

Corporate Debt Structure Around the World

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Abstract

We reconstruct the debt ownership structure of 10,136 firms in 52 countries over 2002-2021. Contrary to prior literature, debt ownership is most concentrated in civil-law countries and most dispersed in common-law countries. This result is driven by junior arm's length debt dispersion. Where investor protection is stronger, dispersed arm's length debt coexists with concentrated bank debt. These patterns are most pronounced among small-to-medium size firms, whereas the largest firms have dispersed debt ownership by international investors almost irrespective of their country of incorporation. In weaker investor protection environments, firms mitigate the unfavorable institutional environment by borrowing at shorter maturity and in USD-denominated debt. Our results broadly support legal origin and financial contracting theories.

Keywords: Debt Structure, Debt Ownership Concentration, Law and Finance, Investor Protection, Creditor Rights

JEL Classifications: G30, G32, K00, N20

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Corporate Debt Structure Around the World*

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Abstract

We reconstruct the debt ownership structure of 10,136 firms in 52 countries over 2002-2021. Contrary to prior literature, debt ownership is most concentrated in civil-law countries and most dispersed in common-law countries. This result is driven by junior arm's-length debt dispersion. Where investor protection is stronger, dispersed arm's-length debt coexists with concentrated bank debt. In weaker investor protection environments firms rely more on short-maturity and USD-denominated borrowing. These patterns are most pronounced among small-to-medium firms, whereas the largest exhibit dispersed debt ownership by international investors almost irrespective of country of incorporation. Our results support legal origin and financial contracting theories.

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1 Introduction

Understanding the determinants and consequences of different sources of external financing is a first order question in corporate finance. While there has been a lot of work to date on equity ownership and control around the world (e.g., [La Porta et al. \(1998\)](#), [La Porta et al. \(1999\)](#), [Aminadav and Papaioannou \(2020\)](#)), corporate debt structures have received less attention. Given that debt represents about 85% of the external financing of firms ([Beck et al. \(2008\)](#)) and debt structures determine the allocation of power and assets in financial distress and bankruptcy, it is important to study corporate debt structures around the world.

Debt structures are complex and multidimensional. Some firms borrow from a single bank, using loans or credit lines; others borrow from multiple banks; others issue bonds to arm's length investors; and others borrow using a combination of debt classes from a multiplicity of borrowers. A sizable literature has studied various individual aspects of firms' debt structures across countries, but the literature has yet to reach a consensus, some times even on basic correlations, due to a number of empirical challenges.

The first challenge is that no single database covers all possible debt contracts and reports the identity of all lenders. Datasets covering bank debt contracts either focus on specific debt markets, e.g., individual bank loans ([Ongena and Smith \(2000\)](#), [Detragiache et al. \(2000\)](#)), or the syndicated loan markets ([Esty and Megginson \(2003\)](#); [Qian and Strahan \(2007\)](#); [Bae and Goyal \(2009\)](#)), and do not cover arm's length contracts. Conversely, datasets covering bond issues do not cover bank debt ([Manconi et al. \(2016\)](#), [Bretscher et al. \(forthcoming\)](#)). Furthermore, datasets of aggregate debt classes do not record identity and stakes of all lenders ([Colla et al. \(2013\)](#); [John et al. \(2021\)](#)). Finally, datasets of capital structure do not distinguish among debt classes and do not record identity and stakes of all lenders ([Demirgüç-Kunt and Maksimovic \(1999\)](#), [Giannetti \(2003\)](#), [Fan et al. \(2012\)](#)).

A second challenge relates to sample size and composition. Some of these datasets cover predominantly large firms, others cover small-to-medium size firms, which is problematic because younger and smaller issuers do not access bond markets, e.g., see [Darmouni and](#)

[Papoutsis \(2025\)](#). A third challenge is heterogeneity with respect to size and age of public and private sample firms. The size distribution of firms is highly skewed and private and public firms at different stages of their life cycle differ systematically in their debt structure, and these differences need to be accounted for in the empirical analysis. Finally, unlike in the case of equity, no regulation mandates the disclosure of large blocks of bond holdings in excess of some threshold. As a result, reconstructing the full debt structure of firms is challenging, as it is possible to miss sizeable untraded or privately placed blocks of debt.

We make progress on each of these fronts by combining for the first time different databases, which report the identity of the holders of a variety of outstanding debt contracts at the firm level, including bank loans, syndicated loans, credit lines, bonds, notes, and by collating this information to reconstruct as large a fraction as possible of the ownership of outstanding debt. We end up with a comprehensive dataset of 10,136 firms operating across 52 countries from 2002 to 2021, which comprises 124,101 corporate bond issues held by 63,323 bondholders and 85,817 bank loans and credit lines extended by 10,154 banks.

Debt structures allocate power across creditors and between creditors and debtors. Economic theories of debt structure and creditor power start from the observation that when lenders can more easily force repayment, repossess collateral, or even gain control of the firm following non-repayment ex post, they are more willing to lend ex ante. These power theories of credit have been formalized in a one-creditor context by [Townsend \(1979\)](#), [Aghion and Bolton \(1992\)](#), and [Hart and Moore \(1994, 1998\)](#).

Building on this framework, there are two views of debt structure and creditor power in a context of creditor multiplicity. Under one view, high debt ownership dispersion substitutes for low investor protection. The reason is that debt ownership dispersion protects creditors against strategic default ([Bolton and Scharfstein, 1996](#)), which makes dispersion valuable at low levels of investor protection where strategic default is problematic ([Diamond, 2004](#)). [Diamond \(2004\)](#) also emphasizes that when investor protection is low creditors should protect themselves by lending at short maturity.

Under another view, high debt ownership dispersion is an outcome of high investor protection. The key idea here is that small, diversified investors can only be prevalent when investor protection is high (La Porta et al., 2008, 1998). Gennaioli and Rossi (2013) present a model where concentrated debt with exclusive control rights over the liquidation/reorganization decision coexists with dispersed junior creditors without control rights. In such a model, dispersion of junior debt protects the borrower against inefficient liquidation, which makes dispersion valuable at relatively high levels of investor protection, where rescuing profitable firms ex post is valuable. Gennaioli and Rossi (2013) also emphasize how securing debt with collateral should be easier when investor protection is higher.

While the two views yield opposite predictions on the dispersion of total debt ownership, the two views are not necessarily mutually exclusive, at least as soon as one recognizes that Bolton and Scharfstein (1996) and Diamond (2004) model a single debt class of “large” creditors without considering the allocation of control rights over the liquidation/reorganization decision, whereas Gennaioli and Rossi (2013) study the allocation of control rights and allow for multiple classes of debt without considering debt maturity.

In this paper, we focus on five aspects of the debt structure related to creditor power for which we observe data: What determines the number of creditors a firm borrows from? What determines the relative importance of different debt classes that firms use? What determines the maturity of (different types of) debt contracts? What determines the allocation of security interests among creditors and debt types? What determines the currency of debt contracts? Our analysis shows that there are large differences in debt structures across legal families and yields the following results.

- (i) Total debt ownership is most concentrated in civil law countries, and it is most dispersed in common law countries. There is significant heterogeneity with respect to debt types: ownership dispersion in arm’s length debt is largest in common law countries, whereas, if anything, firms borrow from more banks in civil law countries. Hence, the result that total debt ownership dispersion is largest in common law countries is driven by

bond ownership dispersion. This is a novel result. As we discuss below in detail, prior literature has examined only bank debt, documenting the opposite result of higher total debt ownership dispersion in civil law countries.

- (ii) Firms in civil law countries borrow at shorter maturity. When distinguishing between bank debt and arm's length debt, we find that firms in common law countries issue bonds at significantly longer maturity; whereas bank loans and credit lines have very similar maturity across legal origins. As a result, the finding that maturity is shorter in civil law countries is driven by the maturity of arm's length debt.
- (iii) Firms in common law countries are more likely to have their debt secured by some collateral. When distinguishing between bank debt and arm's length debt, we find that firms in common law countries are more likely to have secured bank debt, whereas arm's length debt is similarly (un-)secured in common law and civil law countries.
- (iv) Firms in civil law countries are more likely to borrow in USD-denominated debt contracts. The USD-denominated proportion of both bank loans and arm's length debt is larger in French civil law countries. On the other hand, German civil law countries borrow in local currencies.
- (v) Whereas total corporate leverage is similar across all regions and in common law and civil law countries, firms in civil law countries are more likely to borrow from banks and less likely to issue arm's length debt than firms in common law countries.

Next, we examine the correlation between corporate control and institutional characteristics that legal origin theories emphasize in a simple, unified framework, employing multiple proxies for institutional quality to account for specific theoretical predictions. Namely, the creditor rights index ([Djankov et al. \(2007\)](#)) measures the rights of secured creditors in bankruptcy, and we use it accordingly to examine cross-country variation in secured debt. On the other hand, the anti-self-dealing index ([Djankov et al. \(2008b\)](#)) measures the legal

protection available to minority investors against managerial self dealing in terms of both disclosure and enforcement, and although it is defined specifically for minority shareholders it is likely also relevant for dispersed, arm's length creditors.¹ Although the cross-country associations are not well suited to advance causality, they are informative on the characteristics of the legal and institutional environment that relate to corporate debt structure.

- (vi) Anti-self-dealing measures, namely, corporate law provisions allowing investors to take legal action against corporate insiders who abuse their position, are systematically linked to debt ownership dispersion. The correlation is not particularly strong in the full sample, but it masks considerable heterogeneity. For all but the firms in the largest size quartile, better anti-self-dealing provisions strongly correlate with higher total debt dispersion, and with higher dispersion in arm's length debt ownership. By contrast, for all firms, and particularly for the larger ones, better anti-self-dealing provisions correlate with lower bank ownership dispersion. That is, the stronger the investor protection, the more dispersed total debt ownership and public bond ownership; but the smaller the number of banks a firm borrows from.
- (vii) Anti-self-dealing provisions are systematically linked to corporate debt maturity. This correlation masks considerable heterogeneity, too. Stronger investor protection is correlated with longer maturity of arm's length debt. The effect is largest for the smallest firms, declines monotonically with firm size, and remains strongly significant for all but the largest firm size quartile. Total debt maturity increases with investor protection, but the effect is significant only for small-to-medium size firms. On the other hand, the maturity of bank debt is, if anything, slightly decreasing with investor protection, particularly for larger firms, although the economic significance of this effect is small.
- (viii) Creditor rights correlate with the extent to which corporate debt is secured by collateral.

¹Note the rights of secured creditors often come at the expense of junior arm's length bondholders, giving rise to conflicts of interest among different classes of creditors, e.g., see [Ayotte and Morrison \(2009\)](#). Furthermore, using the anti-self-dealing index to assess debt ownership dispersion is exactly in line with the theoretical model of [Gennaioli and Rossi \(2013\)](#). See our discussion in Section 2.7.

The stronger the creditor rights, the larger the likelihood that total debt is secured by collateral. This result is driven entirely by bank debt.

In a nutshell, our results highlight that in countries with stronger investor protection the debt structure features dispersed debt ownership, with dispersed arm’s length borrowing coexisting with concentrated bank debt. In countries with weaker investor protection, firms mitigate the unfavorable institutional environment by borrowing at shorter maturity, and by borrowing in USD-denominated (foreign) debt. Furthermore, our analysis highlights that investor protection is particularly relevant, indeed crucial, for small-to-medium size firms. That is, the smallest firms in the size distribution are much better able to access bond markets in English common law countries than in French civil law countries. On the other hand, the largest firms are able to access dispersed international investors—and the protection of US courts—almost irrespective of their country of incorporation. The considerable heterogeneity that we uncover along debt types and firm size thus supports the importance of considering at the same time different sources of debt, including bank loans, credit lines, and arm’s length debt, to obtain a full picture of firm’s debt structure around the world.

Our results are consistent with legal origin and contracting theories of corporate finance (La Porta et al. (1998), Diamond (2004), Djankov et al. (2007), Djankov et al. (2008a), Gennaioli and Rossi (2013)). Consistent with La Porta et al. (1998) and La Porta et al. (2008), we find that debt ownership dispersion is largest in countries with better investor protection. In particular, our results are consistent with Gennaioli and Rossi (2013), who rationalize the coexistence of concentrated bank debt and dispersed arm’s length debt in the firm’s debt structure, and predict that dispersion of total debt and of arm’s length debt should increase with investor protection.

Our results are also consistent with the prediction of Diamond (2004) that firms in poor investor protection countries should mitigate the unfavorable institutional environment by borrowing more short term. Our results are also consistent with the prediction of Bolton and Scharfstein (1996) and Diamond (2004) that firms in poor investor protection countries

should borrow from more banks, although our empirical results highlight that in countries with stronger investor protection arm’s length borrowing is more prevalent—and much more dispersed—than bank borrowing.

Related literature. Our paper contributes to the literature on the corporate debt structure. [Ongena and Smith \(2000\)](#) examine bank debt in a cross section of countries; [Detragiache et al. \(2000\)](#) examine the number of bank relationships of Italian firms operating in regions with different enforcement costs; whereas [Esty and Megginson \(2003\)](#), [Qian and Strahan \(2007\)](#), and [Bae and Goyal \(2009\)](#) focus on syndicated loans around the world. These papers find that firms borrow from more banks in countries with weaker investor protection, and interpret their evidence in line with the models of [Bolton and Scharfstein \(1996\)](#) and [Diamond \(2004\)](#) in which firms borrow from multiple creditors to prevent strategic default, and in which strategic default is a more relevant concern in countries with weaker investor protection. We confirm the result from this literature that, *when looking at bank debt in isolation*, bank debt dispersion and the number of banks is larger in civil law countries, and in countries with weaker investor protection; but we show that the picture changes dramatically and we obtain diametrically opposite results when considering total debt ownership, including the ownership of arm’s length debt, in line with the predictions of [La Porta et al. \(1998\)](#), [La Porta et al. \(2008\)](#), and [Gennaioli and Rossi \(2013\)](#).

Regarding debt maturity, [Demirgüç-Kunt and Maksimovic \(1999\)](#), [Giannetti \(2003\)](#), and [Fan et al. \(2012\)](#) examine corporate borrowing and find that the fraction of short term (as opposed to long term) debt is larger in countries with weaker investor protection (see [John et al. \(2017\)](#) for an opposing view). More recently, examining syndicated loan contracts [Qian and Strahan \(2007\)](#) and [Bae and Goyal \(2009\)](#) document a more nuanced picture. [Qian and Strahan \(2007\)](#) document that English common law countries have a 1-month longer maturity of bank loans than French civil law firms (see their Table 1), but a slightly shorter maturity in German and Scandinavian legal origin countries; in regression analysis, [Qian and Strahan \(2007\)](#) conclude that firms borrow with longer maturities in countries

with stronger creditor protection. [Bae and Goyal \(2009\)](#) reach similar conclusions, although arguing that it is enforceability of contracts that drives longer debt maturity rather than creditor rights. Our analysis builds on [Qian and Strahan \(2007\)](#) who emphasize heterogeneity with respect to firm size. That is, we confirm the importance of heterogeneity with respect to firm size and document the key role of heterogeneity with respect to debt types. In particular, when examining bank borrowing in isolation, we confirm the picture that French civil law countries have a shorter maturity than English common law countries, although the results are statistically insignificant and their economic magnitude is small. However, when examining arm’s length borrowing and total borrowing, the picture changes dramatically, in that firms in common law countries borrow with a much longer maturity, and the result is particularly strong for arm’s length debt and for small-to-medium size firms.

Regarding debt types, [John et al. \(2021\)](#) find that firms from countries with stronger creditor protection choose debt structures with fewer debt types and interpret their result as being in line with predictions of [Bolton and Scharfstein \(1996\)](#) that debt structures should be more dispersed in countries in which strategic default concerns are higher. By contrast, when examining direct measures of ultimate debt ownership rather than aggregate measures of the number of debt types, we document that the overall conclusions change and we obtain diametrically opposite results. Our results imply that the number of debt types, as defined in [Colla et al. \(2013\)](#), is a poor proxy for creditor concentration, and that assessing creditor concentration requires data on ultimate ownership of debt instruments.

Finally, our results contribute to the literature on debt currency, which emphasizes the role of the US dollar as the key anchor of exchange rate regimes, e.g., see [Maggiori et al. \(2024\)](#) and references therein. Our results underscore the importance of borrowing in US dollars for firms located in French civil countries to be able to access the protection of US courts, in line with the legal ruling studied in [Hébert and Schreger \(2017\)](#).²

²A recent and growing empirical literature examines the effects of financial reform, in particular changes to creditor protection under bankruptcy laws in individual countries, on various firm-level outcomes, including debt structures. See, among others, [Scott and Smith \(1986\)](#), [Hackbarth et al. \(2015\)](#), and [Kornejew \(2024\)](#) for the US, [Lilienfeld-Toal et al. \(2012\)](#) and [Vig \(2013\)](#) for India, [Araujo et al. \(2012\)](#), [Assunção et al. \(2014\)](#),

The rest of the paper is organized as follows. Section 2 details the data sources and the construction of our final sample. Section 3 presents the main patterns of corporate debt structure around the world. Section 4 reports our empirical results. Section 5 concludes.

2 Data and Methodology

We construct a novel dataset of the corporate debt structure of firms around the globe. To that end, we combine data from various providers. First, we obtain detailed information on the debt structure of international firms from Capital IQ. We then merge this data with quarterly balance sheet information from Worldscope, Compustat Global, and Amadeus. Further, we complement the sample with information on the nature and ownership of bond issues, notes, and commercial papers from eMAXX and details on loans and lines of credit, along with information on the lenders of these facilities, from LPC Dealscan. The resulting dataset contains information on the debt structure of 10,136 firms in 52 countries from 2002Q2 to 2021Q3. We discuss in detail below the various steps of our sample construction. We describe in detail the steps to build our dataset in Sections 2.1, 2.2, 2.3, and 2.4, we discuss our measures of debt ownership concentration in Section 2.5, our other measures of creditor power in Section 2.6, and our main independent variables in Section 2.7.

2.1 Debt Structure Information

As outlined above, we first obtain detailed debt structure information for the universe of firms in *Capital IQ*. As reported in Table 1, Capital IQ contains information on 135,807 firms (42.7% of which are public). This data includes the quarterly breakdown of total debt into seven distinct categories: commercial paper, drawn credit lines, term loans, bonds and notes, capital leases, trusts, and a residual category encompassing other types of debt. In

and Ponticelli and Alencar (2016) for Brazil, Cerqueiro et al. (2016) and Cerqueiro et al. (2020) for Sweden, Campello and Larrain (2015) for Romania, and Rodano et al. (2016) for Italy. While these individual-country studies have been advancing causality by exploiting variation among treated vs untreated firms, they have examined a wide array of heterogeneous reforms and firm-level outcomes; as a result, external validity and comparability of results across countries and reforms may be problematic. We complement these approaches by providing a simple, unified framework across many countries to provide a panoramic analysis of the association between corporate debt structure and legal investor protection.

our analysis, we rely on the unique company identifier “companyid” provided by Capital IQ which helps us identify duplicate balance sheet information that exist in at least two of Amadeus, Worldscope and Compustat.³

2.2 Balance Sheet Information

In a second step, we retrieve quarterly balance sheet information of all firms available in either *Worldscope*, *Compustat Global*, or *Amadeus*. Then, we exclude firm-quarters from our sample which have missing or non-positive values for either total assets or total debt, or reported book leverage outside the unit interval. Moreover, since our ownership data is organized in calendar quarters, we map balance sheet information from fiscal quarters to calendar quarters based on the month in which the fiscal quarter concludes. For example, if a company’s fiscal quarter concludes in January, February, or March of 2010, we assign that firm’s quarterly balance sheet information to the first quarter of 2010, i.e. 2010Q1.

