	(11.547)
Euro	-32.9701	-10.1033	-43.8180**	-41.9157**	-49.667***	-46.2936**
	(21.615)	(20.489)	(18.072)	(17.423)	(15.200)	(16.566)
Other currency	-43.774***	-47.092***	-22.9198*	-18.6712	-20.7171*	-28.848***
	(13.914)	(11.180)	(11.222)	(11.836)	(11.382)	(10.052)
Deal with a guarantor	-12.4037	4.2185	-5.0795	-4.3782	-4.0366*	-1.2073
	(10.450)	(7.920)	(4.327)	(3.328)	(2.284)	(3.440)
Syndicate concentration	50.9959	-100.19***	-84.891***	-71.392***	-71.103***	-89.732***
	(31.714)	(23.504)	(19.273)	(16.351)	(15.537)	(19.886)
Observations	6,958	6,958	6,945	6,726	6,724	6,871
R^2	0.377	0.511	0.572	0.636	0.657	0.594
Country FE	No	No	Yes	-	-	-
Year FE	No	Yes	Yes	-	-	Yes
Industry FE	Yes	Yes	Yes	Yes	-	-
Country-Year FE	No	No	No	Yes	Yes	No
Industry-Year FE	No	No	No	No	Yes	No
Country-Industry FE	No	No	No	No	No	Yes

Notes: The table presents OLS estimates of model 1. The dependent variable in columns (1) and (2) is the loan spread, and in columns (3) and (4) the loan fees, all in basis points (bps). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). The excluded category for currency are deals in USD. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Data sources: Dealogic Loan Analytics.

Dep. Var.:	Spread		Fees	
	(1)	(2)	(3)	(4)
MDB	24.6882***	30.4665***	19.2753**	29.0835***
	(7.520)	(6.457)	(7.232)	(6.744)
Log of deal value	-9.1183***	-5.8878**	-7.9939***	-6.3097**
	(2.380)	(2.821)	(2.560)	(2.527)
Number of tranches	5.9769**	3.2031	5.1261**	4.6951
	(2.320)	(3.129)	(2.099)	(2.877)
Maturity (in months)	0.2970***	0.2638**	0.4465***	0.4080***
	(0.084)	(0.097)	(0.081)	(0.096)
Leveraged	56.8459***	63.9924***	59.2183***	63.7570***
	(7.053)	(6.075)	(7.096)	(6.070)
Highly Leveraged	191.9646***	196.4676***	183.4410***	187.8040***
	(9.031)	(9.609)	(11.557)	(9.873)
Term loan	13.7201***	17.9561***	23.2939***	26.0868***
	(3.957)	(4.330)	(5.402)	(4.689)
Public	-24.8182***	-26.1130***	-26.9697***	-24.9886***
	(6.606)	(5.983)	(6.558)	(6.374)
Euro	-28.2780***	-23.0625**	-23.8665***	-22.8571**
	(9.040)	(8.453)	(6.759)	(8.287)
Other currency	-2.4392	-5.1525	-30.7537***	-35.3515***
	(4.182)	(3.972)	(9.409)	(9.620)
Deal with a guarantor	-3.8691*	-2.6657	-3.0508	-3.1794
	(2.209)	(3.098)	(3.984)	(2.614)
Syndicate concentration	-17.8288*	-26.5470**	-45.6909***	-52.0908***
	(8.609)	(9.872)	(7.570)	(7.341)
Observations	7,015	7,163	6,904	7,058
R^2	0.667	0.601	0.581	0.527
Year FE	-	Yes	-	Yes
Country-Year FE	Yes	No	Yes	No
Industry-Year FE	Yes	No	Yes	No
Country-Industry FE	No	Yes	No	Yes

Table 5: Loan Pricing, MDBs' Participation, and De-risking

Notes: The table presents OLS estimates of model 1. The dependent variable in columns (1) and (2) is the all-in spread, while in columns (3) and (4) is the loan spread, and in columns (5) and (6) the loan fees, all in basis points (bps). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Risky is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. High country risk is a dummy equal to 1 for borrowers located in countries in the bottom half of the distribution of teh country credit risk rating variable. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The excluded category for currency are deals in USD. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Data sources: Dealogic Loan Analytics.

