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Abstract

A key policy to limit the possibility of bank runs is an explicit deposit insurance scheme, which can be either privately or government funded. Using syndicated loans from 63 countries during the period 1985–2016, we study the effect of government involvement in deposit insurance funding on price and non-price characteristics of loans. We show that changes from purely private-funded to either government-funded or jointly funded deposit insurance increase all-in-spread-drawn by approximately 4.6%, further increase loan fees, decrease loan maturity, and increase the use of performance pricing provisions. Our findings are consistent with the moral hazard problem behind government-funded deposit insurance schemes.

1. Introduction

Deposit insurance is a fundamental pillar of the financial safety net policies in many countries, constituting an integral part of their banking systems' modus operandi. The last three decades witnessed a large increase in the number of explicit deposit insurance schemes (henceforth, simply called deposit insurance) operating worldwide, and the literature has pointed out several effects of the introduction of such laws in shaping the banking landscape (e.g., Demirgüç-Kunt and Detragiache, 2002; Demirgüç-Kunt and Huizinga, 2004; Demirgüç-Kunt et al., 2015; and others). Although the effects of adopting deposit insurance are well researched, little analysis exists on the effect of funding sources. To construct their funding mechanism, deposit insurance schemes generally rely on two sources: private funds (i.e., insurance premiums paid by the banking institutions participating in the scheme) or public (government) funds (i.e., funding is either solely public or jointly provided by member banks and the government).

In the late 1990s, in approximately 65% of the countries that had adopted some form of deposit insurance, governments participated in the funding (Demirgüç-Kunt et al., 2005). Since the mid-2000s, a gradual change from government or jointly funded deposit schemes to exclusively privately funded schemes has taken place in several countries. As of 2015, in more than 75% of countries where deposit insurance is used, the legal requirement is that deposit insurance funding must come exclusively from contributions by the insured banks (Demirgüç-Kunt et al., 2015). This development naturally generates a research question about whether government involvement in deposit insurance funding affects bank lending. This is the question we answer in this paper.

From a theoretical viewpoint, the effect of government involvement in deposit insurance funding is ambiguous. On one hand, purely private funding of deposit insurance is costly to banks, who might aim to pass this cost (at least partially) along to their borrowers (the passing-cost view). This implies a straightforward mechanism through which we should

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observe higher lending rates in countries with privately funded deposit insurance. In contrast, the public sector's supplementary funding reduces the relevant cost for the member banks, potentially allowing these banks to provide more-competitive lending terms or laxer lending terms altogether (e.g., lower collateral and covenant requirements).

On the other hand, there is a standard moral hazard–adverse selection argument against government involvement. Specifically, government-funded deposit insurance potentially encourages inferior screening and monitoring of borrowers, which in turn leads to more-stringent price and non-price lending terms. Further, the pool of borrowers within a government-funded scheme might on average be more risky. The outcome is less efficient banking with higher loan defaults (e.g., Beck, 2002; Kaminsky and Schmukler, 2003; Brissimis et al., 2008; Andries and Capraru, 2013). If this mechanism prevails, we expect more competitive lending terms in banking systems with solely privately funded deposit insurance, in spite of the extra cost imposed on participating banks.

To examine the effect of deposit insurance funding source on intermediation efficiency and bank lending decisions, we match information on deposit insurance schemes with syndicated loan deals (data from DealScan). The syndicated loans are provided by one or more lead lenders and participant banks to a single firm. These data are ideal because they provide information on lending terms (both price and non-price) of large corporate loans originated across several countries with different and changing deposit insurance schemes. DealScan covers the post-1985 period, but for most countries coverage starts around 1993–94. Since then, we document 38 regulatory changes in 32 countries in the deposit insurance funding source (from purely private to government or jointly funded, or vice versa). Also, approximately 47% of the corporate loans are provided by banks operating in countries with privately funded deposit insurance and 53% by banks in countries where the government participates in the

schemes. Thus, our sample has considerable variation in the funding source of deposit insurance schemes both across countries and years.

We carry out our empirical analysis at the loan level (loan facilities), as this is particularly helpful with empirical identification. Specifically, most banks (firms) in our sample extend (receive) several loans. This allows us to use bank and firm fixed effects to control for several bank-, firm-, and country-specific (time-invariant) characteristics that potentially affect lending terms. Identification in these models comes from within-country changes in the funding sources of deposit insurance schemes. Given that the changes in the schemes take place in different years, our model represents a differences in differences (DID) model with variation in treatment timing (Goodman-Bacon, 2018). We further control for several bank-year characteristics (reflecting capital, risk, size, and performance), firm-year characteristics (leverage, value, performance, and size), and quite importantly, more than 100 country-year variables, reflecting countries' economic, financial, regulatory, and general institutional environment.

In an important robustness test, we also use an instrumental variable (IV) based on the practice of countries in the region on deposit insurance schemes. Specifically, we use regional waves in changes of the deposit insurance funding source, excluding the own country, controlling in the first stage for numerous country-specific institutional and macroeconomic variables (including bilateral trade flows). This instrumentation follows Acemoglu et al. (2019) in their study of the effect of democracy on economic growth; Delis et al. (2019) in their study of the effect of democracy on bank lending; and, importantly, Demirgüç-Kunt and Detragiache (2002) in their study of the effects of adopting an explicit deposit insurance scheme on bank risk and financial stability.

Our baseline specifications show that government involvement in deposit insurance funding leads to an increase in the all-in-spread-drawn (defined as the spread over LIBOR plus

any facility fee) by approximately 11 basis points (equal to a 4.6% increase compared to the mean all-in-spread-drawn in our sample). This price increase is economically significant, translating to a $1.5 million higher cost of credit (for the mean loan), and denotes more competitively priced corporate loans from banks operating in countries with exclusively privately funded deposit insurance. Further, loan fees (in particular, commitment and facility fees) increase by more than 7% compared to our sample's average.

Our findings survive a large battery of sensitivity tests. First, our results become slightly more potent when using our IV approach: we find that government-funded deposit insurance increases the all-in-spread-drawn by 14 basis points, while the increase in loan fees is approximately 8%. We next show that our results are robust to the inclusion of more than 100 country-specific controls, including controls for other bank regulations and/or institutions or the occurrence of systemic banking crises. Further, our results are robust to the use of (i) different fixed effects and standard error clustering, (ii) different subsamples, and (iii) different loan-level controls and a SUR model to avoid a "bad controls" problem.

Overall, our findings are consistent with the moral hazard viewpoint of deposit insurance funding, indicating less incentive on the part of depositors to monitor bank lending decisions and on the part of banks to monitor borrowers and lead arrangers' lending strategies in the syndicated loan industry. These effects dominate over the "passing cost" view and intensify the moral hazard problems already caused by the presence of deposit insurance. This in turn leads to higher lending rates and overall cost of credit.

This study is the first that directly ties the deposit insurance funding source to banks' lending decisions and mainly contributes to two strands of literature. First, we extend the results of studies by Demirgüç-Kunt and Detragiache (2002), Demirgüç-Kunt and Huizinga (2004), and Gropp and Vesala (2004), which focus on the effects of establishing an explicit deposit insurance scheme on bank risk and performance. Second, we contribute to the literature on

institutional determinants on lending terms (e.g., Qian and Strahan, 2007; Delis et al., 2019). These institutional determinants come in the form of creditor rights or general political institutions, and the effect of bank regulations on lending terms is relatively understudied. Section 2 reviews the existing literature so as to motivate our study, explores the potential effect of deposit insurance funding sources on lending terms, and specifies our paper's research question. Section 3 describes the dataset and its suitability to answer our main research question, and discusses our approach to identify a causal effect running from deposit insurance funding to bank lending terms. Section 4 presents the empirical results, and Section 5 concludes, discussing the policy implications based on our findings.

2. Theoretical considerations

2.1. General economic effects of deposit insurance and its funding sources

An explicit deposit insurance scheme is considered a significant regulatory pillar for the promotion of financial stability, first established in the U.S. as a policy reaction to the Great Depression and associated bank runs. Although no other country adopted an explicit deposit insurance scheme until the 1960s, almost every country currently has one in place. During the 1990s, the use of explicit deposit insurance schemes spread rapidly. In the years leading up to and during the 2007 global financial crisis, a large number of countries either enacted deposit insurance for the first time (e.g., Australia, New Zealand) or made numerous changes in their schemes (to become more extensive in coverage and/or change funding sources). Currently, more than 113 countries have adopted some form of deposit insurance and several others are considering doing so (Demirgüç-Kunt et al., 2015; Bergbrant et al., 2016). This group represents more than 85% of high-income countries (according to the World Bank definition) and 96% of European countries.

A considerable literature focuses on the benefits and drawbacks of deposit insurance. Although deposit insurance schemes were adopted primarily to enhance public confidence in the banking system, prevent inefficient bank runs, and protect small depositors (Diamond and Dybvig, 1983; Demirgüç-Kunt and Huizinga, 2004), the literature also highlights adverse effects (Demirgüç-Kunt and Kane, 2002; Calomiris and Jaremski, 2016). Specifically, the existence of deposit insurance is linked to lower growth of the financial system (Bergbrant et al., 2016) and an increase in the likelihood of banking crises (Kane, 1989; Wheelock and Wilson, 1995; Demirgüç-Kunt and Detragiache, 2002; Barth et al., 2004), and financial fragility (Demirgüç-Kunt and Detragiache, 2002; Beck, 2002; Demirgüç-Kunt and Huizinga, 2004; Anginer et al., 2014; Calomiris and Jaremski, 2016). The source of the adverse effects is mainly moral hazard via excessive risk-taking by banks (Merton, 1977; Keeley, 1990; Kane, 1989; Beck, 2003; Demirgüç-Kunt and Huizinga, 2004; Ioannidou and Penas, 2010; DeLong and Saunders, 2011; Barth et al., 2013; Beck et al., 2013; Anginer et al., 2014; Lambert et al., 2017; Brandao-Marques et al., 2020).

A deposit insurance scheme is financed either exclusively by covered institutions (i.e., the member banks fund the scheme and contribute premiums to build the funding pool) or with government participation in the funding. In the latter case, the scheme is either solely government funded (i.e., with no involvement from the private sector) or jointly funded (i.e., partially funded by premiums levied on member banks and eligible for additional government resources when the system is established or if a crisis occurs). Government-funded deposit insurance refers to both startup and ongoing funding. Such schemes of course depend on a government's ability to generate income (through taxes and other common sources), but governments might also face considerable public and internal pressure to provide the funds in light of a large failure.

In contrast to the large literature on the effects of initiating a deposit insurance scheme, we know much less about the potential effects of a scheme's funding sources. These effects deserve special attention because they are crucial to the overall design of a deposit insurance scheme (IADI, 2009) and banks' performance (Beck, 2002). Further, despite the almost universal adoption of deposit insurance, funding sources differ significantly between countries and over time (Beck, 2002; IADI, 2009; Demirgüç-Kunt et al., 2015).

2.2. Funding source and corporate lending

Theoretically, government participation in deposit insurance funding can have both positive and negative effects on the cost of credit. On the positive side, the argument is fairly straightforward: if a scheme collects premiums from the member banks, these banks might opt to pass along the cost (at least partially) to the borrowing firms. This scenario would in turn generate more stringent lending terms, leading to inefficient economic outcomes in terms of higher investment costs, use of stricter loan covenants, and/or lower credit volume. If instead governments finance the scheme, the lower costs incurred by banks can be viewed as a transfer to borrowers and yield more competitively priced lending and more efficient corporate financing. Accordingly, other non-price terms of lending might be better for firms, including fewer covenants, performance provisions, and collateral requirements.

On the other hand, and consistent with the "moral hazard" view of deposit insurance, government participation in deposit insurance funding might lead banks to adopt riskier lending strategies and originate loans with higher interest rates than they would if the deposit insurance were entirely bank funded. Demirgüç-Kunt and Detragiache (2002) provide evidence that overall financial stability (at the macro level) is weaker when deposit insurance schemes operate with some form of government support. Along the same line, Demirgüç-Kunt and Huizinga (2004) argue that government-funded schemes lead to inferior screening and

monitoring of lending institutions, introducing additional adverse selection and moral hazard, and eventually encouraging unnecessary risk-taking by banks.

In our context, the theoretical arguments on inferior lending terms resulting from government-funded deposit insurance imply that banks finance riskier borrowers and higher-risk projects than they normally would. These decisions in turn imply an increase in lending rates and loan guarantees to cover the higher risks. In contrast, privately funded schemes are more flexible in monitoring and controlling (England, 1985; Ely, 1986), as well as enhancing regulatory incentives to monitor and discipline excessive bank risk-taking (Kane, 2000). In addition, in privately funded systems, member banks further encourage monitoring among each other, in this way replacing monitoring by depositors and creditors with peer monitoring (Beck, 2002; Demirgüç-Kunt et al., 2015). Thus, within privately funded deposit insurance, we expect less risky lending at lower rates and fewer guarantees.