The merging of Capital IQ with the combined data from Worldscope, Compustat Global, and Amadeus is carried out in several steps. First, we merge the entire Capital IQ dataset with Worldscope. Each firm in Worldscope is matched with its corresponding companyid, as detailed in Appendix Section A7.1. Following the approach outlined by Colla et al. (2020), we then eliminate firm-quarters for which the absolute percentage difference between total debt reported in Worldscope and the sum of debt types reported in Capital IQ exceeds 10%.

Next, we turn to the remaining Capital IQ observations that did not successfully match with Worldscope and attempt to merge them with Compustat Global. Similarly, we merge these observations with Compustat and discard firm-quarters where the discrepancy between total debt reported in Compustat and the sum of debt types reported in Capital IQ exceeds 10% of Compustat total debt. For unmatched Capital IQ entries of European firms, we employ an analog methodology using the financial statements sourced from Amadeus.⁴

³In a related paper, Boyarchenko and Ellias (2024) combine security-level information from Capital IQ (Debt Capital Structure dataset) with firm-level balance sheet data from consolidated Compustat and Worldscope. In contrast to their study, our paper additionally considers debt ownership information which allows us to study debt ownership dispersion across countries.

⁴In a first step, our integration with Amadeus relies on firms with non-missing ISINs. In a second step,

Retaining firm-quarter observations with successful merges either in Worldscope, Compustat Global, and Amadeus and eliminating any duplicates leaves us with approximately 2.4 million firm-quarter observations, representing 85,370 unique firms across 145 countries as can be seen in Table 1. Notably, about 61% of this sample comprises public firms, with the remaining 39% being private firms. Going forward, we shall refer to the sample merging Capital IQ with balance-sheet information as our unrestricted sample. This sample includes information on several measures of creditor power, including maturity, collateral security, seniority, and currency, and we shall use this sample to provide robustness tests on the determinants of such measures. By comparing the results obtained in our unrestricted sample with the results obtained in the final sample (described below) we will below to further assess the extent to which issues of sample selection are likely to be affect our results.

2.3 Debt Ownership Information

Our key innovation in this paper is to gather ultimate debt ownership information for multiple debt classes and instruments at the same time. To that end, we obtain direct ownership information of **arm’s length debt** (commercial papers, bonds, and notes) from *Thomson Reuters eMAXX*, which offers extensive coverage of institutional investors’ fixed-income holdings at the security level. Importantly, these holdings are not limited to publicly traded securities but also include privately placed debt instruments such as 144A and Regulation S bonds, which have become more common in recent years, e.g., see [Ellias and De Fontenay \(2025\)](#). This database primarily includes asset holdings of insurance companies, mutual funds, ETFs, and pension funds.⁵ That is, for each calendar quarter, the dataset contains debt ownership data as well as information about the securities themselves and their issuers. When available, we rely on CUSIP as a primary identifier for a security. If CUSIP is not available, we use CINS as an identifier.⁶ The first six digits of CUSIP/CINS do not allow to unambiguously

we manually match firms which results in an additional 572 matched firms. Please see the details in Internet Appendix Section [A7.1](#).

⁵With some exceptions, the eMAXX database does not include holdings of hedge funds and banks.

⁶The CUSIP International Numbering System (CINS) is a 9-character alphanumeric identifier denoting international securities and is an extension of the CUSIP system used for U.S. and Canadian securities. CINS

identify the issuer for at least two reasons. First, the issuer identifier might change over time due to corporate events. As a result, the 6-digit CUSIP/CINS is different for outstanding securities and new issues. Second, depending on the offering type and market, the same issuer might be assigned several 6-digit identifiers.⁷ To overcome this problem, we use Refinitiv Python API and get the issuer PermIDs of all securities contained in eMAXX. This allows us to uniquely retrieve the “companyid” of the issuing firm from our Worldscope-Capital IQ merge which renders merging of ownership information from eMAXX with data on firm fundamentals straightforward. We discuss this procedure in detail in Internet Appendix A7.

To obtain **bank debt** ownership, we use *LSEG Loan Connector* which is part of *DealScan*. This data contains historical information on loan characteristics, contract details, terms, and conditions. We focus on the entire DealScan universe to ensure we capture loans which had been issued before the start of our sample but have not been fully repaid. Unlike eMAXX, which organizes the data as a quarterly panel, DealScan is event based. That is, each unique observation corresponds to a distinct combination of $Lender \times Borrower \times Tranche \times Amendment$. Therefore, we first have to re-organize the information contained in DealScan in a quarterly panel. To do so, we assume that, for each tranche, the composition of lenders and the lenders’ share in total lending would remain unchanged over time, unless, 1) there is a new amendment to the loan, in which case, we obtain an updated list of lenders; 2) the face value of the loan has been fully repaid; 3) the loan has reached its maturity date. These assumptions can be partially justified by the fact that only around 20% of syndicated loans are traded in secondary markets, as highlighted in Brealey et al. (2020, Ch. 24, p. 649). In addition, only about one quarter of syndicated loans are eligible for secondary market trading in the US. In Europe and Asia this fraction is even lower.⁸ Therefore, the composition of lenders of syndicated loans remains relatively stable over time.

employs the same nine characters as CUSIP but also contains a letter of the alphabet in the first position, denoting the issuer’s country or geographic region.

⁷For example, Microsoft has US bonds with CUSIPs starting with 594918 and 00507V and Eurobonds with CINS that start with U59340.

⁸As per information from the Bank of International Settlements. Refer to “The Syndicated Loan Market: Structure, Development and Implications” available at www.bis.org/publ/qtrpdf/r-qt0412g.pdf

For each quarterly observation of a loan, we calculate the remaining outstanding notional by taking into account the specified repayment schedule. These repayment schedules varied in installment frequency, ranging from weekly to once every three years. For cases where the repayment schedule is missing, we either assume a proportional repayment of all the outstanding loans with missing repayment schedules or a bullet payment at maturity. Distinguishing between proportional repayment and bullet repayment is made possible by comparing the observed outstanding Dealscan loans to the corresponding total outstanding loans from Capital IQ. Specifically, if the observed outstanding Dealscan loans amount to less than the total outstanding loans recorded in Capital IQ for the respective observation period, we assume a bullet repayment at maturity for these loans. Conversely, if the outstanding Dealscan loans exceed those in Capital IQ by $x\%$, it is assumed that $x\%$ of these loans have been fully repaid up to the current quarter.

DealScan does not report the type of lenders individually for each loan and instead reports the “union” of all lender types participating in each tranche⁹. To circumvent this issue, we employ a sequential approach. First, we focus on loans with only one lender. For this subsample, we directly observe a one-to-one mapping between lenders and types. Building on this, in a second step, we use data on loans with two lenders where we know one lender’s type from the first step, which allows us to determine the second lender’s type. This iterative procedure allows us to determine the types of 95% of the lenders in DealScan. The remaining 5% of lenders we label as “Other.” We then compute lender-specific ownership. For about one third of all loans in DealScan, we have explicit information on each lender’s ownership. For the remaining loans, we assume equal contributions of participating lenders.

Finally, we merge bank loan ownership information and the existing data. To do so, we follow a two-step process. First, we use the PermID to companyid linking table that we have previously compiled by combining several linking tables provided by Capital IQ and Refinitiv. For a more detailed discussion on this, we refer to Appendix Section [A7.1](#). Second,

⁹The lender types in DealScan include commercial banks, investment banks, other banks, insurance companies, distressed (vulture) funds, mutual funds, pension funds, hedge funds, trusts, and private equity.

we employ the linking table provided by [Chava and Roberts \(2008\)](#).¹⁰ As reported in Table 1, combining firm fundamentals with debt ownership data leaves us with 18,104 firms (about 57% are public firms) domiciled in 108 different countries.

2.4 Final Data Set

Our final dataset combines information from Capital IQ; quarterly balanced sheet data from Worldscope, Compustat Global, and Amadeus; arm’s length debt ownership data from eMAXX; and bank debt ownership data from DealScan. As our paper aims at studying the corporate debt structure around the world, we focus on firms for which we have ownership data for a significant fraction of their total debt. To that end, we apply two more filters in our sample construction, limiting our attention to firms for which we identify 1) debt instruments of at least 50% the book value of the firms’ total debt; and 2) debt owners of at least 30% of the book value of the firms’ total debt. That is, in summary, a hypothetical firm A is included in our sample in quarter t if and only if the following criteria are met:

1. Capital IQ contains data on the debt structure of firm A for quarter t ;
2. Worldscope, Compustat Global, or Amadeus contain balance sheet data of firm A for quarter t ;
3. The relative percentage difference between the total debt reported in Capital IQ and the balance sheet is less than 10%;
4. Debt instruments identified through eMAXX and DealScan account for at least 50% of firm A’s total debt amount outstanding according to the balance sheet;
5. Debt ownership must be known for at least 30% of firm A’s total debt amount outstanding according to the balance sheet.

¹⁰The linking table of [Chava and Roberts \(2008\)](#) is based on the legacy version of DealScan. Therefore, the borrower company identifiers must be updated according to the revamped version.

Finally, we exclude all observations from countries for which we have data on fewer than ten distinct firms. As reported in Table 1, our final sample includes 127,179 firm-quarter observations for 10,136 unique firms (of which 55% are public firms) in 52 countries.

It is important to note that, despite merging several data sets from different sources and applying many filters when constructing the data, our final sample does not look that different than the sample of firms which we used as “population”, i.e., the universe of firms contained in Capital IQ. As reported in Table 1, for example, the share of public firms is 55% in our final sample which compares to 43% in the Capital IQ sample. Given the fact that data availability is typically much better for public compared to private firms, this increase in the share of public firms seems quite small. Moreover, the slight increase in the share of arm’s length debt and credit lines in the final sample compared to the starting sample suggests that our sample features relatively more large firms compared to the population. Again, this shouldn’t come as a surprise as generally, data is more easily available for larger firms. Importantly, however, applying our filters four and five above does not materially change neither the average debt structures nor the average leverage of our sample firms.

Figure 1 shows the global average capital structure and debt structure for our pooled sample, including the composition of various debt types. The debt categories comprise arm’s-length debt, bank loans, credit lines, and other forms of debt. This figure also shows that average book leverage, measured as total book debt divided by total book assets, is 32.3%. When examining debt types as a percent of total book debt, bank loans are 34.8%, arm’s length debt is 29.2%, credit lines are 21%, and other types collectively amount to 15.1%.

Figure 2 reports the global evolution over 2002-2021 of leverage and debt composition. It shows that average leverage is quite stable over 2002-2021, hovering around 30-to-33% of total assets. On the other hand, in terms of debt structure over time we observe a gradual substitution of bank loans and—to a lesser extent—arm’s length debt for credit lines. In fact, credit lines steadily decline from about 30% of total debt in 2002 to about 15% in 2021, whereas bank loans increase from 27% to 36% and arm’s length debt from 27% to 32%.

2.5 Measures of Debt Ownership Concentration

To quantify the extent of concentration in debt ownership, we rely on four well-known measures of ownership concentration, originally developed in the literature on equity ownership. That is, we use for our analysis the number of creditors, the minimum number of creditors required to cross 10%, 20%, and 30% of debt ownership, the Herfindahl-Hirschman Index (HHI), and the cumulative ownership of the one, three, five, and ten largest lenders.

Our first concentration measure, the *number of total creditors*, is relatively uncontroversial both to measure as well as to interpret (see, for example, [Li and Yu \(2022\)](#)). That is, a lower (higher) number of creditors indicates a higher (lower) degree of ownership concentration.

Second and relatedly, the *minimum number of creditors required to cross a certain ownership threshold* is defined as follows:

$$NtC_{X\%} = \min\{n \text{ s.t. } \sum_{i=1}^n \omega^i \geq X\%\} \quad (1)$$

where NtC stands for “Number to Cross”, ω^i denotes the cumulative ownership share in percent of the i -th largest lender, and $X\%$ denotes the ownership threshold. For the ownership threshold we consider 10%, 20%, and 30%, respectively. A low (high) number of creditors to cross a certain ownership threshold indicates higher (lower) degree of ownership concentration ([Franks et al., 2009](#)).

Third, the *Herfindahl-Hirschman Index (HHI)* represents the sum of squared fractional holdings of creditors, calculated relative to the total debt for which we observe ownership in a given firm and quarter. That is,

$$HHI = \sum_{i=1}^n \omega^{i2}, \quad (2)$$

where n is the total number of observed creditors and ω^i denotes the ownership share of i -th largest lender as a fraction of total debt for which we observe ownership. That is, a high (low) HHI indicates high (low) degree of ownership concentration. This methodology aligns with previous studies that rely on observations where less than 100% of the underlying ownership

is observed (see, for example, [Li and Yu \(2022\)](#)). HHI for bank debt and bond debt (also referred to as arm’s length debt) is defined in an analogously. That is, the denominator of fractional holdings are total bank debt with observed ownership and total arm’s length debt with observed ownership, respectively.

Importantly, using the total amount of underlying debt in the denominator of fractional holdings, rather than the total amount for which we observe ownership, would inevitably bias the resulting HHI downward. The magnitude of this bias is directly related to the fraction of debt with unobserved ownerships. Instead, we derive an unbiased estimator under the assumption that the ownership concentration we observe is representative for the ownership concentration of all creditors of a firm. The fifth criterion in our final sample construction guarantees we retain only observations with full information on a substantial fraction of debt. Moreover, when computing HHI statistics for bank and arm’s length debt separately, we apply a similar criterion: we compute HHI for bank and arm’s length debt only for firm-quarters for which we have ownership information for at least 30% of arm’s length debt.

Finally, we compute cumulative ownership measures in line with [Franks et al. \(2009\)](#) as:

$$Cj = \sum_{i=1}^j \omega^i \quad (3)$$

where, as above, ω^i denotes the percent ownership share of the i -th largest lender, and we consider $j = 1, 3, 5$, and 10 , indicating the cumulative ownership of the largest 1, 3, 5, and 10 creditors, respectively. That is, a higher (lower) value for the measures $C1$ to $C10$ indicates a higher (lower) ownership concentration. Analogous to the HHI, the ownership shares are relative to the total amount of debt for which we have ownership information. Moreover, for statistics specific to bank or arm’s length debt we require to observe ownership information for at least 30% of total bank or arm’s length debt outstanding to avoid any downward bias. For a more detailed discussion of our variable definitions, please see Appendix Table [A1](#).

2.6 Other Measures of Creditor Power

The other measures of creditor power we consider are more conventional and we briefly mention them here. Maturity is the number of years until final repayment for each debt instrument. For each firm, we obtain a single measure of debt maturity based on the dollar weighted average of the maturity of the outstanding debt instruments. Collateral security is the percent of total debt that is secured by collateral, be it physical or non-physical collateral (our data does not allow to distinguish the two). Debt in local currency is the percent of debt issued in the local currency of the firm’s country. Debt in USD (as foreign) is the percent of foreign currency debt issued in US dollars (it is zero for US firms). All of these measures are defined for total debt, as well as separately for arm’s length debt and bank debt.

2.7 Measures of Legal Origin and Investor Protection

Our main independent variables are indicators for the legal origin of the company law or commercial code and indices for the extent of legal protection of investors. There are four main legal origins, namely English, French, German, and Scandinavian. The English legal origin includes the Common Law of England and the colonies to which it spread, including Australia, Canada, and the United States. The French legal origin includes the civil law of France, of countries Napoleon conquered (including Portugal and Spain), and of their former colonies. The German legal origin includes the laws of the Germanic countries in central Europe and countries in East Asia where the German law was transplanted. The Scandinavian legal origin refers to the laws of the four Scandinavian countries. [La Porta et al. \(2008, 1998\)](#) demonstrate that English common law protects investors significantly more than laws from other legal origins.

Regarding investor protection, we would ideally like to have a unique, comprehensive measure of the extent of the legal protection of all creditors, including senior large secured lenders and junior arm’s length dispersed bondholders. To date, such a variable does not exist. In fact, the creditor rights score ([Djankov et al., 2007](#)) measures the rights of secured

lenders in bankruptcy, whereby a score of one is added if there are (i) restrictions to debtors unilateral filing for reorganization, (ii) no automatic stay, (iii) absolute priority, and (iv) management not staying during reorganization. However, such rights of secured creditors often come at the expense of junior arm’s length creditors, giving rise to conflicts of interest among different classes of creditors, e.g., see [Ayotte and Morrison \(2009\)](#). Similarly, the anti-self-dealing index ([Djankov et al., 2008b](#)) measures the extent of legal protection of minority shareholders against expropriation by corporate insiders, focusing on private enforcement mechanisms such as disclosure, approval, and litigation. As such, it is likely to be relevant also for dispersed junior bondholders. From Appendix Table [A2](#) the correlation between the creditor rights score and the anti-self-dealing index is 0.53, supporting the idea that, while they move in the same predicted direction, the two indices capture the legal protection of somewhat different constituencies.

We resolve this tension by relying on specific theoretical predictions. Accordingly, we use the creditor rights score to test predictions related to variation in debt collateral security, and we use the anti-self-dealing index to examine variation in debt ownership concentration, as [Gennaioli and Rossi \(2013\)](#) write that in their model “creditor dispersion is valuable at relatively high levels of investor protection” (p. 621-622) and that “(T)he notion of investor protection relevant for this prediction is broader than that of creditor rights and includes shareholder protection against managerial self-dealing and tunneling” (p. 624).

2.8 Measuring Access to Public Bond Markets and Credit Quality

We measure access to public bond markets and credit quality using credit rating data from Capital IQ, providing the most recent rating data for many companies across different countries. We use the data item “CREDIT RATING GLOBAL,” and following [Faulkender and Petersen \(2006\)](#) and [Santos and Winton \(2008\)](#), among others, we measure access to public bond markets with a dummy that equals one if the firm has a credit rating. This variable captures systematic differences in access to different sources of capital. Furthermore, following [Qian and Strahan \(2007\)](#), we measure credit quality by converting firms’ credit ratings

into a credit score ranging from zero to six, where one indicates an Aaa rating, two indicates an Aa rating, and so on, with six indicating a B or worse rating. We find the most recent credit rating data for approximately one-third of the firms in our sample. However, since our data does not report the date of the rating, we use this information only in cross-sectional regressions towards the end of our sample, specifically for 2019Q1.