Dep. Var.:	All-in Spread		Spread		Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
MDB	63.2427***	66.7475***	35.5429***	36.9337***	23.7166**	35.5153***
	(16.731)	(18.645)	(8.836)	(9.074)	(10.456)	(9.838)
MDB x Risky	-59.5944***		-34.5200***		-19.9740*	
	(15.758)		(8.760)		(9.928)	
MDB x High country risk		-41.2264*		-23.0643**		-29.9569**
		(21.403)		(9.097)		(10.559)
Risky	156.8479***	153.4012***	80.2366***	78.2758***	79.3607***	78.1482***
	(14.024)	(14.209)	(7.027)	(7.160)	(7.081)	(7.158)
Public	-60.2499***	-60.6424***	-27.8085***	-27.9600***	-29.2744***	-29.3085***
	(14.441)	(14.444)	(7.445)	(7.471)	(7.554)	(7.576)
Log of deal value	-22.4576***	-22.4311***	-10.6135***	-10.5800***	-9.3501***	-9.3042***
	(6.233)	(6.571)	(2.960)	(2.941)	(3.074)	(3.044)
Number of tranches	14.5015***	14.4609***	6.3743**	6.3346**	5.4027*	5.3461*
	(4.858)	(4.959)	(2.776)	(2.696)	(2.697)	(2.694)
Maturity (in months)	0.7942***	0.8026***	0.3053**	0.3104***	0.4594***	0.4611***
	(0.190)	(0.189)	(0.120)	(0.105)	(0.087)	(0.086)
Term loan	40.8039***	40.5194***	16.0897***	15.8766***	25.2971***	25.2061***
	(9.980)	(9.796)	(4.418)	(4.395)	(5.557)	(5.668)
Euro	-53.0404***	-54.0893***	-30.0605***	-30.6123***	-25.4270***	-25.9831***
	(13.638)	(13.874)	(8.336)	(8.698)	(5.815)	(5.896)
Other currency	-17.9075*	-18.1721**	-0.8808	-1.0732	-29.6287***	-29.8034***
	(9.012)	(8.291)	(3.254)	(3.534)	(8.538)	(8.642)
Deal with a guarantor	-8.0794	-8.1275	-6.3980	-6.4428	-5.0483	-5.0242
	(5.777)	(5.470)	(3.867)	(3.859)	(4.991)	(4.936)
Syndicate concentration	-69.4635***	-69.2368***	-16.1830*	-15.9940*	-44.8760***	-44.7691***
	(17.283)	(17.458)	(8.953)	(8.902)	(8.177)	(8.108)
Observations	6,724	6,720	7,015	7,011	6,904	6,900
R-squared	0.613	0.612	0.615	0.614	0.542	0.541
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Industry FE	No	No	No	No	No	No

Table 6: Loan Pricing—Infrastructure and Public Sector Lending

Notes: The table presents OLS estimates of model 1. The dependent variable in columns (1) and (2) is the all-in spread, while in columns (3) and (4) is the loan spread, and in columns (5) and (6) the loan fees, all in basis points (bps). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Infrastructure is a dummy equal to 1 for infrastructure loans and 0 otherwise. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). The excluded category for currency are deals in USD. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Data sources: Dealogic Loan Analytics.

Dep. Var.:	All-in Spread		Spread		Fees	
	(1)	(2)	(3)	(4)	(5)	(6)
MDB	32.6194**	55.2291***	16.8229*	29.6921***	15.2647	23.4115**
	(13.452)	(15.972)	(9.400)	(8.684)	(10.065)	(8.938)
MDB x Infrastructure	65.6771**		39.6436***		20.2503	
	(24.455)		(13.057)		(12.892)	
MDB x Public		-52.9012*		-26.9046**		-23.0487
		(27.470)		(12.683)		(17.260)
Public	-55.7821***	-52.6893***	-25.0352***	-23.3909***	-27.0664	-25.7618***
	(14.144)	(12.947)	(7.803)	(6.527)	(28.233)	(6.831)
Log of deal value	-19.3857***	-19.3024***	-9.0571*	-9.0305***	-7.9735***	-7.9240***
	(4.185)	(4.990)	(4.435)	(2.541)	(2.678)	(2.783)
Number of tranches	13.3279***	13.4676***	5.6675**	5.7731**	4.9704	4.9550**
	(3.665)	(3.910)	(2.402)	(2.317)	(6.395)	(2.131)
Maturity (in months)	0.7631	0.7644***	0.2929***	0.2946***	0.4450***	0.4444***
	(11.668)	(0.183)	(0.102)	(0.084)	(0.086)	(0.080)
Leveraged	115.7625***	115.6864***	57.0217***	56.9846***	59.3489***	59.3543***
	(14.779)	(14.859)	(7.069)	(7.133)	(10.379)	(7.187)
Highly leveraged	365.7773***	364.7117***	192.5244***	191.9777***	183.8045***	183.5388***
	(19.544)	(20.378)	(10.708)	(9.033)	(17.421)	(11.539)
Term loan	36.7073***	36.7087***	13.7693***	13.7451***	23.3062*	23.3199***
	(8.988)	(9.282)	(3.967)	(3.992)	(12.703)	(5.301)
Euro	-50.7689***	-48.1262***	-28.7797***	-27.5684***	-24.1892*	-23.2107***
	(15.265)	(15.642)	(9.544)	(9.070)	(11.915)	(7.100)
Other currency	-20.8641*	-20.8716*	-2.6496	-2.4437	-30.7971**	-30.7850***
	(12.058)	(11.455)	(5.854)	(4.415)	(11.095)	(9.462)
Deal with a guarantor	-3.8386	-3.6530	-3.7554	-3.6738*	-3.0041	-2.8723
	(3.396)	(2.146)	(2.317)	(2.065)	(5.940)	(3.850)
Syndicate concentration	-72.0942***	-71.1356***	-18.4231*	-17.8447**	-45.9849***	-45.7616***
	(15.437)	(15.541)	(9.388)	(8.531)	(8.297)	(7.709)
Observations	6,724	6,724	7,015	7,015	6,904	6,904
R-squared	0.657	0.657	0.668	0.667	0.581	0.581
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Industry FE	No	No	No	No	No	No