Given the two opposing arguments, the effect of the deposit insurance's funding source on the corporate lending terms becomes an empirical question, which we take up in the following empirical analysis.

3. Data, variables, and summary statistics

3.1. Data and variables

We use data from two main sources. First, we use syndicated loan-level data from DealScan. We exclude facilities without conventional pricing and other missing information on important variables. DealScan has information for the banks and firms involved in the loan, loan pricing (loan spreads and some information on fees), amount, maturity, number of lenders, and loan guarantees (collateral, covenants, and performance pricing provisions). We conduct our analysis based on lead banks, which make all the important loan decisions, including loan pricing decisions. For loans with more than one lead banks, therefore, the number of

observations for that loan equals the number of lead banks. The reason is that deposit insurance is attached to each lead bank and in some cases, lead banks for the same loan are from different countries and thus are subject to different deposit insurance schemes.

Second, we match the loans with information on the deposit insurance funding source and other deposit insurance characteristics (the extent of coverage, how the specific insurance scheme is managed, etc.) in the lead banks' countries. Information is from Demirgüç-Kunt et al. (2015), who obtain their original information from (i) several surveys carried out by the International Association of Deposit Insurers (IADI), (ii) the European Commission, (iii) a combination of country sources, and (iv) International Monetary Fund (IMF) staff reports. To obtain information for historical changes in deposit insurance schemes, we also use Talley and Mas (1990), Kyei (1995), Garcia (1999), Demirgüç-Kunt and Sobaci (2001), Demirgüç-Kunt et al. (2005), EFDI (2006), Demirgüç-Kunt et al. (2008), World Bank (2011), and Laeven (2013).

Still, there are several countries for which the aforementioned studies provide no information for the year in which a deposit insurance scheme changed. For these countries, we obtain information directly from online sources or asked the country authorities.

In our sample, loans l are originated by lead banks b to firms f in country c and in year t. We draw inferences from the following model:

$$Loan\ term_{lbfct} = a_0 + a_1 DI\ Funding\ source_{c,t-1} + a_2 Other\ DI\ features_{c,t-1} +$$

$$a_3 L_{lt} + a_4 F_{fct} + a_5 B_{bct} + a_6 C_{c,t-1} + u_{lbfct}. \tag{1}$$

$Loan\ term$ indicates the price or non-price terms of a loan facility. The price terms include the all-in-spread-drawn (*AISD*), which is the basis point spread of a loan facility over LIBOR, inclusive of any facility fee. We also use all-in-spread-undrawn (*AISU*), which is the sum of

the facility and commitment fees.[1] The non-price lending terms include *Loan amount*, *Loan maturity*, *Collateral*, *Performance provisions*, and *Total covenants*, and these represent the most important design features of loan contracts (Sufi, 2007; Ivashina, 2009). We thoroughly define these variables, along with all other variables in our empirical analysis, in Table 1.

[Please insert Table 1 about here]

Our main explanatory variable, *DI Funding source*, is a binary variable equal to zero if the deposit insurance (DI) scheme is funded exclusively by the participating lending institutions and one if the scheme is either jointly funded by governments and banks or solely government funded. We assume that previous year's funding source affects the current lending terms. Besides being theoretically plausible, this practice reduces simultaneity concerns (also given the use of several controls and fixed effects). We prefer to use a dummy variable instead of the actual amounts of funding or a variable distinguishing among the three states (private, partial government, full government) for two main reasons. First, even a small amount of explicit government participation in the funding pool is enough to introduce moral hazard; in the event of adverse developments, the expectation would be for the government to step in with all the necessary funds to bail out banks (e.g., Demirgüç-Kunt and Huizinga, 2004). Second, using the actual fund amounts requires assumptions about the magnitude of the regulated banking system, which is hard to identify in several developing countries.

In turn, *Other DI features* is an index of other deposit insurance characteristics that might separately affect *Loan terms*. For the construction of this index, we rely on Demirgüç-Kunt et al. (2015) and earlier studies (e.g., Demirgüç-Kunt and Detragiache, 2002; Demirgüç-Kunt and Huizinga, 2004; Demirgüç-Kunt et al., 2008); Table 1 provides the details. *Other DI features* takes values from zero to six, with higher values indicating more-stringent deposit

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[1] Berg et al. (2016) analyze the pricing structure that U.S. lenders use to construct the total price of a loan. Unfortunately, either the global syndicated loans data lack information on some fees or loans in other countries do not have specific types of fees. Thus, we use the drawn and undrawn variables separately—that is, we do not construct a total cost of loans variable (for similar implementation, see Qian and Strahan, 2007; Delis et al., 2019).

insurance schemes. We expect that larger values, representing extensive coverage, *ex ante* funded schemes, voluntary membership, etc., reflect higher moral hazard and potentially less competitive lending terms.

Further, *L*, *F*, *B*, and *C* in Equation (1) are vectors of loan, firm, bank, and country characteristics, respectively. In specifications using price lending terms as the outcome variable, we use non-price lending terms as controls and vice versa (with a caution to avoid a "bad controls" problem). We also control for the number of lenders in the syndicate (*Number of lenders*) and a series of dummy variables denoting loan type (e.g., term loans, revolvers, acquisition facilities, etc.) and loan purpose (e.g., corporate purpose, debt repay acquisition lines, etc.).[2]

At the firm-year level (information from Compustat and Orbis), we control for the log of total firm's assets (*Firm size*), the market-to-book value ratio (*Market-to-book*), and firm's leverage (*Leverage*). We also experiment with other firm controls (e.g., cash flow, profitability indicators, tangibility, etc.) but find that these additions do not affect our results either qualitatively or quantitatively.

At the bank-year level (information from Bankscope), we control for the ratio of pre-tax profits to total assets *(Return on assets),* the ratio of non-performing loans to total loans *(Non-performing loans)*, the ratio of total bank capital to total assets *(Capital ratio)*, and the log of total bank assets *(Bank size)*. Again, using additional bank controls does not significantly affect our estimates.

The country-year control variables (again, Table 1 provides thorough definitions) are important to avoid attributing the effect of other country characteristics to the deposit insurance funding source. We first use economic growth (*GDP growth*) in the borrower's country to

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[2] Controlling for loan type is especially important because 76% of the term loans have no fee (see also Berg et al., 2016).

control for the general economic incidence. In further specifications, we additionally control for the *GDP growth* in the bank's country, without noting significant changes in our results. We also use *Stock-market capitalization* as a measure of financial development in the lender's country. Further, we use the *Creditor rights* index by Djankov et al. (2007), which the literature shows to play a crucial role in shaping loan spreads (Qian and Strahan, 2007; Bae and Goyal, 2009). To examine whether financial crises affect our results, we additionally introduce *Bank crisis* in sensitivity tests. In line with Delis et al. (2019), we experiment with more than 100 other country-year control variables, obtained from several sources (see Appendix Table A1). We find no significant changes in the results when using these additional controls.

We also control for variables capturing other general bank regulatory and supervisory environments. We use the power of supervisory authorities (*Official supervisory power*), the general capital stringency (*Capital regulations*), and the degree to which regulatory and supervisory policies encourage private monitoring of banks (*Private monitoring*). We provide thorough definitions and data sources for these variables in Table 1. Given that information for bank regulation and supervision is available only beginning in the late 1990s, we include these controls only in sensitivity tests to avoid losing observations.[3]

Finally, the term a_0 in Equation (1) indicates the inclusion of bank, firm, and year fixed effects. These fixed effects are important for identification purposes, as further discussed in the following sections.

3.2. Summary statistics and correlations

The number of observations in our benchmark specification is 134,319, consisting of loans originated by lead banks operating in 63 countries in the period 1985–2016. Approximately

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[3] The surveys by Barth et al. come in four waves in 1999, 2002, 2005, and 2011. We use the regulatory and supervisory variables from the 1999 survey for the observations since 1996, assuming that applying the values for earlier years might introduce severe measurement error.

90% of the loans are granted from 1995 onward. We provide basic summary statistics for our sample in Table 2. The mean loan has an *AISD* equal to 238.97 basis points. There are a few (24) loan facilities with negative *AISD*, which means that the reported spread is below LIBOR. We keep these loans in our sample because they do not play a significant role in our estimates.

[Please insert Table 2 about here]

In Table A2 of the Appendix, we report the number of loans by lender country along with the mean and standard deviation of *DI Funding source*. Among the 63 countries in our sample, 20 had privately funded deposit insurance and 11 had government-funded or jointly funded deposit insurance during the full sample period. In the remaining 32 countries, there are 38 changes in deposit insurance funding source. These 32 countries are those from which we mostly obtain identification of causal effects of *DI Funding source* by studying within-country changes in lending terms pre- and post-change (given the inclusion of bank fixed effects and that banks are headquartered in the same country). Interestingly, 47% of the observations (63,394 observations) concern loans given by banks in countries where deposit insurance funding comes solely from private sources and 53% (70,925 loans) where the government participates.

To address the potential concern that *Other DI features* is highly correlated with *DI Funding source*, we compute their pairwise correlation and find it approximately equal to 36% (Appendix Table A3). We also report pairwise correlations between *DI Funding source* and all the individual components of *Other DI features* in Table A4. These correlations never exceed 38%.

4. Empirical identification and results

4.1. Identification method

Our identification approach maps those of Qian and Strahan (2007), Bae and Goyal (2009), and Delis et al. (2019), who analyze the effect of country-specific creditor rights and democracy on loan pricing using syndicated loan data. Our loan-level data, with most banks (firms) lending (borrowing) multiple times, significantly reduce the possibility of endogeneity bias because they allow using several types of fixed effects.

Specifically, we introduce bank fixed effects to control for time-invariant bank characteristics. Banks in our sample are involved in several loan facilities and, because *DI Funding source* is attached to the lead banks' countries, these fixed effects imply identification from the 38 changes in the schemes' funding sources. We also use firm fixed effects to control for time-invariant firm characteristics and year fixed effects to control for shocks common to all banks, firms, and loans.

Importantly, the use of bank fixed effects in our context carries more than the usual interpretation of the fixed effects model. It also implies that Equation (1) represents a two-way fixed effects DID model when treatment timing varies. In our context, the treatment is the changes in *DI funding source*, the timing of which varies by country. Goodman-Bacon (2018) shows theoretically and empirically that when the treatment timing in panel data varies, the inclusion of cross-sectional fixed effects (here, bank fixed effects, because they also control for country fixed effects) collapses the usual 2×2 DID model (the model including the interaction term as the DID identifier) to a model in which the DID identifier is the coefficient on the treatment variable (here, *DI funding source*). The fact that there are multiple treatments that occur in different time periods carries the additional advantage of controlling for potentially concurrent changes in other bank regulations alongside time-varying firm and bank characteristics shaping lending terms. Goodman-Bacon (2018) provides a nice description of existing literature on this class of models.

As a robustness test, we use recent literature in economics and finance that explores regional waves of changes in institutions or regulations as an IV in a two-stage least squares (2SLS) model (Acemoglu et al., 2019; Delis et al., 2019). The exclusion restriction is that regional waves of changes in regulations (excluding the own country), while controlling in the first stage for the macro dynamics in the own country, affects loan spreads only through the effect on the change in regulations in that own country. Demirgüç-Kunt and Detragiache (2002) precisely show that the proportion of countries already using deposit insurance is a good instrument for measuring the adoption of deposit insurance, given that policymakers are heavily influenced by standard practice in these technical matters. In other words, and following the literature on changes in institutions (e.g., Acemoglu et al., 2019), the factors creating regional waves of changes in bank regulations are not only explained by economic changes but, equally important, by a demand for changing bank regulations (and thus deposit insurance) in line with the propositions of international organizations and standard practice of close countries.

We tighten the approach of Demirgüç-Kunt and Detragiache (2002) by using regional waves of changes in the funding of deposit insurance as our IV and controlling in the first stage for the macroeconomic, institutional, and bank regulatory dynamics of own countries (following the paradigm of Acemoglu et al., 2019; Delis et al., 2019). We include the full details used to estimate our *Regional DI funding* in the Appendix; here we provide the intuition for our refinements.

Specifically, the regulation–bank lending nexus might imply a three-way correlation among general bank regulations (i.e., not specific to deposit insurance), the economic environment (mainly economic growth), and the cost of credit. This is because loan spreads are cyclical, decreasing in good economic periods and increasing in periods of uncertainty. General bank regulations might react to this cyclicality in order to smooth problems related to

financial instability. An obvious buffer against this potential three-way correlation is to control for both regional and domestic GDP growth as well as bank regulations in both stages of our IV model. Then, in the two-stage IV model, the standard exclusion restriction suggests that *Regional DI funding* affects *AISD* only via *DI funding source*, conditional on controls for economic growth and the regulatory environment in both the region and the domestic country. To this end, we include all types of regulations (previously used as controls in our DID approach) and GDP growth in both stages of the IV model.