3 Patterns

We aim to provide the most up-to-date characterization of corporate debt structure around the world. In this Section, we report descriptive statistics.

3.1 Summary Statistics

Figure 3 provides a map of corporate debt structure around the world for four legal origins, namely English common law, Scandinavian civil law, German civil law, and French civil law, following the classification in [La Porta et al. \(2008\)](#). The map illustrates the considerable heterogeneity in debt structure around the world. Two clear patterns emerge: 1) English common law firms borrow predominantly using arm’s length debt; 2) civil law firms borrow predominantly using bank loans.

To dig deeper, Table 2 reports detailed summary statistics for our final sample, for each country individually and for the four legal origins. Average leverage is quite similar across legal origins, about 33-to-35% of assets in both French civil law and English common law countries, and not far from that in German and Scandinavian countries. Table 2 substantiates the considerable heterogeneity in debt structure around the world illustrated in Figure 3. In fact, firms in English common law countries borrow predominantly using arm’s length debt at 36% of total debt, followed by bank loans at 27% and credit lines at 24%. On the other hand, bank loans amount to 55% of total debt in French civil law countries and even 63% in German civil law countries. By contrast, arm’s length debt amounts to 16% of total debt in French civil law countries and a meager 3% in German civil law countries.

The last two columns of Table 2 show that we identify on average about 85% of firms’ debt instruments in terms of par outstanding and we have ownership data on average for about 73% of firms’ total debt outstanding. This gives us confidence that our data is rich enough to make precise statements about the firms included in our final sample. About 45% of the firms in our sample are in the US (4449 firms). For this reason, we perform extensive robustness tests excluding US firms—presented in Appendix Section A4 and discussed in Section 4.5.2— and we find very similar results to those using the pooled sample. Finally, while we observe both public and private firms in all countries, we observe more private firms in English common law countries compared to the other three civil law origins.

3.2 Debt Ownership Concentration

Figure 4, Panels A, B, and C, illustrates the differences in the distribution of debt ownership concentration between English common law and French civil law countries using the number of creditors measure, separately for bank debt, arms length debt, and total debt, respectively.

Panel A shows that firms in French civil law countries borrow from more banks than firms in English common law countries. The interpretation is that bank debt ownership is more concentrated in English common law countries than in French civil law countries. This pattern is in line with prior literature that examine bank lending across countries such as Esty and Megginson (2003), Qian and Strahan (2007), and Bae and Goyal (2009).

Panel B shows that the pattern dramatically reverses when considering ownership of arm’s length debt, as firms in English common law countries borrow from many more bondholders than firms in French civil law countries, implying firms in English common law countries have more dispersed arm’s length debt ownership than firms in French civil law countries. Panel C shows that this pattern carries over to total debt ownership concentration, as firms in English common law countries borrow from many more overall creditors, and have thus much more dispersed debt ownership, than firms in French civil law countries.

Figure A1 and A2 in Internet Appendix report the exact same patterns using the C5 and the $NtC_{30\%}$ measures of debt ownership concentration. Firms in French civil law countries

have more dispersed bank ownership than firms in English common law countries, as the collective debt ownership of the top 5 banks is smaller in French civil law countries than in English common law countries, and the number of banks needed to cross the 30% debt ownership threshold is larger in French civil law countries than in English common law countries, consistent with prior literature. However, this pattern dramatically reverses when examining arm's length debt ownership and total debt ownership: firms in English common law countries have a much more dispersed ownership of arm's length debt and of total debt than firms in French civil law countries, also using the $C5$ and $NtC_{30\%}$ measures.

Figure 5 shows that the debt dispersion patterns described above are due to much smaller firms being able to access bond markets in English common law countries relative to French common law countries. Across all percentiles of the size distribution of firms with arms' length debt outstanding, firms in English common law countries are systematically smaller. For example, firms at the 5th, 10th, and 20th percentiles of the firm size distribution in English common law countries are at least three times smaller than their counterparts in French civil law countries.

Figure 6 examines the evolution over the firm's life cycle of leverage (Panel A), debt structure (Panel B), and debt ownership concentration (Panel C). Year 0 denotes the year the firm is established. Figure 6 shows that while leverage is quite stable over the firm's life cycle (Panel A), firms substitute arms' length debt for bank loans and credit lines, as arm's length debt starts picking up at about year 60 of the firms' life (Panel B). If firms become less risky as they age, this pattern is consistent with the theory of debt structure in [Bolton and Freixas \(2000\)](#). Panel C shows that as soon as arm's length debt starts picking up, the firms' debt ownership concentration also decreases sharply, at least in terms of overall number of creditors, and number of creditors needed to cross the 30% threshold.

Table 3 reports bank debt ownership concentration statistics by individual countries and legal origins. It shows that both number of loan tranches and number of loans is smaller for firms in English common law compared to civil law legal origins. The number of lead

arrangers in syndicated loans is also lower in firms in English common law countries (on average about 3) compared to French civil law countries (on average about 6.3).

Table 3 also reports a larger set of measures of bank debt ownership concentration, and they confirm the patterns shown above for number of creditors, C_5 , and $NtC_{30\%}$ also for other measures. For example, for firms in English common law countries compared to firms in French civil law countries we find a higher HHI (25.05% vs 21.49%) and lower numbers required to cross the 10% (1.18 vs 1.19), 20% (1.76 vs 1.81), and 30% (2.43 vs 2.55) ownership thresholds. That is, all measures point to the fact that the ownership concentration of bank debt is on average *higher* for English common law countries, consistent with prior literature.

Our main innovation is to examine together debt ownership not only of bank loans and credit lines but also of bonds and arm's length debt in general. We show that by doing so the picture changes diametrically relative to prior literature, reversing the conclusions reached so far. Table 4 shows that the patterns on the ownership concentration of arm's length debt are opposite to the patterns for bank debt. That is, the number of overall bondholders and the minimum number of bondholders required to pass a cumulative ownership of 10%, 20%, or 30%, respectively, are all much higher for English common law countries. The economic magnitude is stark. For example, the average number of bondholders across firms in English common law countries equals 164 and compares with the average of about 54 bondholders across firms in French civil law countries—and even lower in German and Scandinavian civil law countries. Consistent with this clear empirical pattern, the average HHI for firms in English common law countries is well below the average HHI for firms in French civil law countries (5.05% vs 8.16%). Therefore, we find that bond debt ownership in firms in English common law countries is much *more* dispersed than in firms in civil law countries.

This finding is the exact opposite of what we just documented for bank loan ownership concentration above. Notably, the English common law statistics are quite stable throughout a number of countries, including Canada, Bermuda, Ireland, Jersey, United Kingdom, and the United States. In these countries, on average, a) bond debt makes up for an economically

meaningful fraction of overall debt (26% for Ireland to 42% for the United States), and b) we observe ownership information for a significant fraction of total bond debt (42% for Jersey to 61% for the United States). At the same time, the results are not driven by US firms, as we obtain very similar results if we exclude US firms from the sample. These exercises alleviate concerns that our results may be driven by a single country or few outliers.

Next, we show how bank and arm's length debt aggregate to total debt and, thus, we compute total debt ownership concentration. Table 5 reports statistics by individual countries and by legal origins. On average, across all our sample countries, we observe debt ownership for about 73% of total debt (this percentage is lowest for Colombia with 52.60% and highest for New Zealand with 87.47%). This observation suggests that we observe a representative portion of total debt ownership of our sample firms. Overall, total debt ownership in firms in English common law countries is on average *more* dispersed than in firms in other legal origins. This conclusion is consistently backed up by all of our four measures of ownership concentration when comparing average values across English common law and French civil law countries. In English common law countries the 1) the number of all creditors is higher (173 vs 66), 2) the minimum number of creditors to cross the ownership thresholds of 10%, 20%, and 30% are higher (1.51 vs 1.28, 2.75 vs 2.04, and 4.42 vs 3.02), 3) the HHI is lower (17.79% vs 18.93%), and 4) the cumulative ownership of the 1, 3, 5, and 10 largest creditors are lower (22.79 vs 23.84, 36.16 vs 40.11, 52.08 vs 60.04, and 69.66 vs 80.85).¹¹

To sum up, our data confirms the results about ownership dispersion of bank debt from the literature. Importantly, however, we find that the patterns of ownership dispersion of total debt are diametrically opposite. When considering arm's length debt and thus total debt, our empirical evidence points to the striking fact that ownership dispersion of total debt and arm's length debt is much more dispersed in firms in English common law countries than in firms in other legal origins, that is, exactly the opposite of what was documented regarding bank debt. Intuitively, total debt ownership dispersion is driven by the dispersion

¹¹The results are even stronger when comparing firms in English common law countries with firms in German or Scandinavian civil law countries.

of arm’s length debt because of the quantitative importance of arm’s length debt in the debt structure of our sample firms, and particularly of firms in English common law countries. Therefore, our comprehensive data allows us to paint a much more nuanced picture of debt ownership dispersion compared to existing studies which exclusively relied on bank debt to make inference about debt ownership dispersion, including [Ongena and Smith \(2000\)](#), [Esty and Megginson \(2003\)](#), [Qian and Strahan \(2007\)](#), and [Bae and Goyal \(2009\)](#).

3.3 Debt Maturity

Figure 7 describes debt maturity, separately for bank debt (Panel A), arms length debt (Panel B), and total debt (Panel C), comparing firms in French civil law countries with firms in English common law countries. Panel A shows that bank debt maturity is slightly shorter in firms in French civil law countries relative to firms in English common law countries, although the magnitude of the difference is small. Panel B shows that arm’s length debt maturity is much shorter in firms in French civil law countries relative to firms in English common law countries, and Panel C confirms this pattern for total debt maturity.

Table 6 reports detailed statistics for debt maturity both for individual countries and for legal origins. The average maturity across all sample countries is 4.88 years for total debt, 7.78 years for arm’s length debt, and 3.05 years for bank debt. Importantly, there is cross-sectional variation in debt maturity across countries and, in particular, across legal origins. For example, total debt maturity is much longer for firms in English common law countries (5.39 years) compared to firms in French civil law countries (3.78 years). Consistent with this, the maturity of arm’s length debt is also longer for firms in English common law countries compared to firms in French civil law countries (8.19 years vs 5.67 years). Interestingly, the pattern is reversed for bank debt. That is, firms in English common law countries have a shorter bank debt maturity compared to French civil law countries (2.99 years vs 3.15 years), although the magnitude of such difference is small and statistically insignificant. In the context of our findings from Section 3.2, we conclude debt ownership concentration is negatively correlated with debt maturity. Our data indicates this relationship is robust no

matter whether we focus on bank, arm’s length, or total debt.

3.4 Debt Collateral Security

Figure 8 reports the percentage of bank debt (Panel A), arm’s length debt (Panel B), and total debt (Panel C) that is secured by some collateral. Figure 8 shows a larger fraction of debt is secured by collateral for firms in English common law countries relative to French civil law countries, and this holds for both bank debt and arm’s length debt.

Table 7 reports the fraction of secured debt in individual countries and legal origins. Overall, about one third (32.31%) of total debt is secured by some form of collateral. The fraction of secured debt is much higher for firms in English common law and Scandinavian countries relative to French civil law countries (35.16% and 36.44 vs 25.05%). Perhaps not surprisingly, secured debt is mostly composed of secured bank debt as opposed to secured arm’s length debt. This is true across all our sample countries. More interestingly, the composition of secured debt into bank and bond debt exhibits interesting cross-sectional variation. In fact, the share of bond debt is significantly higher in firms in English common law countries compared to firms in French civil law countries (11.09% vs 6.12%). The flip side of this statement implies that the share of bank debt is lower in firms in English common law countries relative to French civil law countries (88.91% vs 93.88%).

3.5 Debt Currency

Figure 9 displays the distribution of debt currency, comparing firms in French civil law countries with firms in English common law countries. Figure 9 shows firms in French civil law countries are much less likely to borrow in local currency and much more likely to borrow in USD-denominated debt as a foreign currency than firms in English common law countries.

Table 8 reports detailed statistics for firms’ debt currency choices in individual countries and all legal origins. Overall, we find that firms operating in common law countries are more likely to issue debt in their local currency compared to firms in civil law countries. That is, while 89.92% of firm’s debt in English common law countries is issued in local currency,

this is the case for only 58.60% of firm’s debt in French civil law countries. On the other hand, firms in French civil law countries borrow 37.83% in USD denominated arm’s length debt and 34.07% in USD denominated bank debt. These findings are consistent with the idea in [Mellor et al. \(2024\)](#) and [Thiel \(2000\)](#) that in international transactions contracting parties may attempt to mitigate an unfavorable institutional environment by borrowing in US dollars, which often comes with the protection of New York law and US courts.

4 Results

We examine the empirical patterns documented from Section 3 in a multivariate context at the firm level. That is, we run the following regression models

$$y_{i,j,c,t} = \beta_1 \times \mathbb{1}\text{French}_c + \beta_2 \times \mathbb{1}\text{German}_c + \beta_3 \times \mathbb{1}\text{Scandinavian}_c + \delta' \mathbf{X}_{i,j,c,t} + \lambda_j + \eta_t + \varepsilon_{i,j,c,t}, \quad (4)$$

where i indexes firms, j industries, c countries, and t year-quarter, the independent variables y are measures of ownership concentration, debt maturity, secured debt, or debt currency. Further, $\mathbb{1}\text{French}$, $\mathbb{1}\text{German}$, and $\mathbb{1}\text{Scandinavian}$ are dummies which equal one if a firm belongs to the French, German, or Scandinavian legal origin, respectively. English common law legal origin is the omitted category. Next, $\mathbf{X}$ denotes a vector of control variables including firms’ assets, age, and GDP per capita.¹² Finally, λ_j and η_t denote industry and year-quarter fixed effects.

To explore how our results relate to country-specific measures of legal protection and, thus, exploit more granular variation, we rely on the anti-self-dealing index from [Djankov et al. \(2008b\)](#), *ASD*. The anti-self-dealing index measures the legal protection against expropriation by corporate insiders. The index is available for most of our sample countries and focuses on private enforcement mechanisms, such as disclosure, approval, and litigation, that govern a specific self-dealing transaction. The index exhibits substantial cross-sectional variation across our sample countries as can be seen from Appendix Table A2. On average,

¹²These control variables are available for the full sample. In robustness tests, we also control for credit ratings, which we are able to collect for about one-third of our sample firms.

the index is higher for common law countries compared to civil law countries. That is, we also run the following regression models:

$$y_{i,j,c,r,t} = \beta \times ASD_c + \delta' \mathbf{X}_{i,j,c,t} + \lambda_j + \eta_t + \nu_r + \varepsilon_{i,j,c,t}, \quad (5)$$

and

$$y_{i,j,c,r,t} = \beta \times ASD_c \times \text{size group}_{i,j,c,t} + \delta' \mathbf{X}_{i,j,c,t} + \lambda_j + \eta_t + \nu_r + \varepsilon_{i,j,c,t}, \quad (6)$$

where *size group* denotes four groups formed based on the quartiles of firm size within a country, with firm size measured as total assets in US Dollars. The size quartiles serve two important purposes: First, they categorize firms into size groups within the unrestricted sample, rather than in our final sample¹³. This ensures that even if the final sample is skewed towards larger firms due to data availability, we can still mitigate concerns about a potential selection bias by studying different segments of the true spectrum of firms in the economy. Second, the interaction between legal protection and firm size allows us to explore the heterogeneous effects of investor protection across different size groups. Finally, ν_r denotes regional (continental) fixed effects¹⁴.

4.1 Debt Ownership Concentration

Table 9 reports the regression results when we use the number of creditors, bondholders, banks, and lead arrangers as independent variables. Even when controlling for size, age, GDP per capita and fixed effects, we find that total debt ownership in civil law countries is more concentrated compared to English common law countries. That is, the point estimates for all three dummy variables are negative and, for French and Scandinavian legal origins, highly statistically significant. The same findings are true when we exclusively focus on

¹³The first time in our data preparation when we have firm size is after we merge the data in Capital IQ with our balance sheet information in Compustat, Worldscope, and Amadeus. This is the point where we form the size quartiles.

¹⁴We follow the World Bank's geographic classification based on the firms country of incorporation. There are six regions: Asia and Pacific; Western Europe & Northern Europe; Eastern Europe & Central Asia; North and Latin America and the Caribbean; Middle East & North Africa; and Sub-Saharan Africa. Following Aminadav and Papaioannou (2020), we aggregate North America with Latin America and the Caribbean.

arm’s length debt. That is, the number of total creditors and arm’s length creditors are significantly lower for civil law countries. In contrast, in the case of bank debt we find that both the number of banks as well as the number of lead arrangers are higher in civil law countries. That is, bank debt ownership is less concentrated in civil law countries. Overall, our regression results are entirely consistent with the unconditional sample averages presented in Section 3.2. Therefore, our results are unlikely driven by individual outliers in our sample.

Importantly, our results also hold when we allow for more granular variation in the variable that relates to legal system of our sample countries. In fact, the interpretation of the results is qualitatively the same when we employ the anti-self-dealing index from Djankov et al. (2008b) and run the regression models from equations (5) and (6). That is, the regression coefficient of the anti-self-dealing index is positive for the number of total debt and arm’s length debt creditors but negative for the number of banks and lead arrangers. The lack of statistical significance in these coefficients hints to the possibility that the relationship between legal environment and debt ownership concentration might not be equally strong for all firms within a certain country. For example, one would expect country-specific legal protection for creditors to matter more for smaller, locally active firms and less so for large, international firms which have access to international credit markets. Columns (9) and (10) of Table 9 confirm this conjecture in the data. That is, we find a highly statistically significant and positive relationship between the anti-self-dealing index and the number of total debt or arm’s length creditors for all firms except the very large firms, i.e., firms in the highest quartile of the country-specific size distribution in the unrestricted sample. In terms of economic significance, a one standard deviation increase in the anti-self-dealing index corresponds to an increase of 105.3, 45.8, 10.1 in the number of creditors, respectively for small, medium, and large firms. This effect is economically large given the unconditional sample average of about 136 creditors. The effect on very large firms is negligible. Moreover, we see the monotonically decreasing point estimates of the *ASD*-coefficient from the smallest to largest size group as further confirmation of our prior. Notably, the pattern changes in

columns (11) and (12) of Table 9 for the number of banks and lead arrangers.

Robustness. We examine the robustness of our results in Table 9 by examining whether they are stable across different cross-sectional snapshots, namely, 2006Q1 (before the financial crisis), 2012Q1 (after the financial crisis), and 2019Q1 (before the pandemic), whether they are stable if we exclude US firms, and whether they are similar when examining different measures of creditor dispersion as dependent variable. Table A3 shows that the results on the variation of number of creditors by legal origin are stable in the three different cross sections examined and when excluding US firms. Table A4 shows that the results on the variation of number of creditors with investor protection and firm size are stable in the three different cross sections examined and when excluding US firms. Table A5 shows that all the results of Table 9 are very similar when we examine an alternative measure of debt ownership concentration, namely the number of creditors required to cross an ownership threshold of 30%. All results remain qualitatively similar when we use the number of creditors required to cross an ownership threshold of 10% or 20%.