Table 7: Loan Terms and MDBs' Participation

Notes: The table presents OLS estimates of model 1. The dependent variable is, alternatively, loan size (in million of USD) in columns 1-3 and loan maturity (in months) in columns 4-6. MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The excluded category for currency are deals in USD. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Data sources: Dealogic Loan Analytics.

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Dep. Var.:	Deal value (USD million)			Maturity (in months)		
	(1)	(2)	(3)	(4)	(5)	(6)
MDB	-60.3707**	-69.5282**	-60.8277*	25.4464***	26.8113***	26.2506***
	(26.579)	(31.783)	(29.488)	(3.625)	(3.611)	(3.291)
Log of deal value				5.7569***	5.7589***	5.9920***
				(0.551)	(0.736)	(0.781)
Maturity (in months)	0.8534**	0.8518**	0.8376**			
	(0.363)	(0.303)	(0.307)			
Number of tranches	100.4890***	105.5598***	104.6880***	6.8090***	6.7785***	6.1761***
	(14.899)	(17.922)	(15.758)	(1.173)	(1.213)	(1.120)
Leveraged	-7.7600	-20.4244	-9.3129	-9.3646***	-7.7714***	-9.4481***
	(16.529)	(25.968)	(18.072)	(1.661)	(1.293)	(1.352)
Highly leveraged	-43.4899	-53.8992**	-32.3138	-12.0614***	-6.8249***	-13.2790***
	(26.449)	(25.361)	(26.371)	(2.855)	(2.114)	(2.526)
Term loan	-32.8837***	-34.0574**	-32.2358***	9.8270***	9.3254***	10.2232***
	(11.277)	(12.082)	(10.433)	(1.858)	(2.014)	(1.735)
Public	7.9472	16.7582	12.6007	-0.1041	0.7064	0.5409
	(19.626)	(20.775)	(22.230)	(2.722)	(2.650)	(2.561)
Euro	-45.5481*	-34.9332	-29.1191	23.9950***	23.5877***	22.8421***
	(24.019)	(29.780)	(25.049)	(3.478)	(3.441)	(3.728)
Other currency	-21.1895	-14.0574	-20.1627	6.3406**	5.2172**	6.9646***
	(27.149)	(26.087)	(26.660)	(2.661)	(2.093)	(2.366)
Deal with a guarantor	-26.6927*	-28.2741	-24.4093	22.3603***	21.4241***	22.8271***
	(15.310)	(16.450)	(14.516)	(3.529)	(3.643)	(3.450)
Syndicate concentration	-301.4022***	-320.8541***	-295.4640***	12.4578***	14.7414***	10.1476***
	(42.126)	(47.778)	(44.016)	(3.482)	(3.655)	(3.529)
Observations	14,904	14,587	14,804	14,904	14,587	14,804
R-squared	0.169	0.221	0.197	0.366	0.441	0.408
Country FE	Yes	-	-	Yes	-	-
Year FE	Yes	-	Yes	Yes	-	Yes
Industry FE	Yes	-	-	Yes	-	-
Country-Year FE	No	Yes	No	No	Yes	No
Industry-Year FE	No	Yes	No	No	Yes	No
Country-Industry FE	No	No	Yes	No	No	Yes

Table 8: The Role of MDBs in the Syndicated Loan Market—Nearest Neighbor Matching

Notes: This table presents results of nearest neighbor matching estimator using the set of covariates used in the baseline model 1. The dependent variable is, alternatively: all-in spread (column 1), spread (column 2), fees (column 3)–all in basis points,—deal value (in USD million, column 4), and maturity (in months, column 5)). The treatment variable—MDB—is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Risky is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The excluded category for currency are deals in USD. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Data sources: Dealogic Loan Analytics.