Second, we acknowledge that an alternative channel through which regional changes in deposit insurance can affect domestic loan pricing is trade. In episodes of abrupt changes in financial regulations and institutions, disruptions in trade can arise between a country and its wider region. In turn, trade disruptions can substantially affect domestic economic conditions and the cost of credit. To this end, we control for annual trade growth (or recession) between the region and the own country (variable named *Regional trade* and defined in Table 1) in our IV model. We run several other sensitivity tests using different sets of control variables in our IV approach, as highlighted in the following section; our results remain robust.

4.2. Results for loan pricing

Table 3 reports coefficient estimates and standard errors clustered by the lender's country (the cross-sectional unit of *DI funding source*) from our DID model. The first column reports results from the specification including only loan-level controls and *Other DI features*. In columns (2) and (3), we add firm- and bank-level controls, while in the third specification we further control for *Creditor rights* and *GDP growth*.

We observe that government involvement in deposit insurance funding affects the cost of lending significantly, both statistically and economically. Specifically, government funding of deposit insurance increases spreads by approximately 11 basis points (according to the most

restrictive specification 3), equal to a 4.6% increase for the average *AISD* in our sample (238.97 basis points). This result is economically significant. Given that the mean sample loan size is $301 million and the average loan's time to maturity is approximately four and a half years (54 months), a bank operating in a country with government-funded or jointly funded deposit insurance will receive higher interest income from each loan of around $1.5 million (= 301.20 × 0.0011 × 4.5). Thus, firms borrowing from banks in countries with exclusively privately funded deposit insurance have a competitive advantage in loan pricing.

[Please insert Table 3 about here]

In contrast, *Other DI features* is statistically insignificant. This result is somewhat expected because there is no considerable variation across the other design characteristics of deposit insurance, and firm and bank fixed effects absorb any potential effect. Specifically, almost 90% of the observations in our sample are from countries where a deposit insurance provides coverage for foreign currency deposits; for 83% of the observations, deposit insurance is *ex ante* funded; for 92%, the government participates in the administration of the scheme; and for 99%, participation in a deposit insurance is obligatory. Thus, the key element of deposit insurance affecting loan pricing is *DI funding source*.

The effects of firm characteristics are consistent with the literature (e.g., Qian and Strahan, 2007; Ivashina, 2009; Bae and Goyal, 2009; Delis et al., 2019). Essentially, risk, performance, and size are the most important firm characteristics shaping lending terms. Larger firms are perceived as having a lower probability of default and are usually financially less opaque; they thus pay lower spreads. Similarly, firms with higher market-to-book ratios pay lower spreads whereas leveraged ones pay higher spreads. Including the firm-year controls in the empirical model reduces the effect of *DI funding source* from 15.2 basis points in column (1) to 11.3 basis points in column (2), highlighting the importance of these variables in explaining banks' loan pricing decisions.

Concerning bank characteristics, size does not play a significant role in banks' loan pricing decisions, but *Return on assets* and *Capital ratio* have significant effects. These findings are intuitive given that highly profitable and well-capitalized banks can provide credit at more competitive terms. Further, the ratio of non-performing loans to total loans has a significant and positive effect on the cost of credit. This implies that banks holding a large share of very risky loans increase the spread charged to borrowers.

In line with the finding on *Other DI features*, the effect of *Creditor rights* is statistically insignificant. This result is probably because of the inclusion of bank and firm fixed effects and the fact that creditor rights do not substantially change over time. In the Appendix Table A5, we replicate the baseline specification excluding bank and firm fixed effects. In line with Bae and Goyal (2009), who do not use fixed effects, *Creditor rights* turns significant; however, the adjusted *R*-squared decreases from 80% to approximately 65%. Also in line with expectations, *GDP growth* enters with a negative and statistically significant coefficient, reflecting the adverse effect of a negative economic environment on loan spreads.

Overall, our findings indicate that banks provide more-expensive syndicated loans when deposit insurance is financed partly or exclusively by public sources. On the other hand, banks in countries with privately funded deposit insurance price syndicated loans more competitively. This dynamic is a strong indication that privately funded deposit insurance is beneficial both for borrowing firms and for real economic activity.

We conduct a first wave of robustness tests on our benchmark specification and report the results in Table 4. To examine whether a "bad controls" problem drives our results because we include potentially simultaneously determined loan-level variables, we experiment with different specifications that exclude specific groups of these controls (Delis et al., 2019). In column (1), we omit all the loan-level controls; in column (2), we exclude the loan guarantees (*Collateral, Performance provisions*, and *Total covenants*); and in column (3), we exclude

Loan amount, *Loan maturity*, and *Number of lenders*. Evidently, our results are almost unchanged compared with those of column (3) of Table 3.[4]

[Please insert Table 4 about here]

In specification (4) of Table 4, we add a set of control variables for banking regulation and supervision. The introduction of the *Official supervisory power, Capital regulations,* and *Private monitoring* variables reduces the number of the observations, because we have no information for these variables before 1996. Again we obtain very similar results, with the regulatory and supervisory variables being statistically insignificant at any level.

In column (5), we further control for the potential impact of *Bank crisis* on the baseline results. We expect an increase in the cost of lending resulting from increased uncertainty during crisis periods. The baseline results remain unaffected, whereas the effect of *Bank crisis* is statistically insignificant. Essentially, this is a placebo test because any crisis effect should be captured by our control variables and the year fixed effects (indeed removing the year fixed effects yields a positive and significant coefficient on *Bank crisis*).

In specifications (6) and (7), we introduce stock market capitalization and GDP growth in the lead bank's country as controls for financial development and economic incidence affecting the supply-side decisions of banks. Again, we find no significant changes compared with our baseline results. We confirm the robustness of our baseline findings to the use of several other macro control variables for the lender's and the borrower's country; we list these variables in Appendix Table A1.

We report results from additional robustness tests in the Appendix. In Table A6, we cluster standard errors by (i) loan facility and year or (ii) lender's country and year to account

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[4] Following Gropp et al., (2014), we also estimate a Seemingly Unrelated Regression (SUR), with *AISD*, *Loan amount*, and *Loan maturity* as dependent variables. We find that the effect of deposit insurance is even stronger in this model. Adding more equations for *Collateral* and *Covenants*, leaves our main inferences unchanged. Thus, the SUR model also rules against the "bad controls" problem driving our inferences. These results are available on request.

for possible dependence of loans or countries within years. In Table A7, we (i) include only the most conventional corporate loans (term and revolver loan deals) or (ii) exclude loans for leveraged buyouts (LBOs) and mergers and acquisitions (M&As). The reasoning is that, for such loans, banks usually have additional information for the borrowing firms, resulting in lower spreads (Ivashina and Kovner, 2011).

We next examine whether the funding source of deposit insurance affects the *AISU*, which includes commitment and facility fees. We find a positive and significant effect. Specifically, the results reported in Table 5 show that government funding of deposit insurance increases *AISU* by approximately 7.4% for the average *AISU* in our sample (equal to 33.99 basis points). Sensitivity tests on these results (shown in Table A8 in the Appendix) further support this finding. We conclude that besides affecting loan spreads, government funding of deposit insurance increases commitment and loan facility fees, thereby further enhancing the positive effect of deposit insurance on the cost of credit.

[Please insert Table 5 about here]

The last and perhaps most important robustness test of our analysis on the effect *of DI funding source* on loan spreads and fees is the IV (2SLS) model discussed in Section 4.1. In Table 6, we report the IV results for important specifications of *AISD* and *AISU*; we note, however, that all the results reported in the previous tables hold. The first-stage estimate on our IV, *Regional DI source*, is exceptionally statistically significant and easily passes across all specifications the threshold of the weak identification test reported in the lower part of the table. In the lower part of Table 6, we also report the results from OLS regressions, where *Regional DI source* directly enters as an explanatory variable in the *AISD* and *AISU* models. For the exclusion restriction to be satisfied, the effect of *Regional DI source* in these models should be statistically insignificant—and our results confirm this.

Turning to the estimates on DI funding source,[5] we find slightly stronger effects compared with those reported in the previous tables. In column (1), the effect of *DI funding source* on *AISD* equals 12.3 basis points, whereas the standard error is also slightly larger. The effects are also somewhat more potent (along with slightly larger standard errors) when controlling for other bank regulations in column (2) and stock market capitalization in column (3). The larger standard errors is a classic problem with the IV models; in our setting, however, this increase is not particularly strong, also highlighting the strength of our IV in the first-stage estimates. We document similar findings in the corresponding AISU regressions (columns 4 to 6). Again, the effects are, if anything, a bit larger than those in Table 5. Overall, our IV results are completely aligned with those from the DID OLS specifications.

4.3. Results for non-price lending terms

This section considers the effect of the deposit insurance funding source on loan amount, loan maturity, and loan guarantees. Given our finding of a positive effect of *DI funding source* on loan pricing, we expect that, if anything, the loan amount will be smaller. The results in the first part of Table 7, however, do not show a robust negative effect of *DI funding source* on *Loan amount*. This finding is further corroborated by robustness tests in Appendix Table A9, which show that the statistical significance of *DI funding source* is lost when we control for *AISD*.

In contrast, as evident from the second part of Table 7, *EDIS funding source* has a statistically significant effect on *Loan maturity*. We find that when the funding scheme is publicly or jointly funded, loan maturity is limited by approximately two months or 3.9% for the duration of the average loan in our sample. This effect is robust to the "bad controls"

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[5] For expositional brevity, we do not report the results on all our control variables. The corresponding estimates are largely similar to those reported in the OLS specifications.

problem and other sensitivity tests reported in Table A10, and it is generally consistent with the premise that in light of taking more risk under the moral hazard mechanism of government-funded deposit insurance, banks aim for loans with shorter maturity.

In Table 8, we examine the effect of *Funding source* on *Collateral*, *Performance provisions*, and *Total covenants*. *Collateral* and *Performance provisions* are binary variables, and using probit or logit models implies econometric efficiency gains. We prefer a linear probability model, however, because of the presence of multiple fixed effects that cause convergence problems in our estimations.[6]

The effect of *DI funding source* on *Collateral* in the first three columns of Table 8 is statistically insignificant. This is also the case in most of the specifications of Table A11, especially those using the full set of control variables. We find similar results for *Total covenants* in specifications 7 to 9 of Table 8 and in Appendix Table A13. In contrast, we document a positive and significant effect of *DI funding source* on the probability of using performance-pricing provisions. Specifically, government involvement in deposit insurance increases the probability of a loan contract having performance-pricing provisions by 1.8%. The results are similar to the robustness specifications in Appendix Table A12. This is an economically small increase, however, highlighting that the main effect of government funding of deposit insurance is channeled via loan spreads and fees, and not so much via other qualitative characteristics of loans.[7]

[Please insert Tables 7 and 8 about here]

5. Policy implications and concluding remarks

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[6] Probit models have well-known problems in the presence of fixed effects. Logit models accommodate fixed effects but, in the case of multiple fixed effects, the maximum likelihood function faces convergence difficulty in several specifications.

[7] We note that all our inferences in Section 4.3 hold when using the 2SLS model. These results are not reported and are available on request.

Theoretical considerations from the industrial organization literature predict that any increased regulatory cost imposed on banks, here in the form of privately funded deposit insurance, will be passed at least partially to borrowers. In contrast, a standard moral hazard argument with limited liability predicts that government-funded deposit insurance increases the risk-taking appetite of banks. This paper empirically examines which of the two theoretical viewpoints dominates. Using the global syndicated loan market as our laboratory, we identify changes in lending terms following changes in deposit insurance schemes from purely privately funded to government (or jointly) funded, and vice versa.

We find that government involvement in deposit insurance funding has an economically important effect on the all-in-spread-drawn (a 4.6% increase compared with our sample's average). The facility and commitment fees increase at an even higher rate. We also document a moderate decrease in loan maturity (in months) and a small increase in the probability of using performance pricing provisions.

Our results have two main implications. First, firms that borrow from banks operating in countries with exclusively privately funded deposit insurance have a competitive advantage because they can obtain credit at a lower cost (approximately $1.5 million for the mean loan). Thus, privately funded deposit insurance can be viewed as a mechanism that allows banks to provide credit on favorable terms, enhance investments, and promote the real economic activity. Second, consistent with Pareto improvement considerations, privately funded deposit insurance lowers moral hazard in the corporate lending market without increasing public cost. Thus, our findings have clear implications in favor of laws and regulations on deposit insurance funding from the insured banks.

Our findings set the pathway for additional research on the effects of other deposit insurance characteristics. Specifically, the effects of the extent of coverage, the existence of *ex ante* funding or risk-assessed premiums, and the means of deposit insurance administration

have not received special attention in the literature, despite their importance in key theoretical issues in banking and corporate finance regarding regulation, asymmetric information, and limited liability. We leave these ideas for future research.