Table 10 shows that results on debt ownership dispersion remain stable, and if anything become stronger, when controlling for access to public markets, as measured by the presence of a credit rating, and for credit quality, as measured by the credit score. Moreover, we find that, conditional on being rated, debt ownership dispersion increases with credit quality – i.e., higher rated firms exhibit more dispersed debt ownership. Finally, we find that the effect of investor protection on debt ownership dispersion is stronger for firms with better credit ratings. These are important results, because firms (and countries) may differ systematically for access to different sources of capital, including public debt markets, and we find that our results are robust to these controls.

Overall, debt ownership dispersion is positively correlated with legal protection. Further, this positive relationship is strongest for small firms and gets gradually weaker when increasing firm size. A one standard deviation increase in the anti-self-dealing index corresponds to an increase of about 0.3 to 0.9 in the number of creditors required to cross 30% of owner-

ship for small and medium size firms. These are economically significant increases given the unconditional average of number of creditors required to cross 30% ownership for small and medium size firms are 1.3 and 1.6 respectively. For further robustness, Appendix Tables [A6](#) and [A7](#) tabulate regression results for two other measures of debt ownership concentration, namely $C10$ and HHI, and report consistent findings.

4.2 Discussion of Debt Ownership Concentration Results

Our results accord well with the theoretical model of [Gennaioli and Rossi \(2013\)](#), who predict that the “dispersion of noncontrolling creditors should be observed at relatively high levels of investor protection” (p. 604). This prediction is the opposite of the traditional idea that debt dispersion makes lenders tough following a strategic default ([Bolton and Scharfstein \(1996\)](#)), implying that firms should borrow from more lenders when enforcement cost is higher ([Diamond \(2004\)](#)). It is useful to discuss briefly here the sources of these different theoretical predictions (the reader can refer to the original contributions for more details).

[Gennaioli and Rossi \(2013\)](#) study theoretically the optimal debt structure to resolve financial distress, and outline under which conditions such debt structure yields an efficient resolution of financial distress. Their model is in the tradition of [Aghion and Bolton \(1992\)](#) and [Hart and Moore \(1998\)](#), in that debt contracts can allocate control rights over the reorganization versus liquidation decision, and cash flows are less pledgeable than liquidation proceeds. Unlike [Aghion and Bolton \(1992\)](#) and [Hart and Moore \(1998\)](#), [Gennaioli and Rossi \(2013\)](#) allow for multiple creditors.

[Gennaioli and Rossi \(2013\)](#) find the optimal debt structure consists of two classes of creditors. One class is concentrated on a large creditor (a ‘bank’) who has exclusive control over the liquidation vs reorganization decision. This creditor is given both physical collateral and an equity stake in the reorganized firm. Crucially, this equity claim is under-collateralized: it pledges a share of physical assets that is smaller than the creditor’s equity stake. The other debt class is dispersed among atomistic creditors without control rights. These creditors are entitled to obtain some liquidation proceeds but are ‘wiped out’ in reorganization.

The logic of this debt structure is insightful. Giving the large creditor equity in the reorganized firm removes the creditor’s liquidation bias. In addition, under-collateralization makes him fully internalize the upside of reorganization. Under-collateralization, the novel feature of [Gennaioli and Rossi \(2013\)](#), works best in the presence of a second debt class: distributing the remaining liquidation proceeds to a debt class without control rights, as opposed to ‘leaving them on the table,’ maximizes total repayment to all creditors. The debt class of non-controlling creditors should then be dispersed to prevent collusion, which would reintroduce a liquidation bias. The presence of two debt classes differing in their control rights rationalizes the coexistence of ‘bank’ and ‘arm’s-length’ debt in a firm’s debt structure. As a result, [Gennaioli and Rossi \(2013\)](#) predict that debt ownership dispersion should increase with investor protection, and in particular “The notion of investor protection relevant for this prediction is broader than that of creditor rights and includes shareholder protection against managerial self-dealing and tunneling” ([Gennaioli and Rossi \(2013\)](#), p. 624).

This notion differs from the traditional idea that debt dispersion makes lenders tough following a strategic default, e.g., [Bolton and Scharfstein \(1996\)](#), and [Diamond \(2004\)](#), and as a result one should expect firms to borrow from more creditors when the institutional environment is weaker. The key driver of the different predictions is that, unlike [Gennaioli and Rossi \(2013\)](#), neither [Bolton and Scharfstein \(1996\)](#) nor [Diamond \(2004\)](#) study the allocation of control rights over the liquidation decision.

4.3 Debt Security

Next, we examine how creditor protection correlates with the firms’ choice to issue debt secured by collateral rather than unsecured debt. To do so, we rely on the creditor rights index from [Djankov et al. \(2007\)](#) rather than the anti-self-dealing index used before in regression specifications otherwise similar to equations (5) and (6). In fact, the creditor rights index measures directly the rights of secured creditors in bankruptcy, and it is therefore more appropriate to examine cross-country variation in secured debt.

Table 11 reports regression results when we use a firm’s fraction of secured debt as inde-

pendent variable. Two main findings emerge. First, firms in civil law countries are significantly less likely to issue secured debt relative to common law country firms. This finding is consistently true for total debt, arm’s length debt, and bank debt. Perhaps not surprisingly, bond debt rarely happens to be secured by collateral, as shown in Table 7. Consistent with these findings, we estimate a highly statistically significant positive association between the creditor rights index and the tendency to issue secured debt.

Second, our results show such strong and positive association is entirely due to the large and very large firms in our sample. In fact, the association between creditor rights and issuance of secured debt is even negative for firms in the smallest size group. That is, while creditor rights and secured debt seem to be substitutes for small firms, they appear to be complements for large firms. Our estimates are economically meaningful. For example, for total debt, a one standard deviation increase in the creditor rights index corresponds to a 5.50 percentage point increase in the fraction of secured debt. At the unconditional sample average, this implies an increase of about 12.5% in the fraction of secured debt.

4.4 Debt Maturity and Currency

Table 12 reports the regression results for debt maturity. Overall, the reported results suggest that better legal protection results in longer maturity for arm’s length debt. That is, firms in civil law countries tend to issue debt with shorter maturity compared to firms in common law countries. As usual, bank debt behaves differently to bond debt. Therefore, bank debt maturity is longer in countries that have lower legal protection as measured by the anti-self-dealing index from Djankov et al. (2008b). In terms of economic significance, a one standard deviation increase in the anti-self-dealing index corresponds to an increase of 1.10, 0.60, 0.40, and 0.32 years in the maturity of arm’s length debt, respectively for small, medium, large, and very large firms. Yet, these effects are partly offset by the simultaneous decrease in the maturity of bank debt, such that the maturity of total debt is only significantly positively correlated with legal protection for small-to-medium-size firms.

In Table 13 we study the relationship between legal creditor protection and firms’ debt

currency choice. Overall, the regression results show that firms in civil law countries issue more bank debt denominated in US dollars, and less debt denominated in local currency, relative to firms in common law countries. To shed some light on the channel behind these results, we ask whether USD-denominated bank debt comes from domestic banks, US foreign banks, or non-US banks. Domestic banks might lend in USD to hedge their currency risk exposure, as in [Keller \(2024\)](#), whereas US and non-US foreign banks might seek the protection of US courts or English common law (see also [Ivashina et al. \(2015\)](#)). We find USD-denominated bank debt comes predominantly from US and non-US foreign banks, consistent with the idea that international borrowers and lenders enter into USD-denominated debt contracts to access the protection of US courts or English common law.

Overall, our results indicate that two ways by which firms try to mitigate a weak legal protection is by issuing debt with a short time to maturity and denominated in US Dollars. These results are in line with the prediction by [Diamond \(2004\)](#) that debt maturity should negatively correlate with enforcement costs, and with the general idea that USD denominated debt may come with the protection of New York law and of US courts, e.g., see [Hébert and Schreger \(2017\)](#) and [Mellor et al. \(2024\)](#). Therefore, our results point to a trade-off between debt ownership concentration on the one hand, and debt maturity and US dollar denomination of debt contracts on the other hand.

4.5 Further Extensions and Robustness

In this Section we examine several further extensions and robustness exercises.

4.5.1 Extensions

We begin by examining how leverage and debt composition vary around the world. Table [A8](#) reports that book leverage is very similar across legal origins, but firms in French, German, and Scandinavian civil law countries borrow more from banks and less from arms length investors relative to firms in English common law countries. Similarly, firms in countries with worse investor protection borrow more from banks than firms in better investor protection

countries. These patterns hold across all size quartiles.

Next, we examine how debt structure varies with other measures of institutional quality beyond anti self-dealing provisions and creditor rights. Table A9 shows that court formalism is also systematically related to debt structure in the predicted direction. The longer it takes for creditors to collect cheques, the fewer the number of creditors, the shorter the debt maturity, and the less likely the firm is to borrow in the local currency. In a similar vein, the longer it takes to evict tenants, the smaller the fraction of debt that is secured by collateral; and the longer it takes to enforce contracts, the shorter the maturity.

Entry regulation and labor market regulation are also systematic correlates of debt structure. Table A10 shows the longer it takes to start a business and the more cumbersome the regulation, the smaller the fraction of secured debt. Table A11 shows the larger the power of unions, the smaller the fraction of secured debt. Other aspects of debt structure also vary in the predicted direction, although the coefficients are not statistically significant.

Table A12 shows shareholder dispersion and creditor dispersion go hand in hand. Using average shareholder concentration statistics from Aminadav and Papaioannou (2020), Table A12 reports the cumulative ownership by the one, three, and five largest shareholders correlate negatively with our measures of debt ownership dispersion. These findings are consistent with English common law countries promoting *both* better creditor and better shareholder protection. They underscore the overarching idea of the law and finance literature, outlined in La Porta et al. (1997, 1998), that English common law provides a better environment for small, diversified investors, be they minority shareholders or junior bondholders.

4.5.2 Robustness

We have shown in Tables A3, A4, and A5 that our results on the variation of debt ownership dispersion by legal origin and by investor protection are stable in the three different cross sections, when excluding US firms, and when examining alternative measures of debt ownership concentration. In this section we present similar robustness exercises for our other results on debt collateral security, debt maturity, and debt currency.

Section [A3](#) reports how our results look like when examining three separate cross-sectional snapshots, 2006Q1, 2012Q1, and 2019Q1, namely the number of creditors (Tables [A13](#), [A14](#), and [A15](#)), the number to cross the 30% threshold (Tables [A16](#), [A17](#), and [A18](#)), the fraction of secured debt ([A19](#), [A20](#), and [A21](#)), debt maturity ([A22](#), [A23](#), and [A24](#)), and debt currency (Tables [A25](#), [A26](#), and [A27](#)), respectively. Also or results on these variables are generally quite stable across these exercises.

Section [A4](#) reports how all our results look like when excluding US firms. Appendix Tables [A28](#) to [A31](#) report detailed results on such dependent variables as the number of creditors (Table [A28](#)), the number to cross 30% threshold (Table [A29](#)), secured debt ([A30](#)), and debt maturity ([A31](#)), respectively. None of our finding are affected by excluding US firms.

Finally, Section [A5](#) reports how our results on secured debt, debt maturity, and debt currency look like when examining the unrestricted sample, that is, the sample obtained in our data preparation process just before imposing to observe information on debt ownership, and when controlling for credit ratings. Appendix Tables [A32](#), [A33](#), and [A34](#) show that our results on secured debt, debt maturity, and debt currency are very similar, both qualitatively and quantitatively, to the ones observed in our final sample as reported in the main body of the paper. These results mitigate concerns that sample selection issues might contaminate our evidence. Appendix Tables [A35](#), [A36](#), and [A37](#) show that, when controlling for credit ratings, our results on secured debt, debt maturity, and debt currency are qualitatively very similar, and, if anything, become stronger. These results confirm that our results reflect systematic differences in institutions as opposed to firm-level differences in credit quality.

5 Conclusion

Combining different datasets for the first time and conducting manual checks for thousands of firms, we construct a new dataset on corporate debt structures around the world. Our database pieces together the debt structure of 10,136 public and private firms from 52 countries between 2002 and 2021, comprising 124,101 corporate bond issues held by 63,323 bond-

holders and 85,817 bank loans and credit lines extended by 10,154 banks.

There are three main parts of our analysis. First, we provide an anatomy of corporate debt structure around the world. Corporate leverage is remarkably similar across the world at about one third of the firm’s assets. Bank loans are the most common form of debt financing, followed by arm’s length debt and credit lines, but there is a lot of heterogeneity.

Second, we examine the association between debt structure and legal origin. Total debt ownership is most concentrated in civil law countries, and most dispersed in common law countries. This is a novel result in the literature. There is considerable heterogeneity: In common law countries the debt structure features dispersed debt ownership, with dispersed arm’s length borrowing coexisting with concentrated and secured bank borrowing. In civil law countries firms mitigate the unfavorable institutional environment by borrowing from more banks (but far fewer arm’s length creditors), at shorter maturity, and in USD-denominated (foreign) debt. These patterns are strongest for small-to-medium size firms, whereas the largest firms are able to achieve dispersed debt ownership by international investors (and the protection of US courts) almost irrespective of their country of incorporation.

Third, we associate corporate debt structure with institutional characteristics related to legal origin. We find that provisions protecting small outside investors from self-dealing activities of managers or dominant insiders correlate significantly with debt structure. Stronger protection against self-dealing correlates with higher total debt dispersion, and with higher dispersion in arm’s length debt ownership. This pattern holds for all but the largest firms. By contrast, for all firms, and particularly for the larger ones, better anti-self-dealing provisions correlate with lower bank ownership dispersion. Stronger protection against self-dealing also correlates with longer maturity of arm’s length debt. The effect is largest for the smallest firms, declines monotonically with firm size, and remains strongly significant for all but the largest firms. Finally, the stronger the creditor rights, the larger the likelihood that total debt is secured by collateral. This result is entirely driven by bank debt.

These results support the key insights of the law and finance literature. Consistent with

La Porta et al. (1998) and La Porta et al. (2008), we find that debt ownership dispersion is largest in countries with better investor protection. In particular, our results are consistent with Gennaioli and Rossi (2013), who rationalize the coexistence of concentrated bank debt and dispersed arm's length debt in the firm's debt structure, and predict that dispersion of total debt and arm's length debt should increase with investor protection. Our results on debt maturity are consistent with the prediction of Diamond (2004) that firms in poor investor protection countries should mitigate the unfavorable institutional environment by borrowing more short term. Overall, our results highlight the substitutability of debt ownership concentration with debt maturity and currency. In better institutional environments, firms are more likely to borrow from many dispersed creditors at longer maturities and in local currencies, whereas in worse institutional environments firms are more likely to borrow from fewer creditors at shorter maturities and in USD denominated debt contracts.

We view this paper as a first step in reassessing fundamental questions in corporate finance, related to the determinants and consequences of corporate debt structure. Our analysis abstracts from the exact role of banks and bondholders on how to resolve financial distress, on how to renegotiate or restructure debt, on whether to liquidate corporate assets and how to allocate the proceeds, in or outside of formal bankruptcy proceedings. Banks and bondholders might be relatively passive or play a more active role, on their own or in coalition with others. Future work should examine in detail the mechanics of resolving financial distress when the corporate debt structure comprises many heterogeneous creditors in a number of separate debt classes.

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Figures

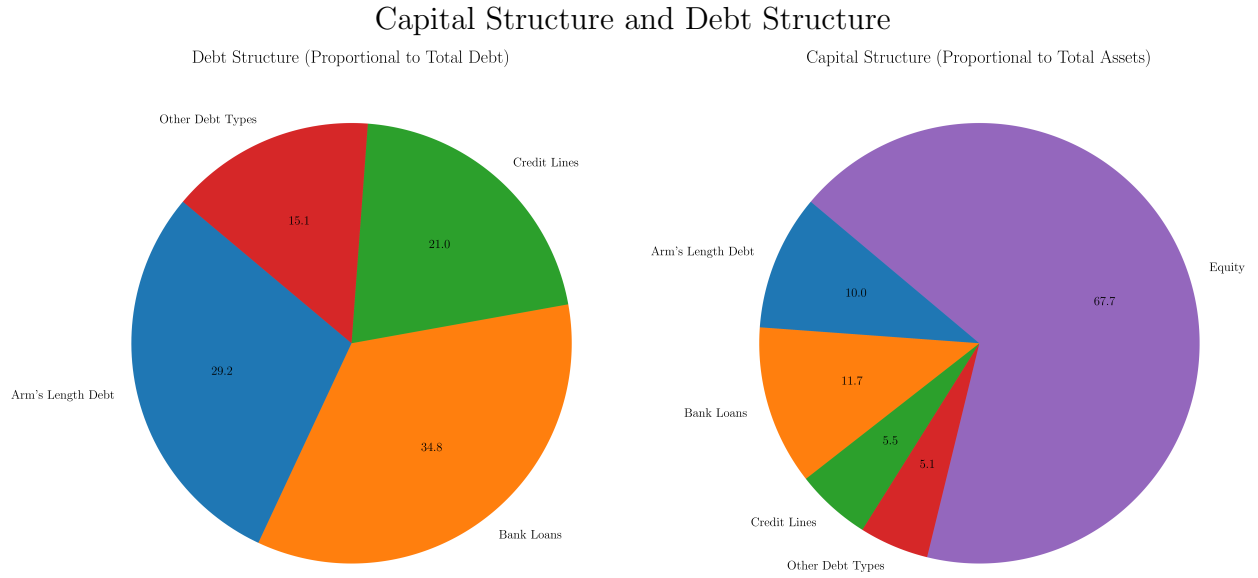


Figure 1: This figure presents the global average capital structure and debt composition, including arm's length debt (bonds, notes, and commercial papers), bank loans, credit lines, and other forms of debt. Debt amounts are based on identified securities in our sample, and equity corresponds to book equity. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are computed across all years in the sample, excluding missing observations from the calculations.