Dep. Var.:	All-in spread (1)	Spread (2)	Fees (3)	Deal size (4)	Maturity (5)
Matched	32.639**	30.274***	9.660	-83.297***	26.342***
	(16.516)	(7.746)	(9.693)	(22.771)	(3.378)
Unmatched	101.092***	51.616***	46.092***	-23.176**	30.995***
	(11.401)	(5.647)	(5.879)	(11.236)	(1.523)
# treated (MDB)	424	433	438	948	948
# controls	6534	6817	6707	13967	13967
Exact matching on:					
Loan type	Y	Y	Y	Y	Y
Nearest-neighbor matching on:					
Deal size	Y	Y	Y	N	Y
Maturity	Y	Y	Y	Y	N
Tranches	Y	Y	Y	Y	Y
Currency	Y	Y	Y	Y	Y
Risky	Y	Y	Y	Y	Y
Public sector	Y	Y	Y	Y	Y
Guarantor	Y	Y	Y	Y	Y
Concentration	Y	Y	Y	Y	Y
Industry	Y	Y	Y	Y	Y
Country	Y	Y	Y	Y	Y
Year	Y	Y	Y	Y	Y

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Table 9: De-Risking—Nearest Neighbor Matching

Notes: This table presents results of nearest neighbor matching estimator using the set of covariates employed in the baseline model 1. The dependent variable is the all-in spread, in basis points. The treatment variable—Risky—is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). The excluded category for currency are deals in USD. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Data sources: Dealogic Loan Analytics.

Dep. Var.: All-in spread	MDB=0 (1)	MDB=1 (2)
Matched	204.300**	130.163***
	(13.115)	(21.940)
Unmatched	237.780***	98.548***
	(5.100)	(24.390)
# treated (*Risky*)	2338	171
# controls	4196	252
Exact matching on:		
Loan type	Y	Y
Nearest-neighbor matching on:		
Deal size	Y	Y
Maturity	Y	Y
Tranches	Y	Y
Currency	Y	Y
Public sector	Y	Y
Guarantor	Y	Y
Concentration	Y	Y
Industry	Y	Y
Country	Y	Y
Year	Y	Y

Table 10: Robustness—Sub-samples

Notes: The table presents OLS estimates of model 1. The dependent variable is the all-in spread, in basis points (bps). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Risky is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. The excluded category for currency are deals in USD. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Data sources: Dealogic Loan Analytics.

Dep. Var.: All-in spread	Drop China		Drop CHN, IND, MEX		Drop small countries	
	(1)	(2)	(3)	(4)	(5)	(6)
MDB	28.8218**	52.0012***	33.3147**	58.2688***	38.0142**	61.4145***
	(12.868)	(15.204)	(14.906)	(16.371)	(14.833)	(16.738)
MDB x Risky		-53.3596***		-57.3307***		-59.4955***
		(14.986)		(14.411)		(15.377)
Risky	148.3222***	151.5920***	144.9960***	148.9809***	153.5144***	156.9028***
	(14.798)	(14.571)	(16.457)	(16.157)	(14.370)	(14.101)
Public	-76.2528***	-75.6814***	-65.0072***	-64.3312***	-61.4082***	-60.7715***
	(14.423)	(14.400)	(18.981)	(18.911)	(14.318)	(14.449)
Log of total deal value	-26.1543***	-26.0798***	-26.2144***	-26.1533***	-22.2080***	-22.1277***
	(6.880)	(6.844)	(8.524)	(8.526)	(6.295)	(6.235)
Number of tranches	15.0259**	14.9863**	12.0693**	12.0363**	14.7966***	14.7134***
	(5.606)	(5.904)	(4.721)	(4.865)	(4.828)	(4.859)
Maturity (in months)	0.9237**	0.9111***	0.8082***	0.7980**	0.7979***	0.7873***
	(0.360)	(0.231)	(0.236)	(0.373)	(0.199)	(0.192)
Term loan	36.5035***	36.9258***	31.9148***	32.3683***	40.1377***	40.5928***
	(9.445)	(10.202)	(10.701)	(11.355)	(9.586)	(9.975)
Euro	-43.2781***	-42.8031***	-29.8211**	-29.0196**	-53.4823***	-53.3007***
	(8.018)	(7.535)	(13.467)	(13.006)	(14.122)	(13.945)
Other currency	-22.2652	-22.1934	-18.9672	-19.1542	-17.9624**	-17.9396*
	(14.380)	(14.623)	(17.866)	(17.982)	(8.212)	(9.129)
Deal with a guarantor	-3.7658	-3.6201	-2.3705	-2.2501	-8.0018	-7.8756
	(6.676)	(7.247)	(8.615)	(9.845)	(5.244)	(5.705)
Syndicate concentration	-77.0229**	-76.7737**	-75.7580**	-75.5126**	-69.1756***	-68.8479***
	(29.914)	(29.955)	(30.058)	(30.088)	(17.411)	(17.450)
Observations	5,229	5,229	3,975	3,975	6,645	6,645
R-squared	0.616	0.617	0.633	0.633	0.604	0.605
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Industry FE	No	No	No	No	No	No

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Table 11: Robustness—Credit Facilities versus Term Loans

Notes: The table presents OLS estimates of model 1. The dependent variable is the all-in spread, in basis points (bps). Columns 1-3 refer to the sub-sample of credit facilities, while columns 4-6 to that of term loans. MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Risky is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. High country risk is a dummy equal to 1 for borrowers located in countries in the bottom half of the distribution of teh country credit risk rating variable. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The excluded category for currency are deals in USD. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Data sources: Dealogic Loan Analytics.