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Table 1. Variable definitions and sources

Variable	Description	Source
A. Dependent variables		
AISD	The sum of the spread over LIBOR plus the facility fee.	DealScan
AISU	The sum of the facility and commitment fee.	idem
Loan amount	Natural logarithm of the loan facility amount in millions of dollars.	idem
Loan maturity	Loan duration in months.	idem
Collateral	A dummy variable equal to one if the loan is secured with collateral and zero otherwise.	idem
Performance provisions	A dummy variable equal to one if the loan has performance pricing provisions and zero otherwise.	idem
Total covenants	The sum of general and financial covenants in the loan contract.	idem
B. Explanatory variables: Funding source and design characteristics of EDIS		
DI funding source	A variable equal to zero if the funding of the explicit deposit insurance scheme comes solely from the banks and one if the government participates in funding.	Demirgüç-Kunt et al., (2015) and earlier surveys
Other DI features	Index of specific deposit insurance design characteristics by taking into account the following six features: (i) Foreign currency deposits: a variable equal to zero if the explicit deposit insurance scheme does not cover foreign currency deposits and one otherwise; (ii) Interbank deposits: a variable equal to zero if the explicit deposit insurance scheme does not cover interbank deposits and one otherwise; (iii) Ex-ante funding: a variable equal to zero if the explicit deposit insurance scheme funded ex-post and one if it is funded ex-ante; (iv) Not risk-adjusted premiums: a variable equal to zero if the premiums for the deposit insurance scheme are assessed for risk and one if premiums are not risk-based; (v) Administration: a variable equal to zero if the explicit deposit insurance scheme operates with private administration and one if scheme is either jointly (private-official) or officially managed and (vi) Membership: a variable equal to zero if membership to an explicit deposit insurance scheme is compulsory and one if the membership is voluntary. The Index takes values from 0 to 6 with higher values indicating higher moral hazard.	Demirgüç-Kunt et al., (2015), earlier surveys
C. Explanatory Variables: Loan characteristics		
Number of lenders	The number of banks involved in the syndicated loan.	DealScan
Loan type	A series of dummy variables indicating loan type (e.g., term loans, revolvers, acquisition facilities, etc.)	idem
Loan purpose	A series of dummy variables indicating loan purpose (e.g., corporate purpose, debt repay, acquisition lines, etc.).	idem
D. Explanatory variables: Firm characteristics		
Firm size	Natural logarithm of total firm assets.	Compustat/Orbis
Market-to-book	The logarithm of the market value of assets to the book value of assets ratio.	idem
Leverage	The ratio of total debt to total assets (multiplied by 100).	idem
E. Explanatory variables: Bank characteristics		
Return on assets	The ratio of pre-tax profits of a bank to its total assets.	DealScan
Non-performing loans	The ratio of non-performing loans to total loans.	idem
Capital ratio	The capital a bank is required to hold based on its level of risk to its total assets	idem
Bank size	Natural logarithm of total bank assets.	idem

F. Explanatory variables: Country characteristics

Creditor rights	An index of the strength of creditor protection in the lender's country. It measures: 1) whether the country imposes restrictions when a debtor files for reorganization; (2) whether secured creditors are able to gain possession of their security once the reorganization petition has been approved; (3) whether secured creditors have priority in the distribution of the proceeds of liquidating a bankrupt firm; and (4) whether management is not under the control of the firm during the reorganization. The index takes values from zero to four, with higher values indicating stronger creditor rights.	Djankov, McLiesh, and Shleifer (2007); updates by Delis, Hasan, and Ongena (2017)
GDP growth	Annual GDP growth rate for the lender's and/or borrower's country	WDI
Stock-market capitalization	The ratio of stock market capitalization to GDP for the country of the lender	WDI
Bank crisis	A dummy variable equal to one if the country experienced a financial crisis and zero otherwise.	GFDD

G. Explanatory variables: Bank regulatory and supervisory policies

Official supervisory power	Index of the power of supervisory authorities to obtain information from banks and to take specific corrective actions to address a problem in the banking sector. It takes values from 0 to 14, with higher values indicating greater supervisory power.	Barth et al., (2013) and earlier versions of the survey
Capital regulations	Index of the stringency of bank capital regulations, reflecting the amount of capitals a bank must hold and the stringency of regulations on the nature and source of regulatory capital. It takes values from 0 to 10, with higher values indicating more stringent capital regulation.	idem
Private monitoring	Index of the degree to which regulatory and supervisory policies encourage private monitoring of the banks. Takes values from 0 to 11 (excluding information about the existence of an explicit deposit insurance scheme), with higher values indicating higher regulatory empowerment of the monitoring of banks by private investors.	idem

H. Instrumental variable and controls for the IV model

Regional DI source	The average by region equivalent of DI funding source, excluding information in the borrower's country (for construction details, see Appendix).	Demirgüç-Kunt et al., (2015) and earlier surveys
Regional trade	Annual change in total trade in goods and services (in USD) between the domestic country and the region.	UN Comtrade

Abbreviation of sources: WDI: World Development Indicators; GFDD: Global Financial Development Database.

Table 2. Summary statistics

	Obs.	Mean	Std. Dev.	Min.	Max.
AISD	134,319	238.97	157.68	-370	1,750
AISU	49,752	33.99	25.95	0.22	750.00
DI funding source	134,319	0.53	0.50	0	1
Other DI features	134,319	3.63	0.67	1	6
Loan amount (log)	134,319	18.31	1.63	9.21	24.62
Loan amount ($mil)	134,319	301.20	785.33	0.10	49,000
Loan maturity	134,319	53.98	32.88	0	1,140
Collateral	134,319	0.49	0.50	0	1
Number of lenders	134,319	7.00	7.62	1	176
Performance provisions	134,319	0.19	0.40	0	1
Total covenants	134,319	0.69	1.30	0	8
Firm size (log)	134,319	7.14	1.91	2.63	17.46
Market-to-book (log)	134,319	0.44	0.24	-0.39	1.61
Leverage	134,319	0.37	0.15	0.00	1.09
Return on assets	134,319	0.010	0.021	-0.018	0.35
Non-performing loans	134,319	0.020	0.023	0.00	0.32
Capital ratio	134,319	0.12	0.06	0.00	0.57
Bank size (log)	134,319	12.02	1.53	5.21	19.55
Creditor rights	134,319	1.34	0.88	0	4
GDP growth (Firm's country)	134,319	2.73	2.03	-14.8	34.5
GDP growth (Bank's country)	134,319	2.46	1.79	-9.13	26.28
Supervisory power	112,723	11.93	2.15	5	14
Capital regulations	115,824	6.61	1.47	2	10
Private monitoring	115,544	9.44	1.35	4	11
Bank crisis	134,319	0.20	0.40	0	1
Stock-market capitalization (Bank's country)	132,466	111.18	68.33	0.73	1,086.48
Regional DI source	134,319	0.51	0.44	0	1
Regional trade	128,316	6.14	8.27	-39.15	21.17

Table 3. Funding source and loan spreads: Baseline results

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISD* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes only loan-level controls, specifications (2) and (3) additionally include firm and bank-level controls. The latter specification further includes creditor rights and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
DI funding source	15.182***	11.348***	10.997***
	(1.885)	(1.765)	(1.820)
Other DI features	-0.609	0.353	0.891
	(3.374)	(2.674)	(2.500)
Loan amount	-10.255***	-5.887***	-5.861***
	(1.395)	(0.424)	(0.430)
Loan maturity	0.297**	0.143***	0.142***
	(0.114)	(0.051)	(0.050)
Collateral	34.473***	20.826***	20.850***
	(1.641)	(1.358)	(1.357)
Number of lenders	-0.591***	-0.019	-0.011
	(0.102)	(0.068)	(0.067)
Performance provisions	-25.965***	-22.373***	-22.456***
	(0.970)	(1.673)	(1.624)
Total covenants	1.095	0.519	0.528
	(0.721)	(0.423)	(0.435)
Market-to-book		-80.516***	-80.421***
		(7.682)	(7.627)
Firm size		-54.740***	-54.552***
		(2.639)	(2.642)
Leverage		144.094***	143.831***
		(6.113)	(6.037)
Return on assets		-111.773***	-112.489***
		(7.563)	(7.400)
Non-performing loans		106.005***	106.267***
		(9.406)	(9.452)
Capital ratio		18.088***	18.375***
		(2.206)	(2.277)
Bank size		-0.009	-0.015
		(0.150)	(0.154)
Creditor rights			-5.880
			(12.395)
GDP growth (Firm's country)			-2.454***
			(0.584)
Observations	141,354	135,952	134,319
Adjusted R-squared	0.694	0.798	0.797
Loan type effects	Y	Y	Y
Loan purpose effects	Y	Y	Y
Year effects	Y	Y	Y
Firm effects	Y	Y	Y
Bank effects	Y	Y	Y
Clustered standard errors	Country	Country	Country

33

Table 4. Funding source and loan spreads: Sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISD* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude only collateral, performance provisions and total covenants and in specification (3) we exclude only loan amount, loan maturity, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	10.615***	10.830***	10.678***	10.061***	11.252***	11.249***	10.911***
	(1.828)	(1.815)	(1.819)	(2.393)	(1.878)	(1.845)	(1.881)
Other DI features	-0.104	0.545	0.259	1.367	1.099	0.651	0.784
	(2.522)	(2.545)	(2.460)	(2.309)	(2.576)	(2.526)	(2.427)
Loan amount		-6.694***		-5.115***	-5.863***	-5.842***	-5.861***
		(0.508)		(0.307)	(0.431)	(0.446)	(0.430)
Loan maturity		0.145***		0.198***	0.142***	0.137***	0.142***
		(0.052)		(0.040)	(0.050)	(0.049)	(0.050)
Collateral			21.640***	18.512***	20.843***	20.616***	20.851***
			(1.322)	(1.116)	(1.357)	(1.521)	(1.361)
Number of lenders		-0.172***		-0.047	-0.010	0.015	-0.011
		(0.062)		(0.076)	(0.067)	(0.059)	(0.067)
Performance provisions			-23.653***	-24.231***	-22.451***	-22.899***	-22.457***
			(1.651)	(1.847)	(1.622)	(1.409)	(1.622)
Total covenants			0.601	0.880**	0.527	0.602	0.526
			(0.389)	(0.432)	(0.435)	(0.495)	(0.434)
Market-to-book	-82.078***	-82.590***	-79.606***	-91.652***	-80.424***	-79.429***	-80.420***
	(6.680)	(7.271)	(7.039)	(7.435)	(7.630)	(6.967)	(7.630)
Firm size	-55.613***	-54.914***	-55.006***	-63.368***	-54.554***	-54.358***	-54.548***
	(2.652)	(2.626)	(2.623)	(3.576)	(2.641)	(2.770)	(2.646)
Leverage	148.081***	149.485***	142.153***	148.178***	143.840***	142.035***	143.835***
	(6.129)	(5.802)	(6.249)	(4.405)	(6.044)	(5.050)	(6.040)
Return on assets	-114.691***	-112.910***	-113.919***	-104.483***	-112.412***	-113.965***	-112.499***
	(7.690)	(7.294)	(7.653)	(7.772)	(7.364)	(7.773)	(7.402)
Non-performing loans	111.077***	107.268***	110.033***	101.423***	106.272***	105.264***	106.264***
	(9.303)	(8.918)	(9.727)	(10.827)	(9.443)	(10.655)	(9.445)
Capital ratio	18.409***	17.889***	18.964***	17.203***	18.362***	18.826***	18.353***
	(2.501)	(2.317)	(2.320)	(2.858)	(2.275)	(2.297)	(2.288)
Bank size	-0.040	-0.009	-0.041	-0.042	-0.016	-0.027	-0.016
	(0.158)	(0.152)	(0.160)	(0.132)	(0.154)	(0.155)	(0.154)
Creditor rights	-8.591	-6.310	-7.586	-18.760	-5.895	-6.780	-6.050
	(13.219)	(13.281)	(12.245)	(20.000)	(12.409)	(12.645)	(12.243)
GDP growth (Firm's country)	-2.625***	-2.518***	-2.550***	-2.943***	-2.478***	-2.618***	-2.355***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(0.544)	(0.562)	(0.566)	(0.574)	(0.584)	(0.599)	(0.559)
Capital regulations				0.129			
				(0.456)			
Private monitoring				-0.443			
				(0.690)			
Official supervisory power				-0.075			
				(0.200)			
Bank crisis					-1.874		
					(1.931)		
Stock market capitalization (Bank's country)						-0.001	
						(0.021)	
GDP growth (Bank's country)							-0.491
							(0.566)
Observations	136,230	134,319	136,230	111,026	134,319	130,006	134,319
Adjusted R-squared	0.790	0.794	0.793	0.815	0.797	0.796	0.797
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country