Evolution of Book Leverage and Debt Composition Over Years

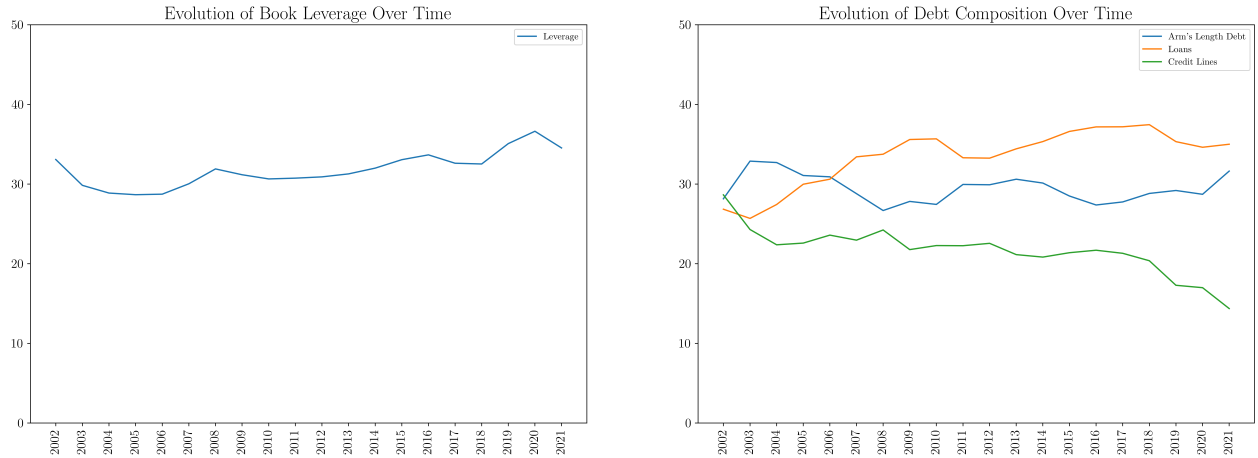


Figure 2: This figure illustrates the evolution of book leverage and the composition of corporate debt globally over the sample period. Debt types include arm's length debt (bonds, notes, and commercial papers), bank loans, credit lines based on debt instruments identified in our sample. Book leverage is defined as total debt divided by total assets. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are computed across all countries in the sample, with missing data excluded from the calculations.

World Map with Legal Origins and the Percentage of Bank Debt and Arm's Length Debt

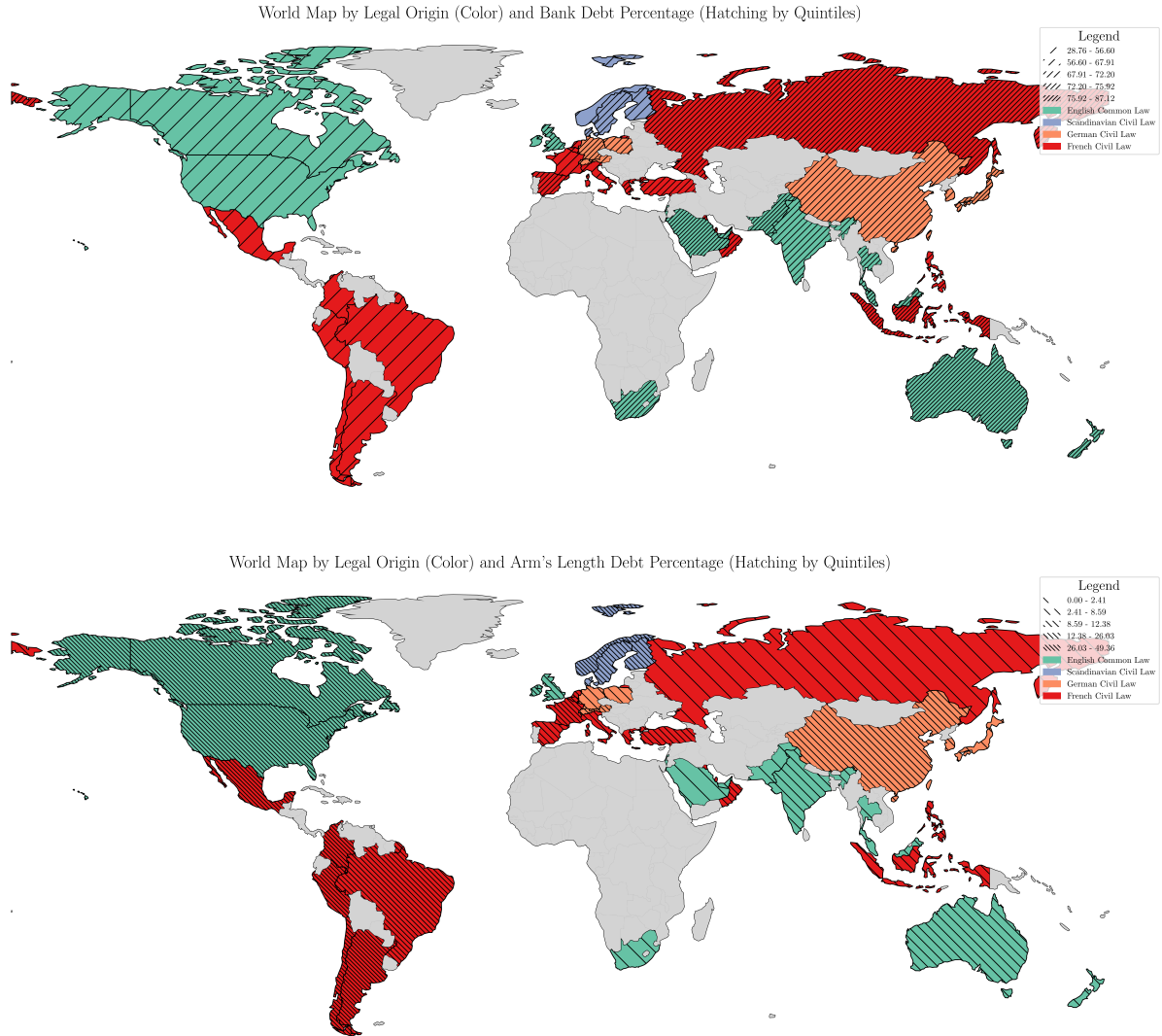


Figure 3: This figure presents a world map illustrating countries' legal origins, color-coded by legal family, and the composition of corporate debt across countries in our sample. The intensity of hatching reflects quintiles of debt types, measured as a percentage of total debt. Debt types include outstanding amounts of arm's length debt (bonds, notes, and commercial papers) and bank debt (based on loans and credit lines) based on debt instruments identified in our sample. Detailed variable definitions and sources are provided in Appendix Table A1. Country-level averages are computed across all available years in the sample, excluding missing observations.

Distribution of Number of Creditors in French Civil Law vs. Common Law

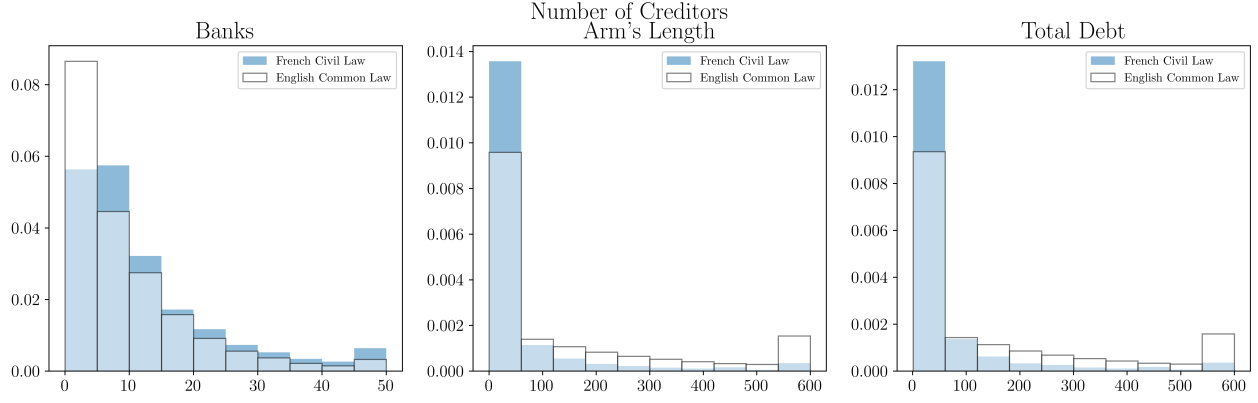


Figure 4: This figure displays the distribution of number of creditors, separately for bank debt, arm's length debt, and total debt, comparing French civil law countries and English common law countries. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages. The last bin includes all observations exceeding the upper bin limit.

Distribution of Smallest Bond-issuing Firms in French Civil Law vs. Common Law

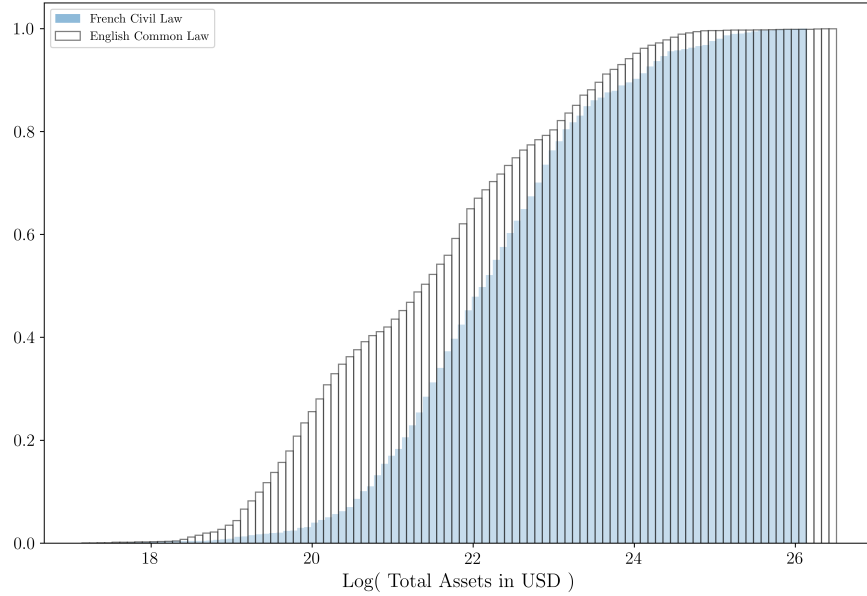


Figure 5: This figure displays the CDF distribution of firm size (measured as log(assets in USD)) among the ten smallest firms in each country in each year-quarter that have at least one outstanding arm's length debt instrument.

Evolution of Book Leverage and Debt Composition Over Firms' Life Cycle

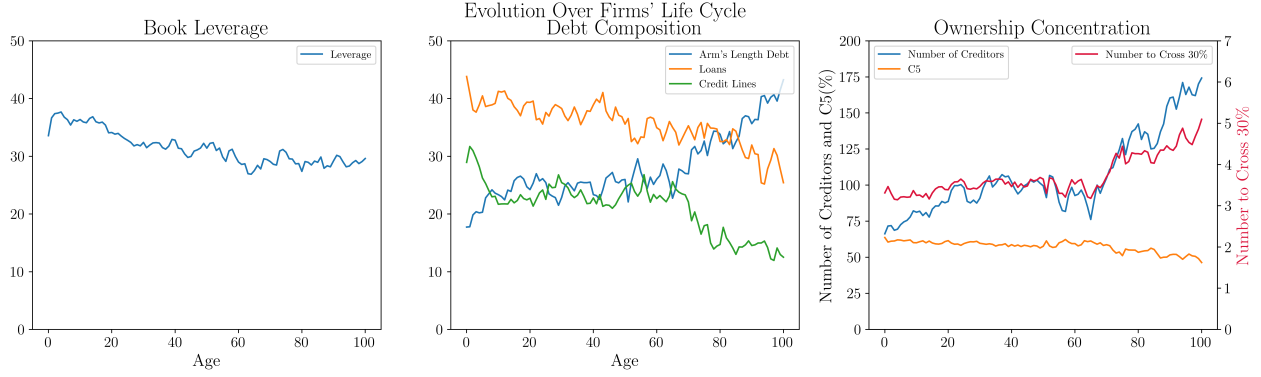


Figure 6: This figure displays the global evolution of book leverage, debt composition, and debt ownership concentration over firms' life cycle. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages.

Distribution of Maturity in French Civil Law vs. Common Law

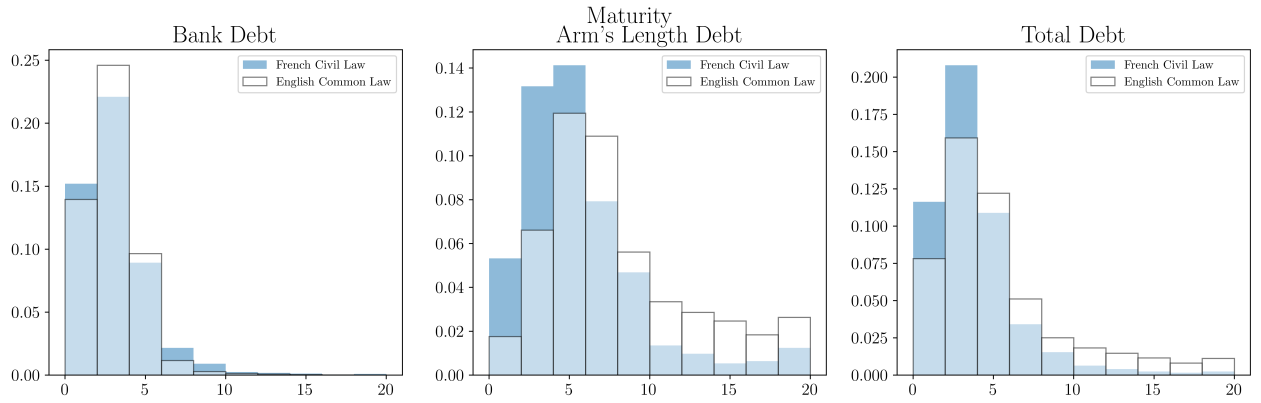


Figure 7: This figure displays the distribution of debt maturity, separately for bank debt, arm's length debt, and total debt, comparing French civil law countries and English common law countries. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages. The last bin includes all observations exceeding the upper bin limit.

Distribution of Percentage of Secured Debt in French Civil Law vs. Common Law

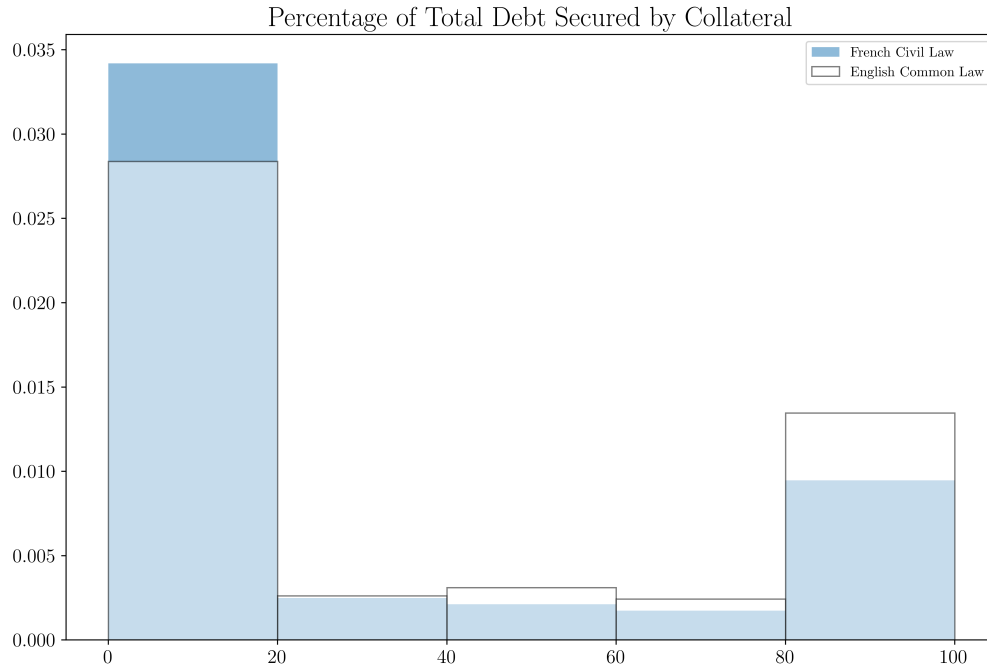


Figure 8: This figure displays the distribution of percentage of total debt that is secured by some collateral, comparing French civil law countries and English common law countries. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages.

Distribution of Debt Currency in French Civil Law vs. Common Law

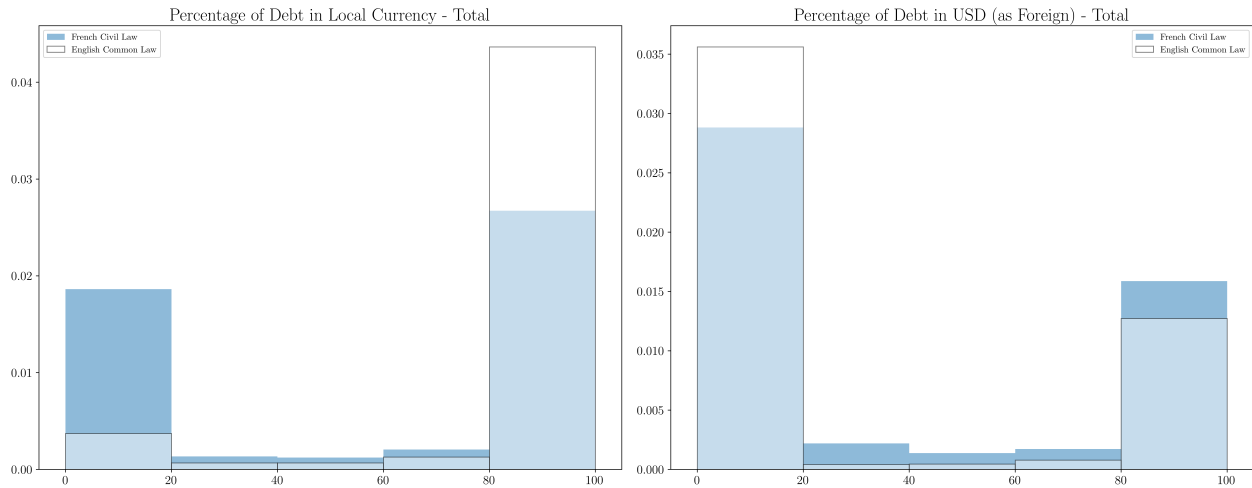


Figure 9: This figure displays the distribution of debt currency, comparing French civil law countries and English common Law countries. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages.