Dep. Var.: All-in spread	Credit facilities			Term loans		
	(1)	(2)	(3)	(4)	(5)	(6)
MDB	106.4106**	113.4181**	206.7033***	19.5031	41.1421**	49.2923**
	(43.423)	(54.335)	(64.247)	(15.899)	(18.428)	(18.448)
MDB x Risky		-25.5953			-51.2906***	
		(73.249)			(16.573)	
MDB x High country risk			-165.2530*			-45.5461**
			(83.826)			(18.642)
Risky	149.7427***	150.2758***	149.3539***	153.3471***	156.8117***	153.1936***
	(20.288)	(20.444)	(20.131)	(15.247)	(15.313)	(15.114)
Public	-52.5944**	-52.3783**	-50.6259**	-54.6101***	-54.0227***	-54.3417***
	(19.769)	(19.902)	(20.744)	(12.700)	(13.383)	(12.733)
Log of total deal value	-19.8625***	-19.9180***	-19.6612***	-26.3244***	-26.2040***	-26.0855***
	(6.659)	(5.970)	(6.531)	(8.446)	(8.330)	(8.390)
Number of tranches	18.7399	18.6051	19.3758	12.6993***	12.6714***	12.5354**
	(16.073)	(16.138)	(16.066)	(4.418)	(4.309)	(4.686)
Maturity (in months)	0.0813	0.0773	0.0590	1.0784***	1.0702***	1.0788***
	(0.223)	(0.194)	(0.208)	(0.322)	(0.285)	(0.333)
Euro	-102.9652***	-103.2945***	-103.1462***	-31.1473**	-30.4623*	-32.7674**
	(24.253)	(24.397)	(24.481)	(14.538)	(15.129)	(14.695)
Other currency	-15.6564	-15.7240	-15.7216	-19.5721	-19.3091	-19.3440
	(10.180)	(10.574)	(10.674)	(12.050)	(12.221)	(12.192)
Deal with a guarantor	-10.9784	-10.7800	-9.5871	-4.8177	-4.9510	-4.9550
	(13.081)	(16.239)	(13.250)	(6.749)	(6.877)	(6.696)
Syndicate concentration	-40.2985**	-40.7230**	-39.7879*	-83.6439***	-82.7082***	-83.1168***
	(17.108)	(16.979)	(19.364)	(25.034)	(24.672)	(25.036)
Observations	1,941	1,941	1,941	4,611	4,611	4,609
R-squared	0.659	0.659	0.661	0.635	0.636	0.635
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Industry FE	No	No	No	No	No	No

Online Appendix

A-I Additional Figures

Figure A1: Cross-border Syndicated Lending to Developing Countries, Number of Deals
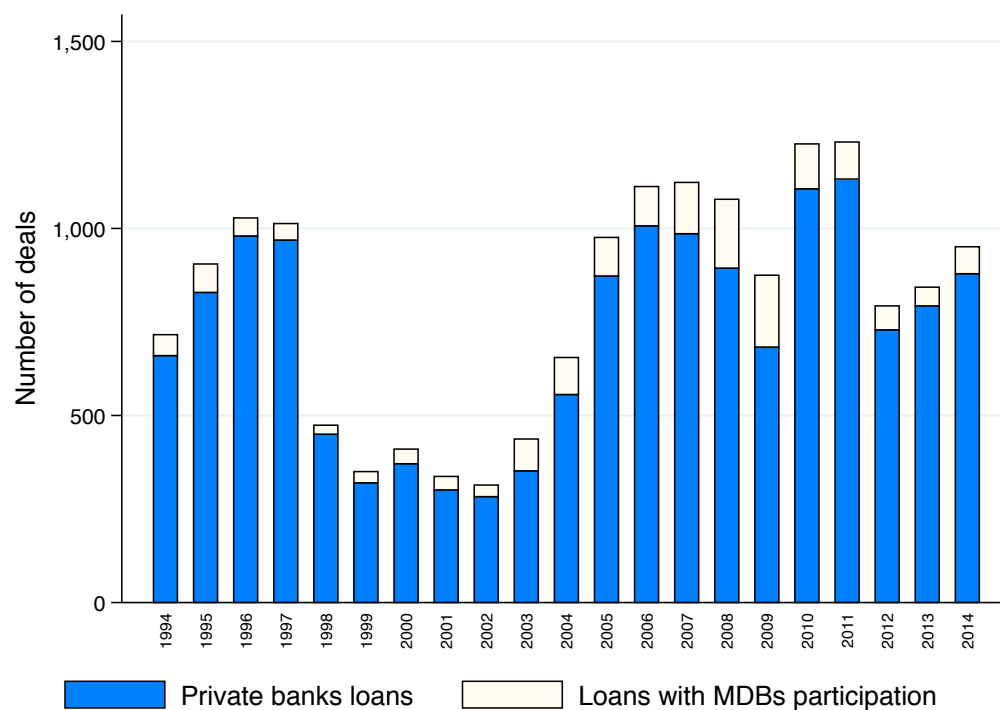
Notes: The figure shows the number of cross-border syndicated loan deals to developing countries. The chart is based on a sample of 16,847 deals to 107 countries and separates between deals with at least a multilateral development bank in the syndicate and deals with only commercial banks. Data source: Dealogic Loan Analytics.