Table 5. Funding source and loan spreads: Results for AISU

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISU* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes only loan-level controls, specifications (2) and (3) additionally include firm and bank-level controls. The latter specification further includes creditor rights and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
DI funding source	2.544***	2.528***	2.506***
	(0.675)	(0.762)	(0.792)
Other DI features	-0.255	-0.368	-0.350
	(0.676)	(0.652)	(0.641)
Loan amount	-1.661***	-1.281***	-1.308***
	(0.099)	(0.084)	(0.076)
Loan maturity	-0.014***	-0.008**	-0.008**
	(0.004)	(0.003)	(0.003)
Collateral	7.285***	6.537***	6.510***
	(0.456)	(0.398)	(0.389)
Number of lenders	-0.018	-0.002	-0.002
	(0.015)	(0.012)	(0.012)
Performance provisions	-2.216***	-2.139***	-2.127***
	(0.151)	(0.133)	(0.126)
Total covenants	0.577***	0.568***	0.548***
	(0.138)	(0.142)	(0.139)
Market-to-book		-5.630***	-5.587***
		(0.267)	(0.260)
Firm size		-1.849***	-1.793***
		(0.143)	(0.139)
Leverage		10.093***	9.965***
		(0.451)	(0.423)
Return on assets		-6.007**	-5.879*
		(2.956)	(3.006)
Non-performing loans		11.743***	12.299***
		(2.159)	(2.235)
Capital ratio		3.607***	3.739***
		(0.632)	(0.637)
Bank size		0.024	0.022
		(0.033)	(0.034)
Creditor rights			4.457
			(3.382)
GDP growth (Firm's country)			-0.426
			(0.288)
Observations	46,449	43,869	43,511
Adjusted R-squared	0.606	0.634	0.634
Loan type effects	Y	Y	Y
Loan purpose effects	Y	Y	Y
Year effects	Y	Y	Y
Firm effects	Y	Y	Y
Bank effects	Y	Y	Y
Clustered standard errors	Country	Country	Country

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Table 6. Funding source and loan pricing: IV estimates

The table reports coefficients and standard errors (in brackets). In the first three specifications, dependent variable is *AISD* and in the last three dependent variable is *AISU*. All variables are defined in Table 1. Estimation method is 2SLS with standard errors clustered by lender's country. Specifications (1) and (4) replicate our baseline results in specification (3) of Table 3 and specification (3) of Table 5. In specifications (2) and (3), and (5) and (6), we sequentially add controls for other regulations, and stock market capitalization. The lower part of the table denotes the control variables and fixed effects used in each specification. The control variables are those of specifications (3) of Table 3 and specification (3) of Table 5 for the *AISD* and the *AISU* models, respectively. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

After reporting the first stage results, we also report the results from the direct inclusion of our IV *Regional DI source* as an explanatory variable in *AISD* and *AISU* specifications. These estimations follow our baseline models and are estimated using OLS with standard errors clustered by lender's country.

	AISD			AISU		
	(1)	(2)	(3)	(4)	(5)	(6)
DI funding source	12.311***	13.517***	12.849***	2.915***	3.625***	4.048***
	(2.789)	(2.994)	(2.811)	(0.883)	(1.125)	(1.260)
Other DI features	-0.748	-0.822	-0.654	-0.422	-0.406	
	(3.825)	(3.945)	(3.662)	(0.819)	(0.723)	
Capital regulations		0.486			0.133	
		(0.917)			(0.221)	
Private monitoring		-0.617			-0.237	
		(0.840)			(0.326)	
Official supervisory power		-0.116			0.163	
		(0.304)			(0.178)	
Stock market capitalization			-0.045**			-0.019*
			(0.023)			(0.010)
First stage						
Regional DI source	1.147***	1.198***	1.167***	1.248***	1.195***	1.261***
	(0.228)	(0.245)	(0.251)	(0.297)	(0.283)	(0.314)
Effect of Regional DI source on the dependent variable						
Regional DI source	1.207	1.103	1.185	0.229	0.306	0.238
	(2.615)	(2.511)	(2.822)	(0.716)	(0.822)	(0.707)
Observations	134,319	111,026	130,006	43,511	33,887	42,526
Weak identification test	54.28	56.11	55.13	61.17	60.55	62.29
Critical value (10%)	16.38	16.38	16.38	16.38	16.38	16.38
Control variables	Y	Y	Y	Y	Y	Y
Loan type effects	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country

Table 7. Funding source, loan amount, and loan maturity

The table reports coefficients and standard errors (in brackets). Dependent variable in the first three columns is *Loan amount* and in the last three columns *Loan maturity*. All variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes only loan-level controls, specifications (2) and (3) additionally include firm and bank-level controls. The latter specification further includes creditor rights and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Loan amount			Loan maturity		
	(1)	(2)	(3)	(4)	(5)	(6)
DI funding source	-0.034*	-0.030	-0.029	-2.266***	-2.223***	-2.117***
	(0.019)	(0.019)	(0.020)	(0.649)	(0.641)	(0.652)
Other DI features	0.035	0.032	0.029	0.119	0.065	0.046
	(0.023)	(0.023)	(0.023)	(0.794)	(0.833)	(0.846)
AISD	-0.001***	-0.001***	-0.001***	0.011*	0.009*	0.009*
	(0.000)	(0.000)	(0.000)	(0.006)	(0.005)	(0.005)
Loan maturity	0.005***	0.005***	0.005***	2.344***	2.228***	2.225***
	(0.001)	(0.001)	(0.001)	(0.161)	(0.164)	(0.164)
Collateral	-0.109***	-0.100***	-0.103***	1.726***	1.906***	1.880***
	(0.012)	(0.012)	(0.012)	(0.255)	(0.290)	(0.274)
Number of lenders	0.034***	0.033***	0.033***	0.091***	0.097***	0.096***
	(0.001)	(0.001)	(0.001)	(0.027)	(0.025)	(0.026)
Performance provisions	0.196***	0.196***	0.198***	2.124***	2.000***	1.953***
	(0.009)	(0.007)	(0.008)	(0.137)	(0.135)	(0.142)
Total covenants	-0.004	-0.004*	-0.004**	-0.460***	-0.490***	-0.476***
	(0.003)	(0.002)	(0.002)	(0.127)	(0.124)	(0.113)
Market-to-book		0.040***	0.039***		1.103***	1.093***
		(0.010)	(0.010)		(0.182)	(0.164)
Firm size		0.068***	0.068***		0.055	0.049
		(0.017)	(0.017)		(0.095)	(0.097)
Leverage		0.051***	0.051***		-2.857***	-2.916***
		(0.012)	(0.013)		(0.606)	(0.602)
Return on assets		0.073	0.076		1.061	1.061
		(0.073)	(0.073)		(2.572)	(2.555)
Non-performing loans		0.096	0.096		0.668	0.858
		(0.098)	(0.095)		(1.795)	(1.915)
Capital ratio		-0.022	-0.026		0.636	0.611
		(0.027)	(0.025)		(1.199)	(1.106)
Bank size		0.002*	0.002*		0.010	0.023
		(0.001)	(0.001)		(0.033)	(0.029)
Creditor rights			0.058			-3.149
			(0.054)			(2.874)
GDP growth (Firm's country)			0.003			0.081
			(0.003)			(0.093)
Observations	141,354	135,952	134,319	141,354	135,952	134,319
Adjusted R-squared	0.753	0.745	0.745	0.706	0.706	0.705
Loan type effects	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country

Table 8. Funding source and loan guarantees

The table reports coefficients and standard errors (in brackets). The dependent variable is denoted in the first line of the table and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1), (4), and (7) include only loan-level controls, specifications (2), (5), and (8) additionally include firm and bank-level controls. Specifications (3), (6), and (9) further include firm and bank-level controls, creditor rights and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Collateral			Performance provisions			Total covenants		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DI funding source	0.009	0.008	0.008	0.020***	0.020***	0.018**	0.039	0.037	0.037
	(0.007)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.031)	(0.029)	(0.029)
Other DI features	-0.001	-0.002	-0.005	0.011	0.012	0.012	-0.014	-0.015	-0.017
	(0.007)	(0.006)	(0.006)	(0.009)	(0.009)	(0.009)	(0.045)	(0.043)	(0.044)
AISD	0.000***	0.000***	0.000***	-0.000***	-0.000***	-0.000***	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Loan amount	-0.014***	-0.013***	-0.013***	0.021***	0.021***	0.021***	-0.004*	-0.003**	-0.004**
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Loan maturity	0.000***	0.001***	0.001***	0.000***	0.000***	0.000***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Collateral				0.029***	0.031***	0.031***	0.391***	0.394***	0.395***
				(0.005)	(0.004)	(0.005)	(0.024)	(0.025)	(0.024)
Number of lenders	-0.000	-0.000	-0.000	0.006***	0.006***	0.006***	0.007***	0.007***	0.007***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Performance provisions	0.035***	0.037***	0.037***				0.990***	0.988***	0.992***
	(0.006)	(0.005)	(0.005)				(0.058)	(0.061)	(0.059)
Total covenants	0.062***	0.062***	0.062***	0.130***	0.131***	0.131***			
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)			
Market-to-book		-0.049***	-0.049***		0.006	0.006		-0.079***	-0.077***
		(0.018)	(0.017)		(0.005)	(0.005)		(0.013)	(0.012)
Firm size		-0.000	-0.001		-0.018***	-0.018***		-0.017***	-0.017***
		(0.002)	(0.002)		(0.004)	(0.004)		(0.004)	(0.004)
Leverage		0.126***	0.126***		-0.040***	-0.042***		-0.058**	-0.057*
		(0.016)	(0.016)		(0.013)	(0.013)		(0.029)	(0.030)
Return on assets		0.091***	0.079**		0.020	0.020		-0.078	-0.074
		(0.032)	(0.031)		(0.019)	(0.020)		(0.079)	(0.087)
Non-performing loans		0.031	0.037		0.043	0.050*		0.090*	0.082
		(0.026)	(0.026)		(0.026)	(0.025)		(0.052)	(0.054)
Capital ratio		-0.022	-0.022		0.014	0.014		-0.013	-0.010
		(0.023)	(0.022)		(0.013)	(0.013)		(0.025)	(0.026)
Bank size		0.001*	0.001*		0.001*	0.001*		0.000	0.000
		(0.001)	(0.000)		(0.000)	(0.000)		(0.001)	(0.001)
Creditor rights			0.011			0.017			0.141*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		(0.031)			(0.025)			(0.071)	
GDP growth (Firm's country)		-0.000			0.001			0.000	
		(0.001)			(0.001)			(0.003)	
Observations	141,354	135,952	134,319	141,354	135,952	134,319	141,354	135,952	134,319
Adjusted R-squared	0.651	0.656	0.655	0.532	0.537	0.538	0.675	0.677	0.678
Loan type effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country	Country	Country

Appendix

This appendix is intended as a supplement to the dataset and results presented in the main body of the paper. We first provide the details on the construction of our instrumental variable (named *Regional DI source*). The tables included in this appendix provide the following information:

- Table A1 reports several additional macro controls used in our empirical analysis.
- Table A2 presents the number of observations by lead bank's country in our baseline sample along with the mean and the standard variation of the *DI Funding source* variable used in our empirical analysis.
- Tables A3 and A4 report the pairwise correlation coefficients between *DI Funding source* and (i) the design characteristics of deposit insurance schemes and (ii) the *Other DI features* index.
- Tables A5 to A9 report sensitivity results on the results reported in Table 3.
- Table A10 reports sensitivity results on the results reported in Table 5.
- The rest of the tables (A11 – A15) report sensitivity analyses for Tables 6-8 as described in the main part of the text.

Construction of our instrumental variable

In this section, we more or less replicate the discussion in Acemoglu et al. (2019) for the construction of our IV. For each country c, let D_{ct0} denote whether the country had government involvement in deposit insurance in 1985 (beginning of our sample) or not, and R_c denote the geographic region in which the country belongs. These regions are Africa, East Asia and the Pacific, Eastern Europe and Central Asia, Western Europe and other developed countries, Latin America and the Caribbean, the Middle East and the North of Africa, and South Asia. We assume that *DI funding source* in country c is influenced by *DI funding source* in the set of countries in the same region that also share a similar regulatory history, meaning an equal value for D_{ct0}.

This approach defines the regional influence to *DI funding source* that a country c faces, Z_{ct}, as

$$Z_{ct} = \frac{1}{|I_c|}\sum_{c' \in I_c} D_{c't}. \tag{A.1}$$

In (A.1), I_c is the set of countries c' influencing *DI funding source* in country c. Z_{ct} is the jack-knifed average of *DI funding source* in a region × the initial regime cell, which leaves out the own-country observation. We name this instrumental variable *Regional DI source*. We use the exact same procedure to construct the variable *Regional trade* (also look at Table 1 for definition and data sources).