Tables

Table 1: Sample Construction

Sample	Legal Origin	Num Countries	Num Firms	Num Firms %	Num Public Firms	Zero Leverage	Num Leverage Firms	Num Firm Quarters	Leverage	Arm's Length Debt %	Loans %	Lines %	Other Debt Types %
CIQ	All	184	135807	100.0	57940		751	3563609		21.5	46.6	13.0	19.1
CIQ	English Common Law	50	76070	56.0	32650		628	1809760		26.6	35.6	15.5	22.4
CIQ	Scandinavian Civil Law	5	3799	2.8	1623		11	108726		25.2	44.8	8.8	21.3
CIQ	German Civil Law	24	37994	28.0	17121		82	1101073		13.1	61.8	10.1	15.1
CIQ	French Civil Law	72	17740	13.1	6505		29	540220		22.3	49.1	12.1	16.6
CIQ	Other	33	204	0.2	41		1	3830		15.0	61.2	8.3	15.4
CIQ & BS	All	145	85370	100.0	51991		252	2422026	0.25	17.1	50.5	15.2	17.6
CIQ & BS	English Common Law	45	48013	56.2	27566		191	1242527	0.26	22.8	37.9	18.3	21.2
CIQ & BS	Scandinavian Civil Law	5	2718	3.2	1595		6	79273	0.25	16.8	52.8	10.2	20.9
CIQ & BS	German Civil Law	23	23123	27.1	16531		46	726555	0.23	10.3	65.2	11.4	13.5
CIQ & BS	French Civil Law	60	11476	13.4	6270		9	359822	0.27	14.8	56.3	15.1	14.8
CIQ & BS	Other	12	66	0.1	33		0	13849	0.18	15.7	66.6	5.4	12.6
CIQ & BS & Ownerships	All	108	18104	100.0	10379		0	386556	0.35	37.9	38.5	14.0	9.7
CIQ & BS & Ownerships	English Common Law	39	10363	57.2	4957		0	216413	0.35	45.2	27.2	18.2	9.5
CIQ & BS & Ownerships	Scandinavian Civil Law	5	647	3.6	396		0	14792	0.36	44.4	34.0	8.0	13.7
CIQ & BS & Ownerships	German Civil Law	19	4697	25.9	3582		0	102758	0.33	22.1	61.3	8.5	8.1
CIQ & BS & Ownerships	French Civil Law	44	2394	13.2	1443		0	52541	0.36	35.7	43.0	8.6	12.8
CIQ & BS & Ownerships	Other	1	3	0.0	1		0	52	0.42	8.5	76.5	10.6	4.4
Final Sample	All	52	10136	100.0	5522		0	127179	0.32	33.9	39.1	22.1	5.0
Final Sample	English Common Law	21	6820	67.3	3217		0	94684	0.33	41.1	28.9	24.7	5.3
Final Sample	Scandinavian Civil Law	4	319	3.1	208		0	3020	0.35	26.2	49.0	18.2	7.0
Final Sample	German Civil Law	8	1920	18.9	1476		0	20324	0.28	7.7	74.2	14.9	3.3
Final Sample	French Civil Law	19	1077	10.6	621		0	9151	0.35	19.9	62.5	12.4	5.7
Final Sample	Other	0	0	0.0	0		0	0					

This table provides an overview of our sample at different stages of data preparation. The initial dataset is based on Capital IQ (denoted as “CIQ”), which we merge with balance sheet data from Worldscope, Compustat, and Amadeus, referred to as “CIQ & BS” in the table. This merged dataset is called as the unrestricted sample in our analysis. We then integrate the data with debt ownership information from eMAXX and Dealscan, labeled as “CIQ & BS & Ownerships”. From this penultimate sample, we exclude observations where observed debt ownership covers less than 30% of a firm’s total balance sheet debt, and we further remove countries with fewer than ten distinct firms to construct the final sample. Countries with unknown legal origin according to [La Porta et al. \(2008\)](#) are categorized as “Other”. Table columns report the sample construction stages, legal origin, number of countries, number of firms, percentage of firms by legal origin, number of public firms, number of firms that never had debt, number of firm-quarter observations, and average book leverage (total debt divided by total assets). Book leverage is available only after we merge capital IQ data with balance sheet information. The last four columns show the outstanding amounts of arm’s length debt (bonds, notes, and commercial papers), term loans, drawn lines of credit, and other forms of debt, according to debt structures in Capital IQ. Detailed variable definitions and sources are provided in Appendix Table [A1](#).

Table 2: Summary Statistics

Country	Num Firms	Num Firm Quarters	Public Firms %	Total Assets USD (m)	Total Debt USD (m)	Leverage	Arm's Length Debt Observed %	Loans Observed %	Lines Observed %	Identified Instruments %	Total Debt Ownership Observed %
Australia	278	1557	56.65	2,592.39	653.70	27.46	4.47	33.79	46.19	84.45	81.74
Bermuda	55	778	68.12	7,454.64	1,636.46	32.30	26.08	40.27	14.57	80.92	70.57
Canada	577	8200	64.76	4,798.94	1,377.12	30.33	30.88	18.20	37.40	86.48	71.91
Cayman Islands	12	193	58.55	1,835.67	517.37	27.18	16.61	42.06	28.05	86.71	79.41
Guernsey	11	66	19.70	1,609.18	635.08	36.32	15.23	47.93	17.30	80.46	70.56
Hong Kong	194	1237	75.59	4,172.63	743.31	24.34	6.59	70.17	3.77	80.53	75.76
India	202	853	83.47	4,312.84	1,473.40	43.52	3.60	67.05	2.94	73.59	71.40
Ireland	55	587	65.25	9,562.39	2,953.42	31.72	25.81	32.01	24.13	81.95	71.18
Israel	14	68	86.76	2,572.92	1,076.65	38.19	6.07	62.65	13.03	81.75	76.81
Jersey	10	59	18.64	3,251.63	582.84	26.46	26.11	18.57	44.67	89.35	75.00
Malaysia	56	388	75.77	1,632.88	570.56	28.95	0.75	63.94	15.21	79.89	79.29
New Zealand	41	273	53.85	993.11	243.41	26.14	1.15	25.38	61.74	88.27	87.47
Pakistan	16	196	91.33	767.02	138.25	27.18	0.00	78.82	0.00	78.82	78.82
Saudi Arabia	35	525	96.57	7,569.39	3,130.48	40.47	0.59	78.60	1.01	80.19	79.62
Singapore	108	942	43.10	2,349.95	642.10	29.24	8.80	66.53	4.16	79.49	74.15
South Africa	32	168	83.93	3,914.85	1,072.61	24.30	1.97	50.74	24.16	76.88	75.13
Thailand	51	432	80.79	1,244.22	495.78	37.91	2.12	75.11	0.37	77.60	75.77
United Arab Emirates	33	370	75.41	6,079.63	1,181.99	26.81	7.74	75.38	1.39	84.52	78.49
United Kingdom	579	4347	50.59	4,967.38	962.29	28.99	10.90	34.68	41.05	86.63	80.12
United States	4449	73401	56.68	8,077.90	2,263.36	33.57	41.69	23.62	22.27	87.57	71.45
English Common Law	6808	94640	58.17	7,287.34	2,022.97	32.83	36.28	26.60	23.94	86.82	72.35
Denmark	31	224	65.18	5,753.88	1,214.20	27.44	8.89	55.55	20.41	84.85	78.77
Finland	59	576	60.59	3,881.11	1,029.62	33.90	17.99	54.16	6.96	79.11	64.13
Norway	131	1334	76.39	2,227.01	662.81	37.93	31.66	35.18	16.55	83.38	65.57
Sweden	98	886	74.72	2,943.71	838.11	33.78	13.94	44.77	23.46	82.17	74.10
Scandinavian Civil Law	319	3020	72.05	3,014.35	825.10	35.17	22.16	43.12	17.03	82.32	68.78
Austria	22	180	90.00	5,019.25	1,439.35	29.79	18.56	35.66	23.14	77.37	61.06
China	140	889	89.20	3,670.39	771.10	26.59	11.07	69.56	1.18	81.81	74.59
Germany	209	1963	78.76	4,157.44	1,318.02	31.64	7.96	56.69	16.48	81.13	74.98
Japan	997	10990	84.20	2,287.67	602.56	25.65	1.68	65.74	10.64	78.07	76.66
Poland	31	305	59.67	3,144.47	713.42	29.11	8.45	51.03	18.94	78.42	73.49
South Korea	41	220	93.64	4,012.44	1,304.75	31.87	7.44	63.50	5.51	76.45	72.22
Switzerland	68	353	70.82	4,181.25	1,328.50	28.30	9.79	41.22	26.64	77.64	70.34
Taiwan	412	5424	88.57	1,116.89	360.40	32.46	1.20	60.13	16.31	77.64	76.57
German Civil Law	1920	20324	84.61	2,304.90	643.69	28.29	3.03	62.60	12.76	78.39	76.04
Argentina	19	158	92.41	2,031.68	410.68	23.49	33.15	52.36	0.00	85.52	65.90
Belgium	40	316	61.71	4,156.26	1,390.78	32.37	18.16	47.31	15.97	81.44	68.70
Brazil	41	201	60.20	2,928.90	857.41	30.52	18.38	51.78	2.24	72.41	61.55
Chile	25	203	96.55	4,868.53	1,460.57	29.29	32.24	43.46	0.00	75.70	58.70
Colombia	10	76	98.68	11,538.62	3,347.42	40.59	49.36	28.51	0.26	78.12	52.60
France	270	1828	53.99	5,900.08	1,767.98	32.22	15.62	49.12	16.53	81.27	70.90
Greece	48	280	54.64	1,489.66	725.13	48.43	4.16	63.31	10.94	78.41	75.88
Indonesia	63	781	96.54	1,200.38	421.38	36.77	5.96	62.17	14.34	82.47	78.82
Italy	127	1048	55.44	4,020.21	1,456.70	32.94	12.25	58.77	8.31	79.32	70.31
Kuwait	19	155	74.84	3,103.55	933.04	33.07	0.00	70.34	6.90	77.24	77.24
Luxembourg	26	293	82.25	18,559.37	4,108.73	33.28	29.94	45.58	12.86	88.37	70.97
Mexico	62	938	84.65	6,586.55	2,620.79	34.91	35.50	44.32	2.20	82.02	62.50
Netherlands	97	758	52.11	5,669.77	1,724.40	29.60	12.47	42.52	28.38	83.37	76.35
Oman	13	158	97.47	5,381.85	624.47	32.69	10.24	74.18	1.13	85.55	76.14
Peru	17	198	84.85	1,750.50	443.17	32.71	36.41	44.60	0.00	81.01	60.09
Philippines	25	206	83.50	2,827.69	1,217.17	36.44	9.48	64.08	1.12	74.69	66.49
Qatar	12	44	97.73	5,813.67	1,397.85	26.07	0.91	67.07	3.95	71.93	71.05
Russia	49	348	72.13	16,259.83	4,900.19	36.86	0.55	72.49	0.50	73.54	73.04
Spain	102	872	66.17	5,937.51	2,121.28	42.54	9.03	68.24	5.03	82.30	75.76
Turkey	24	334	90.42	4,461.52	1,615.26	40.31	9.61	68.00	0.00	77.61	71.00
French Civil Law	1089	9195	69.83	5,567.98	1,764.58	34.64	15.86	54.87	10.03	80.76	70.88
World	10136	127179	63.57	6,265.34	1,755.43	32.29	29.15	34.79	20.99	84.93	72.75

This table presents an overview of the debt structure and coverage within our sample, categorized by country and legal origins. The reported figures represent averages based on firm-quarter observations for each country. The first five columns summarize key characteristics of the firms in our sample, including the number of firms, number of quarterly observations, the percentage of public firms, total assets (in USD millions), total debt (in USD millions), and book leverage (total debt divided by total assets, expressed as a percentage). The subsequent columns report various measures of debt coverage, all expressed as a percentage of total debt. These include the outstanding amounts of arm's length debt (specific to instruments identified in our sample), outstanding amounts of term loans, outstanding amounts of drawn lines of credit, the total outstanding amount of all observed debt instruments (bonds, loans, and credit lines), and the total observed debt ownership for these instruments. Averages are calculated excluding missing observations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 3: Debt Ownership Concentration - Bank Debt

Country	Num Tranches (Loans & Lines)	Num Loans	Num Lines	Num Lenders	Num Lead Arrangers	HHI Lenders' Amounts	Num to Cross 10%	Num to Cross 20%	Num to Cross 30%
Australia	3.40	1.34	2.06	8.41	4.77	27.99	1.09	1.43	1.93
Bermuda	3.61	2.66	0.96	10.64	7.40	20.94	1.15	1.74	2.51
Canada	1.91	0.75	1.15	6.92	2.01	24.35	1.12	1.63	2.23
Cayman Islands	4.13	3.55	0.58	8.92	3.25	24.49	1.04	1.36	1.81
Guernsey	1.98	1.35	0.64	4.48	2.80	66.27	1.08	1.23	1.35
Hong Kong	2.21	1.92	0.29	15.30	8.05	16.51	1.18	1.86	2.69
India	3.90	3.67	0.24	14.58	4.53	28.04	1.11	1.49	2.07
Ireland	2.80	1.86	0.95	11.84	4.29	22.67	1.24	1.85	2.52
Israel	2.03	1.62	0.41	7.97	3.41	34.05	1.18	1.61	1.94
Jersey	1.53	0.42	1.10	3.78	3.27	53.07	1.14	1.34	1.62
Malaysia	3.50	3.16	0.34	7.31	4.65	33.73	1.02	1.25	1.64
New Zealand	3.52	0.73	2.80	3.66	2.29	37.43	1.00	1.04	1.27
Pakistan	1.11	1.11	0.00	5.55	3.39	31.54	1.04	1.40	1.88
Saudi Arabia	3.85	3.80	0.06	13.02	11.19	27.54	1.15	1.66	2.30
Singapore	2.11	1.85	0.25	7.83	4.49	28.98	1.04	1.36	1.87
South Africa	3.44	2.32	1.12	11.20	6.46	25.04	1.21	1.73	2.40
Thailand	2.40	2.25	0.15	5.94	3.31	35.17	1.01	1.23	1.46
United Arab Emirates	2.38	2.22	0.15	11.12	6.18	20.82	1.26	1.88	2.72
United Kingdom	2.47	1.35	1.11	7.74	4.67	30.48	1.11	1.53	2.03
United States	1.99	1.05	0.95	9.33	2.76	24.49	1.20	1.83	2.54
English Common Law	2.10	1.14	0.96	9.15	3.04	25.05	1.18	1.76	2.43
Denmark	3.19	2.55	0.63	9.12	7.44	24.52	1.29	1.87	2.55
Finland	2.69	2.12	0.57	6.68	4.72	26.01	1.10	1.42	1.82
Norway	2.19	1.59	0.61	4.97	3.54	29.13	1.07	1.38	1.80
Sweden	3.32	2.50	0.81	6.57	5.23	36.10	1.13	1.50	1.91
Scandinavian Civil Law	2.69	2.03	0.66	6.07	4.55	30.22	1.11	1.47	1.90
Austria	5.24	4.54	0.69	9.96	7.01	21.47	1.02	1.33	1.91
China	1.54	1.48	0.06	8.56	4.27	26.98	1.07	1.44	1.96
Germany	4.74	3.99	0.76	12.08	6.90	25.94	1.24	1.84	2.51
Japan	3.89	3.47	0.42	7.74	1.82	26.87	1.02	1.24	1.63
Poland	2.33	1.62	0.71	9.69	7.87	19.17	1.23	1.96	2.90
South Korea	4.58	4.34	0.25	11.20	5.39	22.61	1.00	1.21	1.72
Switzerland	2.45	1.68	0.77	13.41	6.14	23.62	1.32	2.07	2.92
Taiwan	3.70	2.81	0.88	13.16	5.95	13.70	1.11	1.72	2.46
German Civil Law	3.79	3.22	0.57	9.82	3.77	22.99	1.08	1.46	2.00
Argentina	1.24	1.24	0.00	4.13	2.30	35.95	1.07	1.53	2.01
Belgium	2.63	1.73	0.90	10.69	6.06	25.77	1.27	1.89	2.61
Brazil	2.05	1.94	0.11	8.33	3.12	24.12	1.09	1.56	2.09
Chile	1.57	1.55	0.02	9.13	2.74	17.27	1.26	1.98	2.97
Colombia	1.55	1.41	0.14	4.93	2.97	30.07	1.08	1.60	2.22
France	4.00	2.81	1.20	11.82	6.46	18.70	1.15	1.78	2.53
Greece	3.77	3.28	0.49	9.49	4.31	30.32	1.10	1.48	2.01
Indonesia	2.56	1.91	0.65	11.23	5.91	23.13	1.10	1.57	2.14
Italy	3.56	2.70	0.86	10.72	6.21	20.67	1.15	1.74	2.47
Kuwait	2.93	2.66	0.27	15.37	5.57	22.21	1.61	2.47	3.48
Luxembourg	3.13	2.18	0.95	14.35	8.88	27.02	1.23	1.77	2.43
Mexico	2.01	1.78	0.23	10.44	3.64	20.60	1.21	1.81	2.58
Netherlands	3.39	2.34	1.06	11.63	6.34	19.33	1.32	2.06	2.84
Oman	1.87	1.83	0.04	10.08	7.03	19.71	1.23	1.87	2.57
Peru	0.84	0.84	0.00	4.88	1.38	27.47	1.15	1.45	1.90
Philippines	3.70	3.63	0.07	17.90	7.52	24.60	1.17	1.77	2.65
Qatar	2.20	1.98	0.23	14.86	8.86	25.16	1.34	2.11	3.09
Russia	4.37	4.28	0.09	18.90	11.59	24.85	1.23	1.98	2.78
Spain	4.08	3.45	0.63	19.21	10.38	17.91	1.24	2.00	2.90
Turkey	4.46	4.46	0.00	11.41	6.98	22.10	1.17	1.70	2.47
French Civil Law	3.23	2.58	0.65	12.12	6.33	21.49	1.19	1.81	2.55
World	2.46	1.60	0.87	9.40	3.43	24.49	1.16	1.70	2.35

This table presents consolidated measures of ownership concentration for bank debt (loans and credit lines) at the firm level. The reported figures represent averages based on firm-quarter observations within each country. The statistics include the total number of tranches (combining loans and lines, and separately for each), the number of lenders, the Herfindahl-Hirschman Index (HHI) based on lenders' debt amounts, and the minimum number of lenders required to cross the 10%, 20%, and 30% ownership thresholds relative to the total tranche amount. Averages are computed excluding missing observations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 4: Debt Ownership Concentration - Arm's Length Debt