Figure A2: Cross-border Syndicated Lending to Developing Countries, by Region, in USD
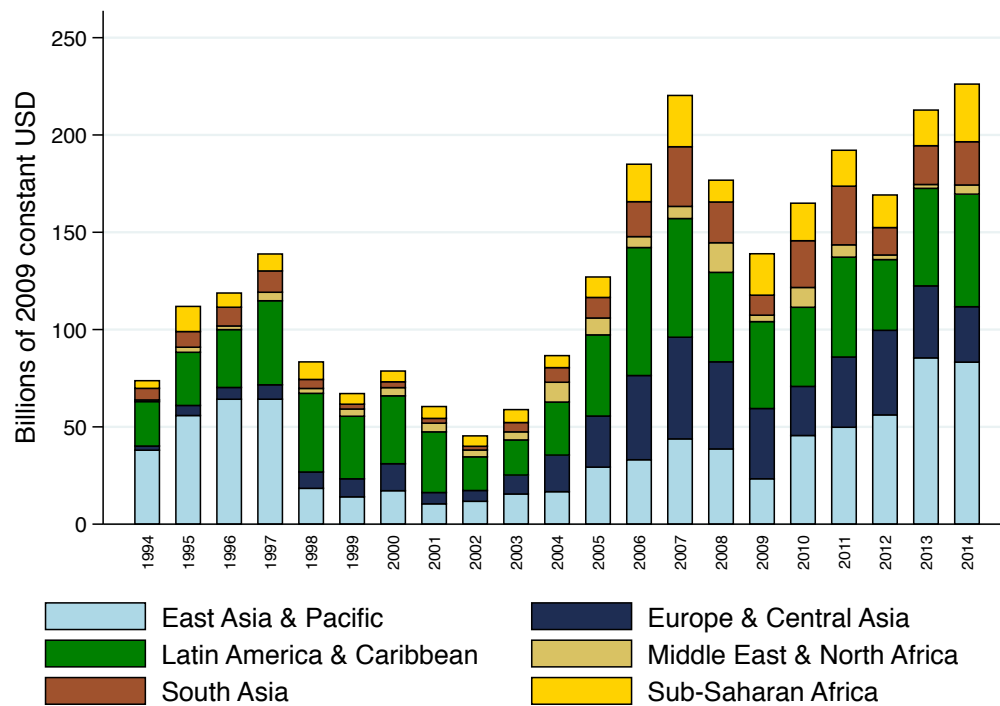
Notes: The figure shows the value in constant 2011 USD (billion) of cross-border syndicated lending to developing countries (see Table A1 for the list of countries). The chart is based on a sample of 16,847 deals to 107 countries and separates between deals according to the region of the borrower, according to the World Bank classification. Data source: Dealogic Loan Analytics.

A-II   Additional Tables

Table A1: Syndicated Loan Deals and MDBs' Participation Across Sectors

Notes: The table shows, by country, the total number of loan deals, as well as only those with at least one MDB involved in the syndication of the loan. The "LIC" column identifies low-income countries. The sample consists of 16,847 deals to 107 countries over the period 1994-2014. Data sources: Dealogic Loan Analytics.