Table A1. List of additional country-year control variables

The table provides a list of more than 100 control variables, which we use in additional regressions. We do not report the results from these regressions, but the effect of *Diversity* is similar to that in our baseline regressions. In many respects, we use more than one variable (i.e. from a different source) for the same country-year characteristic (e.g., corruption). Abbreviation of sources: ICRG: International Country Risk Guide; FH: Freedom House; WB: World Bank (either World Development Indicators or Quality of Governance indices); HF: Heritage Foundation; SWIID: Standardized World Income Inequality Database; GFDD: Global Financial Development Database. Many of the variables below are % of GDP. We acknowledge the Quality of Government Institute (Teorell et al., 2018) for their data-collection process.

Variable	Source	Variable	Source
Corruption	ICRG, FH, WB, HF	Domesticable animals	Ashraf and Galor (2013)
Rule of law	ICRG, FH, WB	Ultraviolet exposure	Ashraf and Galor (2013)
Government quality	ICRG, FH, WB	Years since stock market creation	Own calculations
Language fractionalization	Alesina et al. (2003)	Bank accounts (per 1,000 people)	GFDD
Religion fractionalization	Alesina et al. (2003)	Bank branches (per 1,000 people)	GFDD
Population size	WB	Corporate bonds to total bonds	GFDD
Population density	WB	Private credit by banks	GFDD
Population growth	WB	Domestic credit to private sector	GFDD
Urban population	WB	Outstanding public debt to securities	GFDD
Political terror	US state department	Syndicated loan issuance volume	Own calculations
Armed forces	WB	Syndicated loan average maturity	Own calculations
Military expenditure	WB	Bank net interest margin	GFDD
Average schooling (years)	Barro and Lee (2013)	Bank lending-deposit spread	GFDD
Average schooling (male and female)	Barro and Lee (2013)	Bank return on assets	GFDD
Government education expenditure	UNESCO	Bank cost to income ratio	GFDD
Age dependency (% of labor)	WB	Foreign bank ownership	Claessens and Van Horen (2014)
Agriculture value added	WB	Bank Z-score	GFDD
Birth rate (per 1,000 people)	WB	Bank non-performing loans ratio	GFDD
CO2 emissions	WB	Banking industry H-statistic	GFDD
Death rate (per 1,00 people)	WB	Bank Lerner index	Delis et al. (2015), GFDD
DEC alternative conversion factor	WB	Boone indicator	Delis et al. (2015), GFDD
External balance on goods & services	WB	Remittance inflows	GFDD
Electric power consumption	WB	Banking crisis dummy	GFDD
Various employment ratios	WB, IMF	Consumer price index	GFDD
Consumption expenditure	WB	Capital stringency	Barth et al. (2013)
Foreign direct investment inflows	WB	Bank activity restrictions	Barth et al. (2013)
Fertility rate	WB	Official bank supervisory powers	Barth et al. (2013)
Forest area	WB	Bank private monitoring	Barth et al. (2013)
Gini coefficient	SWIID	Bank external governance	Barth et al. (2013)
Lending interest rate	WB	Bank deposit insurance	Barth et al. (2013)
Deposit interest rate	WB	Bank entry requirements	Barth et al. (2013)
Arable land	WB	Corporate tax rates	WB, OECD, Tax foundation
Life expectancy at birth	WB	Business freedom	HF
Mobile subscriptions	WB	Labor freedom	HF
Infant mortality	WB	Monetary freedom	HF
Official exchange rate	WB	Investment freedom	HF
Latitude	G-Econ project	Financial freedom	HF
Longitude	G-Econ project	Tax burden	HF
Mean and standard dev. of elevation	G-Econ project	Government spending	HF, WB
Population in 1 CE	Ashraf and Galor (2013)	Fiscal health	HF
Population density in 1 CE	Ashraf and Galor (2013)	Fiscal deficit	WB
Percentage of arable land area	WDI	Fiscal debt	WB
Soil fertility	Michalopoulos (2008)	Health indicators (malaria, pathogen)	WB
Mean temperature and precipitation	G-Econ project	Years since stock market creation	Own data collection
Democratic conditions	Polity IV	State fragility	Polity IV

Table A2. Number of loans by country of the lender and mean and standard deviation of Funding source

The table reports the total number of observations, as well as loans in countries with privately or government-funded deposit insurance in separate columns. It, further, provides the mean and standard deviation of *DI funding source* by country of the lender bank.

Country	Total number of observations	Number of obs. under privately funded DI	Number of obs. under government-funded DI (solely or jointly)	Mean of DI Funding source	Std. dev. of DI Funding source
Albania	7	7	0	0.00	0.00
Argentina	30	30	0	0.00	0.00
Australia	589	0	589	1.00	0.00
Austria	512	232	280	0.55	0.50
Bahrain	95	95	0	0.00	0.00
Bangladesh	3	3	0	0.00	0.00
Belgium	807	370	437	0.54	0.50
Brazil	66	66	0	0.00	0.00
Bulgaria	2	0	2	1.00	0.00
Canada	6,472	2,442	4,030	0.62	0.48
Chile	8	0	8	1.00	0.00
Colombia	5	2	3	0.6	0.55
Croatia	6	1	5	0.83	0.41
Cyprus	7	7	0	0.00	0.00
Czech Republic	33	15	18	0.55	0.51
Denmark	239	115	124	0.52	0.50
El Salvador	2	2	0	0.00	0.00
Finland	109	10	99	0.91	0.29
France	7,125	7,125	0	0.00	0.00
Germany	5,609	5,609	0	0.00	0.00
Greece	85	85	0	0.00	0.00
Hong Kong	658	658	0	0.00	0.00
Hungary	47	15	32	0.68	0.47
Iceland	86	86	0	0.00	0.00
India	386	0	386	1.00	0.00
Indonesia	63	0	63	1.00	0.00
Ireland	809	809	0	0.00	0.00
Italy	1,642	1,066	576	0.35	0.48
Jamaica	3	0	3	1.00	0.00
Japan	6,126	1,979	4,147	0.68	0.47
Jordan	21	21	0	0.00	0.00
Kazakhstan	3	3	0	0.00	0.00
Korea (South)	830	233	597	0.72	0.45
Latvia	8	0	8	1.00	0.00
Lebanon	7	0	7	1.00	0.00
Luxemburg	198	198	0	0.00	0.00
Malaysia	51	0	51	1.00	0.00
Malta	5	5	0	0.00	0.00
Mexico	78	19	59	0.76	0.43
Morocco	2	2	0	0.00	0.00
Netherlands	3,781	2,258	1,523	0.40	0.49
Nigeria	8	5	3	0.38	0.52

Norway	426	264	162	0.38	0.49
Oman	15	0	15	1.00	0.00
Peru	2	1	1	0.50	0.71
Philippines	102	0	102	1.00	0.00
Poland	76	26	50	0.66	0.48
Portugal	168	126	42	0.25	0.43
Romania	10	4	6	0.60	0.52
Russian Federation	35	0	35	1.00	0.00
Singapore	287	287	0	0.00	0.00
Slovak Republic	11	5	6	0.55	0.52
Slovenia	4	4	0	0.00	0.00
Spain	1,864	1,454	410	0.22	0.41
Sweden	292	113	179	0.61	0.49
Switzerland	2,895	2,895	0	0.00	0.00
Tanzania	3	0	3	1.00	0.00
Thailand	14	14	0	0.00	0.00
Trinidad and Tobago	2	0	2	1.00	0.00
Turkey	36	27	9	0.25	0.44
Ukraine	4	3	1	0.25	0.50
United Kingdom	8,769	8,769	0	0.00	0.00
USA	82,681	25,829	56,852	0.69	0.46
Total	134,319	63,394	70,925	0.55	0.50

Table A3. Correlation matrix between DI funding source and Other DI features

The * mark denotes statistical significance at the 1% level.

	(1)	(2)
(1) DI funding source	1	
(2) Other DI features	0.3592*	1

Table A4. Correlation matrix between DI funding source and the components of Other DI features

The * mark denotes statistical significance at the 1% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) DI funding source	1						
(2) Foreign currency deposits	-0.1340*	1					
(3) Interbank deposits	0.3740*	0.2249*	1				
(4) Ex-ante funding	0.3321*	-0.1847*	0.4301*	1			
(5) Risk-adjusted premiums	-0.2530*	-0.3486*	-0.7321*	-0.4148*	1		
(6) Administration	0.2637*	-0.1098*	0.3219*	0.5500*	-0.2032*	1	
(7) Membership	0.0719*	-0.3124*	-0.1695*	-0.0482*	-0.0634*	-0.1142*	1

Table A5. Funding source and loan spreads: Not including firm and bank fixed effects

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISD* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes the full gamut of loan-, firm-, and bank-level controls, creditor rights and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)
DI funding source	20.707***
	(2.567)
Other DI features	-1.265
	(3.632)
Loan amount	-9.762***
	(0.565)
Loan maturity	-0.004
	(0.030)
Collateral	33.330***
	(1.146)
Number of lenders	0.205*
	(0.117)
Performance provisions	-28.179***
	(2.209)
Total covenants	-2.847*
	(1.566)
Market-to-book	-57.533***
	(8.872)
Firm size	-31.628***
	(2.580)
Leverage	167.805***
	(5.300)
Return on assets	-192.308***
	(9.165)
Non-performing loans	175.401***
	(6.864)
Capital ratio	21.760***
	(2.173)
Bank size	-0.228**
	(0.105)
Creditor rights	-6.477***
	(0.960)
GDP growth (Firm's country)	-0.873
	(0.537)
Observations	149,735
Adjusted R-squared	0.655
Loan type effects	Y
Loan purpose effects	Y
Year effects	Y
Firm effects	N
Bank effects	N
Clustered standard errors	Country

Table A6. Funding source and loan spreads: Sensitivity to the type of clustering of standard errors and

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISD* and all variables are defined in Table 1. Estimation method is OLS. In specifications (1) to (3) the standard errors are clustered by loan facility and year and in (4) to (6) by country and year. Specification (1) and (4) include only loan-level controls, specifications (2) and (5) additionally include firm and bank-level controls. Specifications (3) and (6) further include firm and bank-level controls, creditor rights, and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
DI funding source	15.182***	11.348***	10.997***	15.182***	11.348***	10.997***
	(3.910)	(2.926)	(2.732)	(3.411)	(2.918)	(2.782)
Other DI features	-0.609	0.353	0.891	-0.609	0.353	0.891
	(2.150)	(1.764)	(1.747)	(3.116)	(2.625)	(2.561)
Loan amount	-10.255***	-5.887***	-5.861***	-10.255***	-5.887***	-5.861***
	(0.615)	(0.707)	(0.709)	(1.404)	(0.657)	(0.703)
Loan maturity	0.297***	0.143***	0.142***	0.297**	0.143**	0.142**
	(0.094)	(0.045)	(0.046)	(0.135)	(0.061)	(0.060)
Collateral	34.473***	20.826***	20.850***	34.473***	20.826***	20.850***
	(2.150)	(1.734)	(1.736)	(2.243)	(1.626)	(1.595)
Number of lenders	-0.591***	-0.019	-0.011	-0.591***	-0.019	-0.011
	(0.126)	(0.064)	(0.064)	(0.139)	(0.096)	(0.103)
Performance provisions	-25.965***	-22.373***	-22.456***	-25.965***	-22.373***	-22.456***
	(1.832)	(1.915)	(1.920)	(1.426)	(2.173)	(2.164)
Total covenants	1.095	0.519	0.528	1.095	0.519	0.528
	(0.849)	(0.765)	(0.772)	(0.931)	(0.862)	(0.881)
Market-to-book		-80.516***	-80.421***		-80.516***	-80.421***
		(7.196)	(7.205)		(9.309)	(9.304)
Firm size		-54.740***	-54.552***		-54.740***	-54.552***
		(5.420)	(5.431)		(4.895)	(4.840)
Leverage		144.094***	143.831***		144.094***	143.831***
		(11.983)	(11.999)		(9.646)	(9.599)
Return on assets		-111.773***	-112.489***		-111.773***	-112.489***
		(10.811)	(10.532)		(8.170)	(7.840)
Non-performing loans		106.005***	106.267***		106.005***	106.267***
		(8.999)	(9.221)		(6.099)	(6.144)
Capital ratio		18.088***	18.375***		18.088***	18.375***
		(2.866)	(2.812)		(1.522)	(2.037)
Bank size		-0.009	-0.015		-0.009	-0.015
		(0.197)	(0.195)		(0.192)	(0.255)
Creditor rights			-5.880			-5.880
			(11.788)			(14.837)
GDP growth (Firm's country)			-2.454***			-2.454**
			(0.823)			(0.988)
Observations	141,354	135,952	134,319	141,354	135,952	134,319
Adjusted R-squared	0.694	0.798	0.797	0.694	0.798	0.797
Loan type effects	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y
Clustered standard errors	Loan & Year	Loan & Year	Loan & Year	Country & Year	Country & Year	Country & Year