Country	Bonds Avg Size USD (m)	Bonds Outstanding PAR % of Total Debt	Bond Ownership Observed % of Outstanding PAR	Num Bond Issues	Num Bondholders	HHI Bondholders' Ownerships	Num to Cross 10%	Num to Cross 20%	Num to Cross 30%
Australia	262.49	4.47	31.23	0.31	7.36	9.16	1.33	2.25	3.73
Bermuda	303.21	26.08	48.64	1.39	69.81	6.69	1.36	2.66	4.45
Canada	252.99	30.88	45.90	2.34	105.21	6.51	1.74	3.53	6.15
Cayman Islands	312.99	16.61	53.91	0.73	38.74	7.44	1.17	2.02	3.30
Guernsey	266.28	15.23	33.46	0.52	23.44	9.68	1.29	2.12	2.88
Hong Kong	326.75	6.59	22.22	0.35	8.52	14.96	1.09	1.86	2.81
India	194.00	3.60	31.91	0.45	7.54	26.58	1.10	1.52	2.21
Ireland	446.12	25.81	58.15	3.54	175.51	4.05	1.86	3.94	6.92
Israel	612.49	6.07	16.72	0.22	6.62	15.79	1.50	2.00	2.50
Jersey	388.48	26.11	42.24	0.73	26.69	11.56	1.06	1.78	2.61
Malaysia	74.37	0.75	10.43	0.06	0.27	46.13	1.00	1.00	1.00
New Zealand	259.38	1.15	11.08	0.05	0.65	3.94	2.00	3.00	5.00
Pakistan	.	0.00	.	0.00	0.00	.	.	.	.
Saudi Arabia	625.00	0.59	1.94	0.01	0.03	.	.	.	.
Singapore	192.53	8.80	32.36	0.64	19.63	11.62	1.36	2.31	3.78
South Africa	172.82	1.97	21.42	0.21	3.96	30.65	1.00	1.00	1.00
Thailand	80.82	2.12	25.66	0.22	0.78	60.37	1.00	1.00	1.00
United Arab Emirates	480.81	7.74	20.30	0.54	16.60	8.98	1.70	3.10	4.85
United Kingdom	385.58	10.90	37.13	0.64	33.72	5.73	1.65	3.38	5.80
United States	350.78	41.69	60.50	3.56	194.08	4.83	1.83	3.86	6.77
English Common Law	342.00	36.28	58.23	3.05	163.54	5.05	1.82	3.81	6.67
Denmark	613.41	8.89	32.70	0.33	17.81	8.05	1.00	1.85	2.92
Finland	267.02	17.99	15.77	0.95	22.96	8.76	1.29	2.50	4.29
Norway	116.24	31.66	38.39	2.69	24.76	10.55	1.22	2.19	3.35
Sweden	197.60	13.94	37.67	0.85	19.17	10.59	1.31	2.24	3.55
Scandinavian Civil Law	179.52	22.16	33.54	1.64	22.26	10.44	1.24	2.20	3.40
Austria	368.49	18.56	11.58	1.12	32.48	5.65	1.38	2.75	5.00
China	287.44	11.07	28.92	0.52	20.00	11.59	1.35	2.29	3.62
Germany	516.02	7.96	19.21	0.38	20.80	6.50	1.34	2.46	4.19
Japan	166.45	1.68	16.94	0.21	2.99	46.16	1.02	1.17	1.44
Poland	102.55	8.45	38.75	0.88	9.29	12.94	1.15	1.96	2.84
South Korea	227.20	7.44	28.02	0.38	8.98	24.17	1.29	1.82	2.71
Switzerland	338.93	9.79	19.63	0.44	12.80	8.12	1.58	3.00	5.16
Taiwan	109.30	1.20	15.07	0.07	0.45	74.96	1.00	1.06	1.18
German Civil Law	241.51	3.03	19.03	0.23	5.37	31.01	1.17	1.76	2.61
Argentina	160.86	33.15	39.58	1.15	28.58	11.09	1.02	1.33	2.14
Belgium	238.64	18.16	22.68	0.97	32.28	8.39	1.11	2.16	3.36
Brazil	235.15	18.38	36.13	0.97	50.18	8.85	1.50	2.67	4.11
Chile	1,016.41	32.24	47.01	1.60	49.23	14.15	1.10	1.79	2.78
Colombia	552.90	49.36	45.96	2.26	213.07	4.48	1.68	3.28	5.60
France	517.06	15.62	29.56	1.16	66.58	9.00	1.67	3.37	5.94
Greece	307.09	4.16	32.25	0.23	7.00	12.92	1.00	1.19	1.54
Indonesia	313.30	5.96	31.75	0.18	8.78	8.24	1.26	2.02	3.33
Italy	552.70	12.25	23.89	0.55	33.61	7.37	1.25	2.19	3.81
Kuwait	.	0.00	.	0.00	0.00	.	.	.	.
Luxembourg	582.39	29.94	41.52	3.09	237.10	3.48	2.44	5.88	10.95
Mexico	269.64	35.50	42.31	3.61	132.37	8.18	1.48	2.84	4.91
Netherlands	582.20	12.47	41.27	0.81	58.53	3.32	2.05	4.41	7.80
Oman	328.85	10.24	5.43	0.41	6.04	.	.	.	.
Peru	155.99	36.41	41.05	1.19	30.53	10.02	1.11	1.72	2.89
Philippines	473.23	9.48	15.91	0.44	10.24	12.51	1.00	1.17	1.50
Qatar	420.00	0.91	3.78	0.05	0.23	.	.	.	.
Russia	171.76	0.55	14.92	0.14	1.36	67.19	1.00	1.00	1.00
Spain	502.74	9.03	22.29	0.36	19.49	6.10	1.33	2.42	3.98
Turkey	339.53	9.61	29.42	0.94	35.60	5.37	1.34	2.61	4.32
French Civil Law	426.33	15.86	33.07	1.09	53.64	8.16	1.52	2.94	5.10
World	338.51	29.15	54.86	2.43	126.97	5.51	1.79	3.73	6.53

This table presents consolidated measures of ownership concentration for arm's length debt (bonds, notes, and commercial papers) at the firm level. The reported figures represent averages based on firm-quarter observations within each country. The statistics include the average bond size (in USD millions), the outstanding amount of bonds as a percentage of total debt, and the proportion of bond ownership observed in eMAXX as a percentage of bonds' outstanding amounts (averaged across bonds' par held in eMAXX and weighted by the par outstanding of bonds within the quarter). Additional measures include the number of bond issues and bondholders, the Herfindahl-Hirschman Index (HHI) based on bondholder ownership shares, and the minimum number of arm's length creditors required to cross the 10%, 20%, and 30% ownership thresholds relative to the total observed arm's length debt ownership. Averages are computed excluding missing observations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 5: Debt Ownership Concentration - All Creditors

Country	Total Debt Ownership Observed %	Num Creditors	HHI Creditors' Ownership	C1	C3	C5	C10	Num to Cross 10%	Num to Cross 20%	Num to Cross 30%
Australia	81.74	15.77	27.20	31.68	55.60	77.35	92.02	1.11	1.47	2.03
Bermuda	70.57	80.44	16.34	22.30	35.65	52.75	74.58	1.26	2.18	3.34
Canada	71.91	112.13	18.84	22.77	40.35	60.27	78.19	1.36	2.30	3.57
Cayman Islands	79.41	47.66	19.03	27.25	45.27	64.14	82.79	1.05	1.54	2.17
Guernsey	70.56	27.92	56.38	61.53	76.49	85.37	91.23	1.14	1.35	1.62
Hong Kong	75.76	23.82	16.07	21.55	37.60	58.17	82.29	1.18	1.89	2.76
India	71.40	22.13	27.88	36.60	51.56	68.33	86.28	1.12	1.50	2.11
Ireland	71.18	187.35	16.21	20.58	34.74	51.93	70.71	1.57	2.80	4.45
Israel	76.81	14.59	33.39	40.49	61.65	76.37	89.62	1.19	1.63	1.99
Jersey	75.00	30.47	42.51	47.96	64.65	77.02	88.24	1.17	1.46	1.83
Malaysia	79.29	7.59	33.74	38.53	64.32	80.93	95.22	1.02	1.24	1.64
New Zealand	87.47	4.32	37.11	42.77	74.58	94.95	99.55	1.00	1.04	1.29
Pakistan	78.82	5.55	31.54	34.31	52.41	78.65	98.90	1.04	1.40	1.88
Saudi Arabia	79.62	13.05	27.53	34.81	48.59	65.24	86.02	1.15	1.67	2.31
Singapore	74.15	27.46	27.74	32.39	54.55	76.86	92.30	1.09	1.48	2.08
South Africa	75.13	15.16	24.95	28.94	48.81	69.19	86.44	1.21	1.73	2.42
Thailand	75.77	6.72	34.78	42.56	67.36	85.66	96.84	1.01	1.22	1.46
United Arab Emirates	78.49	27.72	20.04	23.80	39.30	62.90	85.55	1.29	1.94	2.86
United Kingdom	80.12	41.46	28.22	31.81	51.46	72.28	88.13	1.18	1.75	2.47
United States	71.45	203.41	16.20	21.33	33.19	47.95	65.57	1.59	2.98	4.87
English Common Law	72.35	172.69	17.79	22.79	36.16	52.08	69.66	1.51	2.75	4.42
Denmark	78.77	26.93	23.25	26.57	45.60	62.65	85.94	1.29	1.96	2.63
Finland	64.13	29.63	23.88	28.02	51.24	75.58	90.56	1.12	1.54	2.05
Norway	65.57	29.73	21.68	27.57	48.80	69.15	87.17	1.12	1.67	2.35
Sweden	74.10	25.75	30.01	35.33	55.48	74.87	89.35	1.17	1.62	2.19
Scandinavian Civil Law	68.78	28.34	24.66	29.85	50.98	71.57	88.36	1.14	1.65	2.27
Austria	61.06	42.44	19.41	26.45	45.63	68.35	89.17	1.03	1.40	2.01
China	74.59	28.57	25.42	32.35	51.30	71.56	89.13	1.10	1.55	2.19
Germany	74.98	32.88	24.70	29.13	47.43	65.98	85.01	1.25	1.87	2.62
Japan	76.66	10.73	26.72	32.84	57.70	82.14	96.38	1.02	1.24	1.64
Poland	73.49	18.98	17.78	20.58	37.54	64.63	84.46	1.25	1.98	2.99
South Korea	72.22	20.18	21.57	29.52	50.38	74.24	91.47	1.03	1.29	1.82
Switzerland	70.34	26.21	21.99	24.96	41.86	58.88	80.50	1.36	2.18	3.10
Taiwan	76.57	13.60	13.75	20.65	35.77	57.94	87.55	1.11	1.72	2.47
German Civil Law	76.04	15.19	22.67	28.79	49.81	72.79	92.04	1.08	1.47	2.03
Argentina	65.90	32.70	27.10	31.91	48.75	65.75	87.69	1.06	1.51	2.12
Belgium	68.70	42.97	23.88	27.96	44.56	64.45	83.15	1.24	1.87	2.71
Brazil	61.55	58.51	20.04	24.85	43.24	67.41	86.54	1.12	1.70	2.41
Chile	58.70	58.36	15.38	20.73	36.40	51.86	74.04	1.34	2.21	3.30
Colombia	52.60	218.00	12.20	18.24	29.35	45.65	66.84	1.43	2.41	3.75
France	70.90	78.41	17.14	21.00	37.48	60.77	83.09	1.25	2.06	3.09
Greece	75.88	16.50	29.67	35.56	51.57	68.94	89.77	1.11	1.52	2.05
Indonesia	78.82	20.02	22.02	26.99	48.27	68.82	87.70	1.12	1.64	2.26
Italy	70.31	44.33	18.96	23.08	40.99	63.21	85.29	1.19	1.84	2.66
Kuwait	77.24	15.37	22.21	28.21	47.06	62.82	79.93	1.61	2.46	3.53
Luxembourg	70.97	251.44	17.91	23.38	37.96	54.68	70.06	1.59	2.92	4.80
Mexico	62.50	142.80	13.53	18.90	32.53	50.70	69.92	1.43	2.47	3.92
Netherlands	76.35	70.17	17.52	21.49	37.97	57.59	78.46	1.42	2.34	3.38
Oman	76.14	16.13	19.40	26.43	41.44	61.35	84.24	1.28	1.93	2.70
Peru	60.09	35.40	19.71	26.90	46.03	62.97	81.27	1.15	1.61	2.33
Philippines	66.49	28.15	24.09	29.29	43.21	61.61	82.11	1.17	1.87	2.73
Qatar	71.05	15.09	25.15	28.11	40.42	62.92	82.79	1.34	2.11	3.09
Russia	73.04	20.26	24.78	30.74	45.22	59.39	77.66	1.23	1.96	2.78
Spain	75.76	38.70	17.09	22.56	36.86	55.23	78.08	1.29	2.10	3.12
Turkey	71.00	47.01	18.71	26.16	39.54	59.89	83.45	1.25	1.82	2.61
French Civil Law	70.88	65.76	18.93	23.84	40.11	60.04	80.85	1.28	2.04	3.02
World	72.75	136.36	18.81	23.99	38.98	56.43	74.49	1.42	2.47	3.89

This table presents consolidated measures of ownership concentration for all creditors. The reported figures represent averages based on firm-quarter observations within each country. The columns show, respectively, the total observed ownership of identified debt instruments as a percentage of total debt, the number of all creditors (holding bonds, loans, or lines of credit), the Herfindahl-Hirschman Index (HHI) based on creditors' ownership shares, the ownership stakes of the largest 1, 3, 5, and 10 creditors as percentages of total debt, and the minimum number of creditors required to cross the 10%, 20%, and 30% ownership thresholds. Averages are computed excluding missing observations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 6: Debt Maturity

Country	Total Debt	Arm's Length Debt	Bank Debt		
			Bank Loans	Credit Lines	Total Bank Debt
Australia	2.55	5.15	2.83	2.10	2.39
Bermuda	4.57	5.49	3.42	2.83	3.26
Canada	4.35	6.87	3.13	2.39	2.58
Cayman Islands	3.26	4.91	2.65	2.64	2.66
Guernsey	4.91	4.38	5.41	2.91	4.89
Hong Kong	2.31	3.46	2.23	2.31	2.18
India	5.69	5.17	5.87	3.20	5.70
Ireland	5.05	8.21	3.34	2.75	3.12
Israel	3.83	8.38	3.70	1.88	3.38
Jersey	3.43	3.64	5.54	2.69	3.47
Malaysia	3.39	3.18	3.84	1.76	3.38
New Zealand	2.37	4.58	2.34	2.33	2.31
Pakistan	5.04	.	5.14	.	5.04
Saudi Arabia	4.99	4.68	5.04	2.14	4.97
Singapore	2.60	3.55	2.44	2.36	2.39
South Africa	2.30	2.74	2.42	2.30	2.26
Thailand	4.32	3.12	4.43	4.89	4.32
United Arab Emirates	3.65	5.97	3.44	3.30	3.40
United Kingdom	3.50	6.65	3.26	2.64	2.94
United States	5.83	8.45	3.34	2.73	3.01
English Common Law	5.39	8.19	3.35	2.67	2.99
Denmark	3.48	3.45	3.76	2.94	3.40
Finland	3.26	3.57	3.15	2.80	3.07
Norway	3.32	3.38	3.25	2.64	3.10
Sweden	3.59	3.26	3.83	2.74	3.52
Scandinavian Civil Law	3.40	3.39	3.43	2.73	3.25
Austria	3.30	2.94	4.06	2.55	3.53
China	3.88	3.56	3.99	2.40	3.87
Germany	3.37	4.44	3.38	2.64	3.23
Japan	3.34	3.77	3.74	1.24	3.36
Poland	3.19	3.24	3.38	2.64	3.19
South Korea	4.05	6.43	3.85	6.84	3.80
Switzerland	3.09	5.01	2.78	2.61	2.72
Taiwan	2.70	2.74	2.84	2.37	2.69
German Civil Law	3.20	3.76	3.46	1.98	3.18
Argentina	3.02	4.72	2.20	.	2.05
Belgium	4.13	4.82	3.75	2.72	3.44
Brazil	3.34	4.33	3.23	2.06	3.14
Chile	5.39	8.60	2.77	1.61	2.63
Colombia	5.70	7.61	3.69	3.48	3.48
France	3.57	4.60	3.38	2.83	3.19
Greece	4.59	4.97	4.61	4.49	4.64
Indonesia	2.96	3.94	3.07	2.18	2.82
Italy	3.21	4.16	3.06	2.60	3.00
Kuwait	1.91	.	1.99	1.87	1.91
Luxembourg	3.81	5.12	3.55	2.60	3.30
Mexico	5.32	7.99	2.75	2.62	2.73
Netherlands	3.55	6.35	3.16	2.42	2.90
Oman	5.35	1.89	5.40	7.86	5.31
Peru	4.38	6.20	2.82	.	2.68
Philippines	3.75	4.81	3.42	3.07	3.39
Qatar	5.26	6.37	5.75	1.48	5.20
Russia	3.27	4.56	3.32	2.30	3.26
Spain	3.70	5.51	3.42	2.85	3.34
Turkey	3.35	4.97	3.35	.	3.33
French Civil Law	3.78	5.67	3.29	2.70	3.15
World	4.88	7.78	3.37	2.60	3.05

This table presents debt maturity, measured in years, across different types of debt. The reported figures represent averages based on firm-quarter observations within each country. The columns report the overall debt maturity, the maturity of arm's length debt (bonds, notes, and commercial papers), and the maturity of bank debt (reported separately for loans and credit lines, and then aggregated for total bank debt). All averages within firm-quarter observations are weighted by the par value of the respective debt instruments. Averages are computed excluding missing observations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 7: Secured Debt

Country	Secured Debt (% of Total Debt)	Arm's Length Secured Debt (% of Total Secured Debt)	Bank Secured Debt (% of Total Secured Debt)
Australia	18.77	3.23	96.77
Bermuda	47.38	1.68	98.32
Canada	27.11	10.48	89.52
Cayman Islands	42.32	28.11	71.89
Guernsey	33.57	0.00	100.00
Hong Kong	13.51	5.40	94.60
India	33.32	3.51	96.49
Ireland	36.03	2.41	97.59
Israel	70.03	0.00	100.00
Jersey	30.61	33.33	66.67
Malaysia	34.75	0.00	100.00
New Zealand	13.77	0.00	100.00
Pakistan	0.01	0.00	100.00
Saudi Arabia	47.51	0.00	100.00
Singapore	17.12	3.60	96.40
South Africa	11.73	0.00	100.00
Thailand	19.26	4.07	95.93
United Arab Emirates	27.37	3.64	96.36
United Kingdom	27.10	7.15	92.85
United States	37.60	11.91	88.09
English Common Law	35.16	11.09	88.91
Denmark	43.94	0.00	100.00
Finland	17.80	4.13	95.87
Norway	45.66	12.00	88.00
Sweden	32.77	2.69	97.31
Scandinavian Civil Law	36.44	7.63	92.37
Austria	6.88	0.00	100.00
China	27.32	3.40	96.60
Germany	22.93	3.65	96.35
Japan	2.81	3.80	96.20
Poland	33.21	15.89	84.11
South Korea	23.83	0.00	100.00
Switzerland	26.90	1.60	98.40
Taiwan	58.04	0.13	99.87
German Civil Law	21.70	1.44	98.56
Argentina	17.95	0.00	100.00
Belgium	30.03	2.46	97.54
Brazil	31.42	2.74	97.26
Chile	1.35	50.00	50.00
Colombia	17.47	94.44	5.56
France	21.50	4.42	95.58
Greece	51.20	0.00	100.00
Indonesia	25.25	5.00	95.00
Italy	21.00	6.56	93.44
Kuwait	24.88	0.00	100.00
Luxembourg	39.68	6.25	93.75
Mexico	10.13	36.74	63.26
Netherlands	25.79	9.49	90.51
Oman	30.65	0.00	100.00
Peru	16.03	0.00	100.00
Philippines	15.97	0.00	100.00
Qatar	39.56	0.00	100.00
Russia	61.56	0.00	100.00
Spain	33.83	5.71	94.29
Turkey	18.53	0.00	100.00
French Civil Law	25.05	6.12	93.88
World	32.31	9.72	90.28

This table describes the composition of debt by security status within each country. The reported figures represent averages based on firm-quarter observations within each country in our sample. The columns report the total amount of secured debt (any lien) as a percentage of total debt, the proportion of secured arm's length debt as a percentage of total secured debt, and the proportion of secured bank debt as a percentage of total secured debt. Averages within firm-quarters are weighted by the par value of the respective debt instruments. Missing data are excluded from the calculations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 8: Debt Currency