Country	# deals	with MDBs	LIC	Country	# deals	with MDBs	LIC
Afghanistan	1	1	1	Lebanon	24	5	0
Albania	14	11	0	Lesotho	1	1	1
Algeria	57	4	0	Liberia	54	1	1
Angola	60	7	0	Libya	4	2	0
Armenia	39	28	0	Macedonia	22	12	0
Azerbaijan	132	51	0	Madagascar	3	1	1
Bangladesh	53	2	1	Malawi	3	1	1
Belarus	65	21	0	Malaysia	624	5	0
Belize	1	1	0	Maldives	8	3	1
Benin	6	0	1	Mali	16	3	1
Bhutan	2	1	1	Mauritania	4	1	1
Bolivia	20	10	1	Mauritius	18	1	0
Bosnia	28	27	0	Mexico	1,369	37	0
Botswana	7	1	0	Moldova	40	38	1
Brazil	1,865	76	0	Mongolia	33	15	1
Bulgaria	132	70	0	Montenegro	9	7	0
Burkina Faso	0	9	1	Morocco	60	5	0
Cambodia	8	2	1	Mozambique	21	8	1
Cameroon	21	5	1	Myanmar	4	0	1
Cape Verde	1	0	1	Namibia	10	3	0
Chad	4	2	1	Nepal	4	2	1
China	3,140	52	0	Nicaragua	9	5	1
Colombia	274	30	0	Niger	2	1	1
Congo	8	1	1	Nigeria	171	32	1
Congo, DR	10	3	1	Pakistan	231	47	0
Costa Rica	50	8	0	Panama	152	9	0
Cote D'Ivoire	27	8	1	Paraguay	12	1	0
Cuba	13	0	0	Peru	258	21	0
Djibouti	2	0	1	Philippines	436	21	0
Ecuador	24	3	0	Romania	232	112	0
Egypt	190	52	0	Rwanda	6	5	1
El Salvador	43	4	0	Senegal	20	5	1
Eritrea	2	0	1	Serbia	64	46	0
Ethiopia	14	5	1	Sierra Leone	2	1	1
Fiji	1	0	0	South Africa	388	39	0
Gabon	5	2	0	Sri Lanka	35	8	0
Georgia	39	30	0	Sudan	2	1	1
Ghana	88	17	1	Syria	1	0	0
Grenada	2	0	1	Tajikistan	15	15	1
Guatemala	30	3	0	Tanzania	23	6	1
Guinea	7	1	1	Thailand	873	40	0
Guyana	1	1	1	Togo	3	2	1
Haiti	5	3	1	Tunisia	46	10	0
Honduras	16	2	1	Turkey	1,032	150	0
India	1,423	81	0	Turkmenistan	10	2	0
Indonesia	1,210	38	0	Uganda	18	12	1
Iran	110	2	0	Ukraine	349	108	0
Iraq	7	3	0	Uzbekistan	55	17	1
Jamaica	31	6	0	Vanuatu	1	1	1
Jordan	41	12	0	Vietnam	243	20	1
Kazakhstan	346	65	0	Yemen	9	2	1
Kenya	35	13	1	Zambia	48	14	1
Kyrgyzstan	21	19	1	Zimbabwe	14	4	1
Laos	16	2	1				

Table A2: Syndicated Loan Deals and MDBs' Participation Across Industry

Notes: The table shows, by sector, presents the total number of loan deals, as well as only those with at least one MDB involved in the syndication of the loan. The sample period is 1994-2015. Data sources: Dealogic Loan Analytics.

Industry	# deals	%	of which, with MDB	%
Finance	5586	0.33	657	0.39
Government	30	0.00	3	0.00
Oil & Gas	1413	0.08	124	0.07
Agriculture	389	0.02	53	0.03
Log of deal value	1290	0.08	100	0.06
Infrastructure	3791	0.23	436	0.26
Manufacturing	3417	0.20	237	0.14
Mining & Metals	462	0.03	30	0.02
Services	469	0.03	54	0.03
Total	16847	1.00	1,694	1.00

Table A3: Robustness—Alternative Clustering

Notes: The table presents OLS estimates of model 1. The dependent variable is the all-in spread of the loan (spread plus fees) in basis points (bps). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). The excluded category for currency are deals in USD. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Data sources: Dealogic Loan Analytics.

Dep. Var.: All-in spread	(1)	(2)	(3)	(4)	(5)	(6)
MDB	64.3813***	82.6265***	63.0023***	47.0927***	45.4043***	60.4875***
	(14.809)	(12.968)	(13.315)	(14.929)	(15.817)	(13.817)
Log of deal value	-3.1679	-20.122***	-14.020***	-17.424***	-19.465***	-13.925***
	(6.373)	(6.348)	(4.351)	(4.267)	(4.200)	(4.687)
Number of tranches	21.2247***	15.1710**	11.8910**	13.9997**	13.8604***	11.0556*
	(5.655)	(5.754)	(5.473)	(5.309)	(4.881)	(6.307)
Maturity (in months)	0.4245**	0.7051***	0.7194***	0.7929***	0.7700***	0.6750***
	(0.205)	(0.135)	(0.166)	(0.188)	(0.165)	(0.173)
Leveraged	171.4569***	159.1101***	130.6725***	119.2904***	115.4159***	128.8962***
	(21.482)	(10.437)	(9.482)	(12.158)	(12.683)	(9.973)
Highly leveraged	426.2991***	465.8138***	388.7043***	368.8614***	364.6687***	381.8506***
	(22.863)	(23.046)	(20.475)	(19.395)	(19.486)	(19.860)
Term loan	28.6088***	38.1940***	40.2687***	35.3235***	36.6469***	44.2661***
	(9.141)	(8.855)	(7.255)	(7.774)	(6.996)	(6.991)
Public	-37.188**	-49.718***	-55.140***	-61.913***	-55.473***	-54.526***
	(14.914)	(15.098)	(11.116)	(13.349)	(12.317)	(10.814)
Euro	-32.9701	-10.1033	-43.818***	-41.916**	-49.667***	-46.294***
	(20.680)	(18.823)	(15.760)	(17.746)	(17.249)	(15.358)
Other currency	-43.774***	-47.092***	-22.919*	-18.6712	-20.7171	-28.848**
	(14.346)	(12.156)	(11.774)	(13.016)	(12.725)	(10.888)
Deal with a guarantor	-12.4037	4.2185	-5.0795	-4.3782	-4.0366	-1.2073
	(10.438)	(8.822)	(5.905)	(5.320)	(4.878)	(5.135)
Syndicate concentration	50.996**	-100.18***	-84.891***	-71.392***	-71.103***	-89.732***
	(23.876)	(19.155)	(17.113)	(13.903)	(14.727)	(18.300)
Observations	6,958	6,958	6,945	6,726	6,724	6,871
R-squared	0.377	0.511	0.572	0.636	0.657	0.594
Country FE	No	No	Yes	-	-	-
Year FE	No	Yes	Yes	-	-	Yes
Industry FE	Yes	Yes	Yes	Yes	-	-
Country-Year FE	No	No	No	Yes	Yes	No
Industry-Year FE	No	No	No	No	Yes	No
Country-Industry FE	No	No	No	No	No	Yes