Table A7. Funding source and loan spreads: Sensitivity tests from a sample-selection viewpoint

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISD* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. In specifications (1) to (3), we strictly include term and revolver loans and exclude other specialized loan facilities. In specifications (4) to (6) we exclude loans for LBOs and M&As. Specification (1) and (4) include only loan-level controls, specifications (2) and (5) additionally include firm and bank-level controls. Specifications (3) and (6) further include creditor rights and GDP growth for the country of the borrower. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
DI funding source	15.148***	11.466***	11.119***	16.397***	12.089***	11.675***
	(1.930)	(1.780)	(1.806)	(2.855)	(2.709)	(2.726)
Other DI features	-0.880	0.217	0.787	-3.337	-1.530	-1.104
	(3.565)	(2.760)	(2.585)	(3.852)	(2.935)	(2.813)
Loan amount	-10.310***	-5.885***	-5.861***	-10.430***	-6.309***	-6.307***
	(1.325)	(0.399)	(0.403)	(1.245)	(0.444)	(0.443)
Loan maturity	0.303**	0.146***	0.144***	0.082	0.038	0.036
	(0.118)	(0.052)	(0.051)	(0.090)	(0.046)	(0.046)
Collateral	34.736***	20.945***	20.968***	35.306***	22.906***	23.025***
	(1.556)	(1.357)	(1.357)	(2.332)	(1.944)	(1.904)
Number of lenders	-0.592***	-0.009	0.000	-0.554***	-0.107	-0.100
	(0.104)	(0.064)	(0.063)	(0.118)	(0.067)	(0.066)
Performance provisions	-26.065***	-22.348***	-22.429***	-23.225***	-20.562***	-20.637***
	(0.922)	(1.632)	(1.588)	(1.014)	(1.855)	(1.822)
Total covenants	1.055	0.513	0.517	1.384*	1.112*	1.149*
	(0.730)	(0.446)	(0.454)	(0.806)	(0.611)	(0.638)
Market-to-book		-80.680***	-80.592***		-79.334***	-79.189***
		(7.638)	(7.584)		(6.396)	(6.379)
Firm size		-55.188***	-54.991***		-49.882***	-49.644***
		(2.476)	(2.484)		(3.371)	(3.390)
Leverage		143.802***	143.560***		159.099***	158.507***
		(5.932)	(5.881)		(7.375)	(7.265)
Return on assets		-111.319***	-111.995***		-94.798***	-95.508***
		(7.825)	(7.598)		(11.177)	(10.786)
Non-performing loans		106.036***	106.268***		95.245***	95.037***
		(9.216)	(9.290)		(6.677)	(7.032)
Capital ratio		17.893***	18.087***		17.924***	18.211***
		(2.067)	(2.122)		(2.427)	(2.538)
Bank size		-0.020	-0.026		0.020	0.024
		(0.151)	(0.155)		(0.140)	(0.145)
Creditor rights			-8.087			-5.653
			(11.539)			(13.111)
GDP growth (Firm's country)			-2.502***			-2.411***
			(0.593)			(0.607)
Observations	139,775	134,471	132,893	107,399	103,084	101,736
Adjusted R-squared	0.690	0.797	0.797	0.714	0.803	0.802
Loan type effects	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country

Table A8. Funding source and loan spreads: All-in-spread undrawn sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *AISD* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude only collateral, performance provisions and total covenants and in specification (3) we exclude only loan amount, loan maturity, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	2.538***	2.430***	2.598***	3.357***	2.466***	3.759***	2.520***
	(0.799)	(0.802)	(0.792)	(0.885)	(0.767)	(0.817)	(0.802)
Other DI features	-0.582	-0.526	-0.393	-0.344	-0.436	-0.711	-0.508
	(0.575)	(0.584)	(0.638)	(0.511)	(0.692)	(0.487)	(0.566)
Loan amount		-1.479***		-1.259***	-1.308***	-1.323***	-1.309***
		(0.071)		(0.099)	(0.076)	(0.075)	(0.075)
Loan maturity		-0.007**		-0.015***	-0.008**	-0.006*	-0.008**
		(0.003)		(0.004)	(0.003)	(0.004)	(0.003)
Collateral			6.634***	6.748***	6.511***	6.458***	6.514***
			(0.348)	(0.543)	(0.389)	(0.345)	(0.390)
Number of lenders		-0.007		-0.039***	-0.002	-0.002	-0.002
		(0.013)		(0.013)	(0.012)	(0.013)	(0.012)
Performance provisions			-2.466***	-2.109***	-2.127***	-2.165***	-2.129***
			(0.130)	(0.191)	(0.126)	(0.119)	(0.127)
Total covenants			0.533***	0.573***	0.548***	0.556***	0.546***
			(0.143)	(0.186)	(0.139)	(0.151)	(0.138)
Market-to-book	-6.311***	-6.244***	-5.627***	-6.007***	-5.586***	-5.604***	-5.591***
	(0.261)	(0.233)	(0.301)	(0.292)	(0.259)	(0.261)	(0.256)
Firm size	-2.534***	-2.101***	-2.168***	-2.393***	-1.793***	-1.734***	-1.793***
	(0.139)	(0.151)	(0.133)	(0.192)	(0.139)	(0.094)	(0.139)
Leverage	11.783***	11.684***	10.015***	9.806***	9.965***	9.879***	9.954***
	(0.484)	(0.504)	(0.393)	(0.590)	(0.425)	(0.380)	(0.425)
Return on assets	-5.519*	-5.488*	-5.888**	-2.198	-5.901*	-5.877*	-5.951*
	(2.765)	(3.090)	(2.693)	(3.478)	(3.008)	(2.973)	(3.028)
Non-performing loans	13.157***	13.125***	12.258***	13.361***	12.310***	12.183***	12.319***
	(2.496)	(2.553)	(2.210)	(2.394)	(2.231)	(2.215)	(2.238)
Capital ratio	3.993***	3.841***	3.955***	3.052***	3.735***	3.981***	3.742***
	(0.654)	(0.576)	(0.732)	(0.646)	(0.638)	(0.555)	(0.644)
Bank size	0.025	0.023	0.026	0.039	0.022	0.023	0.022
	(0.036)	(0.034)	(0.037)	(0.040)	(0.034)	(0.035)	(0.034)
Creditor rights	4.039	4.009	4.580	3.446**	4.462	3.912	4.364
	(3.785)	(3.597)	(3.555)	(1.397)	(3.386)	(3.538)	(3.397)
GDP growth (Firm's country)	-0.467	-0.463	-0.424	-0.599	-0.423	-0.633*	-0.354

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(0.282)	(0.293)	(0.278)	(0.379)	(0.286)	(0.344)	(0.274)
Capital regulations				0.142			
				(0.210)			
Private monitoring				-0.214			
				(0.242)			
Official supervisory power				0.115			
				(0.103)			
Bank crisis					0.468		
					(0.672)		
Stock market capitalization (Bank's country)						-0.010	
						(0.008)	
GDP growth (Bank's country)							-0.315**
							(0.148)
Observations	43,995	43,511	43,995	33,887	43,511	42,526	43,511
Adjusted R-squared	0.623	0.626	0.631	0.642	0.634	0.628	0.634
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country

Table A9. Funding source and loan amount: Sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *Loan amount* and all variables are defined in Table I. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights, and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude collateral, performance provisions, and total covenants and in specification (3) we exclude AISD, loan maturity, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	-0.051***	-0.025	-0.056***	-0.043	-0.025	-0.033	-0.029
	(0.019)	(0.020)	(0.018)	(0.029)	(0.022)	(0.023)	(0.020)
Other DI features	0.021	0.032	0.018	0.028	0.032	0.029	0.029
	(0.024)	(0.022)	(0.025)	(0.031)	(0.022)	(0.024)	(0.023)
AISD		-0.001***		-0.001***	-0.001***	-0.001***	-0.001***
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Loan maturity		0.005***		0.005***	0.005***	0.005***	0.005***
		(0.001)		(0.001)	(0.001)	(0.001)	(0.001)
Collateral			-0.126***	-0.094***	-0.103***	-0.105***	-0.103***
			(0.010)	(0.013)	(0.012)	(0.012)	(0.012)
Number of lenders		0.035***		0.031***	0.033***	0.034***	0.033***
		(0.001)		(0.001)	(0.001)	(0.001)	(0.001)
Performance provisions			0.311***	0.202***	0.198***	0.199***	0.198***
			(0.007)	(0.009)	(0.008)	(0.008)	(0.008)
Total covenants			0.003	-0.008***	-0.004**	-0.004*	-0.004**
			(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Market-to-book	0.138***	0.044***	0.119***	0.061***	0.039***	0.040***	0.039***
	(0.010)	(0.010)	(0.010)	(0.015)	(0.010)	(0.010)	(0.010)
Firm size	0.136***	0.064***	0.132***	0.065***	0.068***	0.069***	0.068***
	(0.025)	(0.017)	(0.024)	(0.019)	(0.017)	(0.018)	(0.017)
Leverage	-0.108***	0.030**	-0.055**	0.114***	0.051***	0.051***	0.051***
	(0.020)	(0.014)	(0.022)	(0.033)	(0.013)	(0.014)	(0.013)
Return on assets	0.192**	0.073	0.173**	0.079	0.077	0.087	0.076
	(0.083)	(0.073)	(0.083)	(0.086)	(0.073)	(0.081)	(0.073)
Non-performing loans	0.020	0.106	0.020	0.090	0.096	0.112	0.096
	(0.108)	(0.094)	(0.109)	(0.119)	(0.096)	(0.095)	(0.095)
Capital ratio	-0.036	-0.021	-0.040	-0.049*	-0.026	-0.041**	-0.026
	(0.034)	(0.022)	(0.037)	(0.029)	(0.025)	(0.019)	(0.025)
Bank size	0.003**	0.003*	0.003**	0.003	0.002*	0.003*	0.002*
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Creditor rights	0.166***	0.064	0.146***	0.190***	0.058	0.067	0.058
	(0.054)	(0.052)	(0.052)	(0.057)	(0.054)	(0.057)	(0.054)
GDP growth (Firm's country)	0.008***	0.004	0.007***	0.004	0.003	0.003	0.003

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(0.002)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
Capital regulations				-0.004			
				(0.008)			
Private monitoring				0.004			
				(0.012)			
Official supervisory power				-0.002			
				(0.004)			
Bank crisis					-0.030		
					(0.032)		
Stock market capitalization (Bank's country)						-0.000	
						(0.000)	
GDP growth (Bank's country)							-0.000
							(0.004)
Observations	136,020	134,319	136,020	111,026	134,319	130,006	134,319
Adjusted R-squared	0.725	0.744	0.729	0.737	0.745	0.745	0.745
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country

Table A10. Funding source and loan maturity: Sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *Loan maturity* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights, and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude collateral, performance provisions, and total covenants and in specification (3) we exclude AISD, loan amount, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	-2.141***	-2.076***	-2.195***	-2.014*	-2.173***	-2.071***	-2.074***
	(0.668)	(0.649)	(0.674)	(1.073)	(0.637)	(0.774)	(0.649)
Other DI features	0.107	0.063	0.083	-0.041	0.000	0.105	0.100
	(0.854)	(0.845)	(0.854)	(1.194)	(0.905)	(0.841)	(0.800)
AISD		0.009*		0.012**	0.009*	0.009*	0.009*
		(0.005)		(0.005)	(0.005)	(0.005)	(0.005)
Loan amount		2.246***		2.102***	2.226***	2.230***	2.225***
		(0.163)		(0.214)	(0.164)	(0.174)	(0.164)
Collateral			1.785***	1.783***	1.882***	1.897***	1.879***
			(0.324)	(0.328)	(0.273)	(0.295)	(0.275)
Number of lenders		0.107***		0.109***	0.096***	0.097***	0.096***
		(0.029)		(0.025)	(0.026)	(0.026)	(0.026)
Performance provisions			2.673***	1.950***	1.952***	2.014***	1.954***
			(0.213)	(0.221)	(0.141)	(0.128)	(0.142)
Total covenants			-0.430***	-0.511***	-0.475***	-0.481***	-0.475***
			(0.120)	(0.168)	(0.113)	(0.121)	(0.113)
Market-to-book	0.644	1.022***	0.689	1.113***	1.094***	1.073***	1.094***
	(0.474)	(0.172)	(0.489)	(0.192)	(0.164)	(0.179)	(0.163)
Firm size	-0.129	0.015	-0.104	-0.076	0.049	0.051	0.047
	(0.390)	(0.091)	(0.390)	(0.173)	(0.097)	(0.097)	(0.097)
Leverage	-1.614**	-2.756***	-1.693***	-2.926***	-2.918***	-2.940***	-2.919***
	(0.638)	(0.571)	(0.579)	(0.573)	(0.605)	(0.636)	(0.604)
Return on assets	0.530	1.260	0.288	-1.141	1.045	0.783	1.067
	(2.260)	(2.577)	(2.247)	(2.818)	(2.548)	(2.538)	(2.559)
Non-performing loans	2.019	1.017	1.830	-2.151	0.857	0.295	0.858
	(2.221)	(1.900)	(2.229)	(1.377)	(1.914)	(1.770)	(1.913)
Capital ratio	0.747	0.598	0.754	0.501	0.614	0.743	0.622
	(1.330)	(1.121)	(1.318)	(1.204)	(1.107)	(1.187)	(1.113)
Bank size	0.034	0.026	0.030	0.058*	0.023	0.029	0.023
	(0.031)	(0.028)	(0.031)	(0.033)	(0.029)	(0.030)	(0.029)
Creditor rights	-2.456	-3.117	-2.580	1.373	-3.146	-3.047	-3.063
	(2.843)	(2.881)	(2.811)	(3.021)	(2.871)	(3.034)	(2.838)
GDP growth (Firm's country)	0.082	0.083	0.078	0.147	0.086	0.078	0.031