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Table A4: Loan Terms and MDBs' Participation—Sub-sample

Notes: The table presents OLS estimates of model 1. The dependent variable is the loan maturity (in months). MDB is a dummy equal to 1 if at least one MDB is involved in the syndication of the loan, and 0 if the syndicate includes only private banks. Leveraged and highly leveraged deals are expressed with reference to investment grade ones (the excluded category). In columns (7) and (8) risky is a dummy equal to 1 if the loan is classified as leveraged or highly leveraged, and 0 is the loan has investment grade. The excluded category for currency are deals in USD. Public is a dummy equal to 1 for deals to public sector borrowers and 0 for private sector ones. The concentration of the syndicated loan is measured by the Herfindahl-Hirschman Index (HHI) calculated on the share of each bank in the loan. The data are at the deal level. The sample period is 1994-2015. Standard errors clustered at the country and year level in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Data sources: Dealogic Loan Analytics.

Dep. Var.:	Deal value (USD million)			Maturity (in months)		
	(1)	(2)	(3)	(4)	(5)	(6)
MDB	-62.4624**	-40.5714	-53.8281**	14.5607***	15.3793***	15.1415***
	(25.515)	(24.673)	(24.782)	(4.565)	(4.782)	(4.211)
Log of total deal value				4.9152***	4.9025***	4.9171***
				(1.271)	(1.305)	(1.318)
Maturity (in months)	0.5101	0.4325	0.4724			
	(0.795)	(0.340)	(0.464)			
Number of tranches	100.6972***	106.3152***	102.9520***	8.0647***	8.1159***	7.4853***
	(18.635)	(25.339)	(21.774)	(1.331)	(1.432)	(1.206)
Leveraged	-33.8663	-22.2072	-23.1663	-8.5443***	-6.4281***	-8.1321***
	(29.445)	(29.830)	(28.425)	(1.410)	(0.829)	(1.529)
Highly leveraged	-66.1767**	-59.8099**	-36.3564	-9.6137***	-3.9710	-9.8733***
	(28.490)	(28.461)	(25.514)	(2.774)	(2.440)	(2.757)
Term loan	-42.2275**	-40.3435*	-32.7483*	8.2726***	8.1629***	8.6875***
	(18.837)	(21.351)	(16.869)	(1.971)	(2.119)	(1.969)
Public	20.6425	19.9621	11.9584	-1.7565	0.1067	-1.2744
	(27.860)	(26.575)	(32.538)	(1.885)	(1.830)	(2.274)
Euro	-30.5970	-43.1866***	-14.6425	12.6409***	9.8514***	10.6611***
	(22.389)	(13.880)	(26.313)	(2.832)	(3.072)	(2.820)
Other currency	33.8168	44.1650	38.1199	5.5948**	4.4007**	6.0950***
	(44.860)	(44.109)	(42.447)	(2.325)	(1.964)	(1.956)
Deal with a guarantor	11.6142	1.5985	12.2930	6.1454**	5.9179***	6.4195***
	(18.432)	(19.360)	(17.460)	(2.182)	(1.768)	(2.023)
Syndicate concentration	-389.6866***	-361.0716***	-387.4728***	17.3857***	19.7839***	14.5581***
	(69.103)	(84.887)	(71.003)	(3.178)	(3.127)	(2.807)
Observations	6,945	6,724	6,871	6,945	6,724	6,871
R-squared	0.211	0.296	0.254	0.383	0.476	0.427
Country FE	Yes	-	-	Yes	-	-
Year FE	Yes	-	Yes	Yes	-	Yes
Industry FE	Yes	-	-	Yes	-	-
Country-Year FE	No	Yes	No	No	Yes	No
Industry-Year FE	No	Yes	No	No	Yes	No
Country-Industry FE	No	No	Yes	No	No	Yes