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(0.093)	(0.093)	(0.094)	(0.103)	(0.092)	(0.101)	(0.086)
Capital regulations				0.150			
				(0.153)			
Private monitoring				-0.061			
				(0.293)			
Official supervisory power				0.079			
				(0.070)			
Bank crisis					0.411		
					(0.711)		
Stock market capitalization (Bank's country)						0.006	
						(0.005)	
GDP growth (Bank's country)							0.247**
							(0.097)
Observations	134,529	134,319	134,529	111,026	134,319	130,006	134,319
Adjusted R-squared	0.699	0.704	0.700	0.734	0.704	0.705	0.705
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country

Table A11. Funding source and collateral: Sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *Collateral* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude performance provisions and total covenants and in specification (3) we exclude AISD, loan amount, loan maturity, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	0.017***	0.013**	0.013**	0.007	0.010	0.011	0.008
	(0.006)	(0.006)	(0.006)	(0.011)	(0.006)	(0.008)	(0.006)
Other DI features	-0.005	-0.005	-0.005	0.012	-0.003	-0.005	-0.004
	(0.004)	(0.004)	(0.006)	(0.009)	(0.006)	(0.006)	(0.006)
AISD		0.000***		0.000***	0.000***	0.000***	0.000***
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Loan amount		-0.011***		-0.011***	-0.013***	-0.013***	-0.013***
		(0.002)		(0.002)	(0.002)	(0.002)	(0.002)
Loan maturity		0.001***		0.000***	0.001***	0.001***	0.001***
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Number of lenders		0.001*		-0.001***	-0.000	-0.000	-0.000
		(0.001)		(0.000)	(0.000)	(0.000)	(0.000)
Performance provisions			0.027***	0.037***	0.037***	0.037***	0.037***
			(0.004)	(0.008)	(0.005)	(0.006)	(0.005)
Total covenants			0.065***	0.067***	0.062***	0.062***	0.062***
			(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Market-to-book	-0.082***	-0.056***	-0.078***	-0.046**	-0.049***	-0.049***	-0.049***
	(0.016)	(0.018)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Firm size	-0.024***	-0.004	-0.023***	0.003	-0.001	-0.001	-0.001
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Leverage	0.166***	0.121***	0.175***	0.131***	0.126***	0.124***	0.126***
	(0.018)	(0.019)	(0.014)	(0.016)	(0.016)	(0.014)	(0.016)
Return on assets	0.046	0.078**	0.043	0.072***	0.080**	0.090***	0.079**
	(0.031)	(0.030)	(0.030)	(0.025)	(0.031)	(0.023)	(0.031)
Non-performing loans	0.082***	0.051**	0.072***	0.065***	0.037	0.040	0.037
	(0.023)	(0.025)	(0.022)	(0.022)	(0.026)	(0.028)	(0.026)
Capital ratio	-0.019	-0.022	-0.018	-0.010	-0.022	-0.022	-0.022
	(0.022)	(0.024)	(0.021)	(0.025)	(0.022)	(0.023)	(0.022)
Bank size	0.001**	0.001**	0.001*	0.001	0.001*	0.001*	0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Creditor rights	0.023	0.025	0.006	0.020	0.011	0.009	0.011
	(0.032)	(0.029)	(0.034)	(0.035)	(0.031)	(0.030)	(0.031)

GDP growth (Firm's country)	-0.001	-0.000	-0.001	-0.001	-0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Capital regulations				-0.000			
				(0.002)			
Private monitoring				-0.006**			
				(0.002)			
Official supervisory power				0.001			
				(0.001)			
Bank crisis					-0.015		
					(0.011)		
Stock market capitalization (Bank's country)						-0.000	
						(0.000)	
GDP growth (Bank's country)							0.001
							(0.002)
Observations	136,230	134,319	136,230	111,026	134,319	130,006	134,319
Adjusted R-squared	0.636	0.643	0.649	0.687	0.655	0.654	0.655
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country

Table A12. Funding source and performance provisions: Sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *Performance provisions* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude collateral and total covenants and in specification (3) we exclude AISD, loan amount, loan maturity, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	0.020***	0.028***	0.011	0.025***	0.017**	0.025***	0.018**
	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)	(0.009)	(0.007)
Other DI features	0.010	0.011	0.012	0.011	0.011	0.009	0.012
	(0.012)	(0.012)	(0.009)	(0.008)	(0.009)	(0.010)	(0.009)
AISD		-0.000***		-0.000***	-0.000***	-0.000***	-0.000***
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Loan amount		0.023***		0.022***	0.021***	0.021***	0.021***
		(0.001)		(0.001)	(0.001)	(0.001)	(0.001)
Loan maturity		0.000***		0.000***	0.000***	0.000***	0.000***
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Collateral			0.023***	0.034***	0.031***	0.030***	0.031***
			(0.004)	(0.008)	(0.005)	(0.005)	(0.005)
Number of lenders		0.008***		0.007***	0.006***	0.006***	0.006***
		(0.002)		(0.001)	(0.001)	(0.001)	(0.001)
Total covenants			0.138***	0.139***	0.131***	0.131***	0.131***
			(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Market-to-book	0.027***	-0.010*	0.040***	0.002	0.006	0.007	0.006
	(0.004)	(0.005)	(0.003)	(0.008)	(0.005)	(0.006)	(0.005)
Firm size	0.003***	-0.024***	0.007***	-0.026***	-0.018***	-0.019***	-0.018***
	(0.001)	(0.005)	(0.001)	(0.006)	(0.004)	(0.003)	(0.004)
Leverage	-0.101***	-0.045**	-0.092***	-0.043***	-0.042***	-0.042***	-0.042***
	(0.015)	(0.017)	(0.010)	(0.014)	(0.013)	(0.012)	(0.013)
Return on assets	0.075***	0.019	0.072***	0.015	0.020	0.006	0.020
	(0.021)	(0.028)	(0.019)	(0.022)	(0.020)	(0.017)	(0.020)
Non-performing loans	0.034**	0.075***	0.012	0.058*	0.050*	0.050*	0.050*
	(0.015)	(0.022)	(0.019)	(0.035)	(0.025)	(0.026)	(0.025)
Capital ratio	0.006	0.012	0.009	0.004	0.014	0.013	0.014
	(0.009)	(0.011)	(0.011)	(0.014)	(0.013)	(0.013)	(0.013)
Bank size	0.001***	0.001**	0.001***	0.001*	0.001*	0.001*	0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Creditor rights	0.070**	0.043*	0.037	-0.051***	0.017	0.016	0.016
	(0.029)	(0.023)	(0.028)	(0.010)	(0.025)	(0.025)	(0.025)
GDP growth (Firm's country)	0.002*	0.001	0.002**	0.000	0.001	0.001	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Capital regulations				0.001			
				(0.003)			
Private monitoring				-0.004			
				(0.002)			
Official supervisory power				-0.003*			
				(0.001)			
Bank crisis					0.009*		
					(0.005)		
Stock market capitalization (Bank's country)						-0.000	
						(0.000)	
GDP growth (Bank's country)							-0.000
							(0.001)
Observations	136,230	134,319	136,230	111,026	134,319	130,006	134,319
Adjusted R-squared	0.436	0.464	0.520	0.567	0.538	0.542	0.538
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country

Table A13. Funding source and total covenants: Sensitivity tests

The table reports coefficients and standard errors (in brackets). Dependent variable is *Total covenants* and all variables are defined in Table 1. Estimation method is OLS with standard errors clustered by lender's country. Specification (1) includes firm and bank-level controls, creditor rights and GDP growth for the country of the borrower and we exclude the full gamut of loan-level controls. In specification (2) we exclude collateral and performance provisions and in specification (3) we exclude AISD, loan amount, loan maturity, and the number of the lenders. Specification (4) further includes regulatory and supervisory policy controls. Specifications (5), (6), and (7) additionally include controls for bank crisis, stock-market capitalization and GDP growth for the country of the lender, respectively. The lower part of the table denotes the type of fixed effects used in each specification. The *, **, and *** marks denote statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DI funding source	0.066**	0.070**	0.038	0.041	0.039	0.022	0.037
	(0.028)	(0.030)	(0.028)	(0.034)	(0.030)	(0.032)	(0.029)
Other DI features	-0.009	-0.008	-0.017	-0.016	-0.016	-0.013	-0.018
	(0.049)	(0.052)	(0.041)	(0.031)	(0.045)	(0.043)	(0.044)
AISD		-0.000		0.000**	0.000	0.000	0.000
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Loan amount		0.014***		-0.007***	-0.004**	-0.003*	-0.004**
		(0.003)		(0.002)	(0.002)	(0.002)	(0.002)
Loan maturity		-0.000		-0.001***	-0.001***	-0.001***	-0.001***
		(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Collateral			0.408***	0.457***	0.395***	0.399***	0.395***
			(0.026)	(0.027)	(0.024)	(0.022)	(0.024)
Number of lenders		0.016***		0.008***	0.007***	0.008***	0.007***
		(0.005)		(0.002)	(0.002)	(0.002)	(0.002)
Performance provisions			1.032***	1.028***	0.992***	1.006***	0.992***
			(0.066)	(0.053)	(0.059)	(0.048)	(0.059)
Market-to-book	-0.076***	-0.110***	-0.071***	-0.063***	-0.077***	-0.078***	-0.077***
	(0.013)	(0.010)	(0.015)	(0.021)	(0.012)	(0.013)	(0.012)
Firm size	-0.021***	-0.042***	-0.015***	-0.019***	-0.017***	-0.016***	-0.017***
	(0.003)	(0.010)	(0.002)	(0.005)	(0.004)	(0.004)	(0.004)
Leverage	-0.091*	-0.054	-0.054*	-0.085**	-0.057*	-0.053	-0.057*
	(0.052)	(0.049)	(0.032)	(0.038)	(0.030)	(0.035)	(0.030)
Return on assets	0.015	-0.025	-0.082	-0.072	-0.074	-0.051	-0.075
	(0.084)	(0.104)	(0.082)	(0.124)	(0.087)	(0.105)	(0.087)
Non-performing loans	0.146***	0.177***	0.077	0.034	0.082	0.080	0.082
	(0.049)	(0.042)	(0.054)	(0.082)	(0.054)	(0.054)	(0.054)
Capital ratio	-0.018	-0.007	-0.017	0.014	-0.010	-0.013	-0.010
	(0.031)	(0.029)	(0.027)	(0.023)	(0.026)	(0.028)	(0.026)
Bank size	0.002	0.001	0.000	-0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Creditor rights	0.233***	0.193***	0.151**	0.008	0.141*	0.160**	0.140*
	(0.073)	(0.068)	(0.070)	(0.032)	(0.071)	(0.072)	(0.070)
GDP growth (Firm's country)	0.001	0.001	-0.001	-0.001	-0.000	0.000	0.001

	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Capital regulations				-0.015*			
				(0.008)			
Private monitoring				0.015			
				(0.010)			
Official supervisory power				0.001			
				(0.005)			
Bank crisis					-0.015		
					(0.024)		
Stock market capitalization (Bank's country)						0.000	
						(0.000)	
GDP growth (Bank's country)							-0.004
							(0.005)
Observations	136,230	134,319	136,230	111,026	134,319	130,006	134,319
Adjusted R-squared	0.602	0.617	0.670	0.712	0.678	0.679	0.678
Loan type effects	Y	Y	Y	Y	Y	Y	Y
Loan purpose effects	Y	Y	Y	Y	Y	Y	Y
Year effects	Y	Y	Y	Y	Y	Y	Y
Firm effects	Y	Y	Y	Y	Y	Y	Y
Bank effects	Y	Y	Y	Y	Y	Y	Y
Clustered standard errors	Country	Country	Country	Country	Country	Country	Country