Country	Local Currency %	USD %	EUR %	GBP %	JPY %	CAD %	AUD %	NZD %	NOK %	SEK %	CHF %	Other Currencies %	Arm's Length Debt in USD (as foreign) % of Total	Bank Debt in USD (as foreign) % of Total
													Arm's Length Debt	Bank Debt
Australia	76.35	19.36	1.72	0.71	0.00	0.18	76.35	0.92	0.00	0.00	0.02	0.73	50.61	16.55
Bermuda	0.26	95.16	1.15	1.15	0.00	0.00	0.09	0.00	0.23	0.00	0.01	2.20	92.20	94.90
Canada	61.71	36.97	0.92	0.27	0.00	61.69	0.08	0.00	0.00	0.00	0.00	0.06	42.97	33.28
Cayman Islands	0.00	84.32	0.66	0.02	0.00	0.88	0.00	0.00	0.00	0.00	0.00	14.11	94.37	76.82
Guernsey	0.00	57.65	11.27	31.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.13	58.58
Hong Kong	62.48	29.79	0.31	0.51	0.00	0.00	0.09	0.00	0.00	0.00	0.06	69.25	54.29	24.61
India	75.72	21.85	2.10	0.06	0.01	0.02	0.00	0.00	0.00	0.00	0.04	75.92	25.73	13.61
Ireland	25.06	70.80	25.06	3.62	0.00	0.12	0.33	0.00	0.01	0.00	0.01	0.06	87.23	68.39
Israel	17.70	80.47	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	17.90	65.93	82.00
Jersey	0.00	39.67	10.17	49.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	62.50	39.15
Malaysia	69.10	22.08	0.44	0.00	0.00	0.00	2.91	0.11	0.00	0.00	0.00	74.46	7.45	21.25
New Zealand	84.82	7.03	0.10	1.53	0.00	0.00	5.38	84.82	0.00	0.00	0.00	1.14	7.80	6.13
Pakistan	90.70	8.58	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.70	0.00	8.59
Saudi Arabia	77.09	22.75	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.20	13.79	23.33
Singapore	64.83	30.39	0.20	0.12	0.01	0.00	0.65	0.00	0.00	0.00	0.00	68.63	36.80	29.48
South Africa	50.60	31.11	10.92	4.10	0.00	0.00	1.04	0.00	0.00	0.00	2.09	50.74	33.05	30.71
Thailand	65.18	31.71	0.47	0.00	0.17	0.00	0.55	0.00	0.00	0.00	0.00	67.11	4.15	31.98
United Arab Emirates	43.14	55.00	0.80	0.48	0.00	0.06	0.05	0.00	0.04	0.00	0.21	43.36	65.13	53.47
United Kingdom	68.19	24.48	6.49	68.19	0.00	0.06	0.14	0.00	0.27	0.02	0.04	0.32	46.66	23.72
United States	98.07	98.11	1.29	0.21	0.02	0.22	0.06	0.00	0.00	0.01	0.01	0.06	0.00	0.00
English Common Law	89.92	84.02	1.63	3.31	0.01	5.49	1.35	0.26	0.02	0.01	0.02	3.88	5.35	6.74
Denmark	34.17	15.62	47.53	2.02	0.00	0.00	0.00	0.00	0.64	0.00	0.00	34.19	0.00	16.98
Finland	98.49	1.14	98.49	0.04	0.00	0.00	0.00	0.00	0.01	0.15	0.10	0.07	0.72	1.74
Norway	50.16	32.62	14.67	0.82	0.00	0.08	0.00	0.00	50.16	1.32	0.01	0.32	29.24	34.09
Sweden	60.64	14.42	23.36	0.29	0.00	0.06	0.00	0.00	0.86	60.64	0.07	0.30	9.94	15.81
Scandinavian Civil Law	61.09	20.11	35.34	0.61	0.00	0.05	0.00	0.00	22.57	18.49	0.04	2.79	17.29	20.92
Austria	96.39	3.47	96.39	0.04	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.07	4.46	4.55
China	70.18	25.90	0.13	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	73.93	46.28	18.77
Germany	94.73	4.74	94.73	0.09	0.00	0.13	0.00	0.00	0.00	0.00	0.21	0.10	8.27	5.13
Japan	98.23	1.48	0.26	0.00	98.23	0.00	0.00	0.00	0.00	0.00	0.00	0.03	2.18	0.86
Poland	71.62	9.90	17.45	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.80	71.63	0.68	10.50
South Korea	58.61	40.86	0.33	0.05	0.03	0.00	0.01	0.00	0.00	0.00	0.09	58.64	19.66	33.75
Switzerland	44.29	28.07	24.93	2.65	0.00	0.00	0.00	0.00	0.00	0.03	44.29	0.03	24.66	26.77
Taiwan	85.13	13.92	0.42	0.11	0.02	0.02	0.00	0.00	0.00	0.00	0.00	85.52	6.32	12.00
German Civil Law	91.40	7.22	10.72	0.08	53.31	0.02	0.00	0.00	0.00	0.00	0.80	27.84	6.57	5.96
Argentina	35.25	63.59	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.25	70.48	36.32
Belgium	74.11	24.57	74.11	0.31	0.00	0.34	0.19	0.09	0.17	0.00	0.01	0.20	22.99	23.70
Brazil	62.89	32.68	4.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.96	16.63	35.28
Chile	1.70	43.92	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.93	33.22	74.76
Colombia	39.48	73.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.41	84.83	46.94
France	91.85	7.38	91.85	0.54	0.00	0.09	0.00	0.00	0.01	0.01	0.04	0.09	11.17	7.43
Greece	41.59	58.36	41.59	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.03	62.80	58.50
Indonesia	10.19	89.03	0.58	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	10.36	62.44	88.28
Italy	97.24	2.50	97.24	0.19	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.01	12.25	1.47
Kuwait	83.66	15.55	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.04	1.17	16.89
Luxembourg	33.43	63.56	34.70	1.41	0.00	0.03	0.00	0.00	0.00	0.01	0.11	0.18	48.58	62.80
Mexico	27.26	70.17	1.95	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.05	27.61	68.88	52.32
Netherlands	73.05	26.22	70.91	2.43	0.01	0.23	0.08	0.00	0.02	0.00	0.00	0.10	44.96	23.54
Oman	60.66	38.84	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.68	33.86	36.98
Peru	11.78	88.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.82	76.28	78.27
Philippines	24.08	72.56	1.19	0.48	1.27	0.02	0.01	0.00	0.00	0.00	0.07	24.42	42.63	69.90
Qatar	46.21	51.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	22.22	51.80
Russia	18.43	66.56	14.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.46	46.15	64.91
Spain	93.28	5.40	93.28	0.19	0.00	0.14	0.09	0.00	0.00	0.00	0.01	0.89	10.33	5.60
Turkey	10.25	50.51	39.09	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.30	62.17	47.72
French Civil Law	58.60	37.14	50.07	0.44	0.03	0.06	0.03	0.00	0.01	0.00	0.02	12.20	37.83	34.07
World	87.29	66.92	7.26	2.53	8.57	4.10	1.01	0.19	0.54	0.44	0.14	8.29	7.10	8.80

This table describes the composition of debt by currency of issuance within each country. The reported figures represent averages based on firm-quarter observations within each country. The columns present the percentages of total debt issued in the local currency, USD, EUR, and other major currencies. The final two columns report the percentage of arm's length debt and bank debt issued in USD as a foreign currency as a percentage of total debt with those types. Averages within firm-quarters are weighted by the par value of the respective debt instruments. Missing data are excluded from the calculations. Detailed variable definitions and sources are provided in Appendix Table A1.

Table 9: Number of Creditors

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) Lead Arrangers	(5) All Creditors	(6) Arm's Length Creditors	(7) Banks	(8) Lead Arrangers	(9) All Creditors	(10) Arm's Length Creditors	(11) Banks	(12) Lead Arrangers
French	-73.52*** (18.61)	-75.72*** (18.76)	2.20** (0.97)	2.69*** (0.65)								
German	-37.29 (22.56)	-40.11* (21.88)	2.82** (1.35)	1.01 (1.12)								
Scandinavian	-103.74*** (13.53)	-102.41*** (13.64)	-1.33*** (0.29)	1.70*** (0.42)								
Anti Self Dealing Index					14.11 (24.52)	17.78 (24.49)	-3.66** (1.78)	0.05 (1.52)				
SizeGroup=0 × Anti Self Dealing Index									763.21*** (268.95)	766.15*** (273.97)	-2.93 (5.90)	2.52 (2.11)
SizeGroup=1 × Anti Self Dealing Index									331.67*** (121.36)	336.70*** (124.37)	-5.03 (3.88)	0.33 (1.68)
SizeGroup=2 × Anti Self Dealing Index									73.27* (38.49)	76.92* (38.68)	-3.65* (2.00)	0.06 (1.55)
SizeGroup=3 × Anti Self Dealing Index									-2.07 (39.03)	1.57 (38.65)	-3.64** (1.77)	0.12 (1.55)
Log Assets	96.37*** (23.49)	93.99*** (23.68)	2.38*** (0.24)	0.78*** (0.26)	96.94*** (23.52)	94.58*** (23.71)	2.36*** (0.24)	0.76*** (0.25)	143.73*** (45.02)	141.45*** (45.64)	2.29*** (0.66)	0.83** (0.35)
Log Age	5.31 (5.19)	6.14 (5.22)	-0.83*** (0.14)	-0.50*** (0.16)	2.80 (3.73)	3.59 (3.73)	-0.79*** (0.13)	-0.41*** (0.11)	0.27 (4.06)	1.06 (4.06)	-0.79*** (0.13)	-0.42*** (0.11)
Log GDP per Capita	21.16*** (7.42)	22.13*** (7.51)	-0.97* (0.50)	-0.47* (0.24)	16.42** (6.19)	17.32*** (6.09)	-0.91* (0.49)	-0.56 (0.35)	-2.73 (10.47)	-1.85 (10.40)	-0.88 (0.54)	-0.59* (0.34)
Fixed effects	I & Q	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All	All	All	All
Adj. R2	0.434	0.426	0.146	0.169	0.449	0.441	0.143	0.197	0.508	0.501	0.144	0.200
N	127172	127172	127172	127172	124831	124831	124831	124831	124831	124831	124831	124831

This table investigates the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (5) to (12) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table [A1](#). Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10: Number of Creditors and Credit Rating

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) Lead Arrangers	(5) All Creditors	(6) Arm's Length Creditors	(7) Banks	(8) Lead Arrangers	(9) All Creditors	(10) Arm's Length Creditors	(11) Banks	(12) Lead Arrangers
French	-55.31** (26.52)	-54.20** (26.05)	-1.11 (1.27)	2.13** (0.84)								
German	-6.07 (31.18)	-7.07 (30.85)	1.00 (0.75)	0.26 (0.93)								
Scandinavian	-46.71 (39.05)	-45.17 (39.37)	-1.54*** (0.44)	1.21*** (0.36)								
Anti Self Dealing Index					-14.57 (56.24)	-15.13 (56.21)	0.55 (1.81)	0.95 (1.35)	-72.27 (76.45)	-72.89 (77.25)	0.61 (2.10)	2.27 (1.63)
Rated $\times$ Credit Score=1 $\times$ Anti Self Dealing Index									2434.07*** (589.41)	2472.39*** (590.61)	-38.33** (14.67)	-18.59 (11.74)
Rated $\times$ Credit Score=2 $\times$ Anti Self Dealing Index									1100.17** (419.16)	1122.09** (419.85)	-21.93* (11.42)	-12.72 (9.37)
Rated $\times$ Credit Score=3 $\times$ Anti Self Dealing Index									677.74** (329.31)	693.62** (330.86)	-15.87* (8.16)	-11.71* (6.83)
Rated $\times$ Credit Score=4 $\times$ Anti Self Dealing Index									438.77* (253.45)	442.70* (255.44)	-3.92 (5.84)	-7.26 (5.01)
Rated $\times$ Credit Score=5 $\times$ Anti Self Dealing Index									138.61 (231.50)	134.43 (232.64)	4.18 (4.57)	-4.39 (3.61)
Rated $\times$ Credit Score=6 $\times$ Anti Self Dealing Index									58.35 (243.88)	54.71 (244.09)	3.64 (5.59)	-5.35 (3.51)
Rated	-724.02*** (107.89)	-738.22*** (105.70)	14.20*** (2.90)	8.10*** (1.30)	-713.63*** (110.25)	-727.83*** (108.07)	14.21*** (2.92)	7.64*** (1.44)	178.38 (383.16)	184.33 (384.34)	-5.94 (11.89)	-2.71 (9.17)
Rated $\times$ Credit Score	-126.69*** (14.13)	-129.50*** (13.91)	2.81*** (0.45)	1.62*** (0.19)	-127.11*** (15.10)	-129.95*** (14.87)	2.84*** (0.44)	1.60*** (0.19)	25.22 (73.15)	26.57 (73.17)	-1.34 (2.32)	0.25 (1.66)
Log Assets	102.90** (42.91)	100.25** (42.82)	2.64*** (0.30)	1.30*** (0.19)	105.52** (42.69)	102.88** (42.59)	2.64*** (0.31)	1.24*** (0.19)	104.16** (42.71)	101.50** (42.61)	2.66*** (0.32)	1.25*** (0.19)
Log Age	-3.20 (11.64)	-2.47 (11.81)	-0.73*** (0.27)	-0.59*** (0.17)	-5.54 (10.22)	-4.88 (10.33)	-0.66*** (0.23)	-0.50*** (0.11)	-5.38 (10.11)	-4.72 (10.21)	-0.66*** (0.22)	-0.49*** (0.10)
Log GDP per Capita	13.95** (6.62)	15.91** (6.52)	-1.96*** (0.51)	-0.40** (0.18)	17.76* (10.13)	19.20* (9.92)	-1.45*** (0.52)	-0.61* (0.34)	14.65 (8.90)	16.06* (8.65)	-1.41** (0.53)	-0.54 (0.34)
Fixed effects	1 & Q	1 & Q	1 & Q	1 & Q	1 & Q & R	1 & Q & R	1 & Q & R	1 & Q & R	1 & Q & R	1 & Q & R	1 & Q & R	1 & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Sample	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1
Adj. R2	0.478	0.474	0.196	0.201	0.486	0.482	0.197	0.205	0.495	0.493	0.213	0.219
N	2119	2119	2119	2119	2080	2080	2080	2080	2080	2080	2080	2080

This table investigates the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment and their interplay with credit quality on a cross-section of our sample at 2019Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil-law, German civil-law, and Scandinavian civil-law countries, with common-law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to Djankov et al. (2008b), along with a credit score and a dummy when this score is missing. The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. Firms' credit ratings are converted to a credit score from zero to six with one indicating an Aaa rating, two indicating an Aa rating, ..., and six indicating a B or worse rating. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (5) to (12) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Secured Debt

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Secured Debt	Secured Arm's Length Debt	Secured Bank Debt	Total Secured Debt	Secured Arm's Length Debt	Secured Bank Debt	Total Secured Debt	Secured Arm's Length Debt	Secured Bank Debt
French	-21.02*** (4.02)	-1.32 (0.85)	-19.68*** (3.86)						
German	-33.84*** (7.32)	-2.29*** (0.76)	-30.38*** (6.57)						
Scandinavian	-23.02*** (6.55)	-1.57 (1.50)	-23.08*** (5.78)						
CR				6.34*** (1.82)	0.10 (0.20)	5.75*** (1.72)			
SizeGroup=0 $\times$ CR							-13.68*** (2.22)	-0.12 (0.53)	-13.21*** (2.22)
SizeGroup=1 $\times$ CR							1.75 (2.08)	-0.04 (0.35)	1.66 (2.24)
SizeGroup=2 $\times$ CR							4.70*** (1.44)	0.24 (0.26)	4.01*** (1.33)
SizeGroup=3 $\times$ CR							7.14*** (1.90)	0.01 (0.25)	6.62*** (1.81)
Log Assets	-10.49*** (2.05)	0.13 (0.16)	-10.44*** (1.91)	-10.43*** (2.08)	0.09 (0.15)	-10.35*** (1.96)	-12.76*** (1.44)	0.10 (0.17)	-12.58*** (1.35)
Log Age	-5.77*** (0.82)	0.35 (0.25)	-6.19*** (0.60)	-6.28*** (1.11)	0.29 (0.28)	-6.61*** (0.84)	-5.97*** (0.96)	0.29 (0.29)	-6.32*** (0.69)
Log GDP per Capita	-2.86 (1.79)	0.92** (0.38)	-3.98** (1.61)	-6.70* (3.86)	0.13 (0.41)	-6.89* (3.66)	-5.12 (3.29)	0.14 (0.43)	-5.40* (3.11)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All
Adj. R2	0.284	0.118	0.304	0.273	0.123	0.293	0.286	0.123	0.305
N	126096	126096	126096	124697	124697	124697	124697	124697	124697

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil law, German civil law, and Scandinavian civil law countries, respectively, with common law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). SizeGroup includes the quartile of firms' size (total assets in USD) within the unrestricted sample of firms in that country. All specifications incorporate industry fixed effects using two-digit SIC classifications and year $\times$ quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table [A1](#). Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 12: Debt Maturity

	(1) Total Debt	(2) Arm's Length Debt	(3) Bank Debt	(4) Total Debt	(5) Arm's Length Debt	(6) Bank Debt	(7) Total Debt	(8) Arm's Length Debt	(9) Bank Debt
French	-1.31*** (0.27)	-1.86*** (0.62)	-0.18 (0.21)						
German	-0.71*** (0.16)	-3.39*** (0.43)	0.14 (0.24)						
Scandinavian	-1.19*** (0.27)	-2.92*** (0.41)	0.30** (0.12)						
Anti Self Dealing Index				0.07 (0.44)	2.33*** (0.78)	-0.59* (0.31)			
SizeGroup=0 $\times$ Anti Self Dealing Index							3.92*** (1.10)	7.97*** (1.89)	-0.58 (0.56)
SizeGroup=1 $\times$ Anti Self Dealing Index							1.20* (0.66)	4.35*** (0.81)	-0.62 (0.40)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.05 (0.52)	2.84*** (0.78)	-0.48 (0.30)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.18 (0.46)	2.32*** (0.77)	-0.66* (0.33)
Log Assets	0.94*** (0.17)	1.15*** (0.08)	0.11** (0.05)	0.93*** (0.17)	1.18*** (0.06)	0.10* (0.05)	1.09*** (0.21)	1.30*** (0.10)	0.11 (0.10)
Log Age	0.44*** (0.06)	0.55*** (0.04)	-0.07* (0.04)	0.43*** (0.06)	0.49*** (0.06)	-0.05 (0.05)	0.42*** (0.06)	0.50*** (0.05)	-0.05 (0.04)
Log GDP per Capita	-0.04 (0.11)	0.01 (0.39)	-0.31* (0.16)	-0.15 (0.15)	-0.26 (0.23)	-0.28 (0.18)	-0.22 (0.14)	-0.29 (0.22)	-0.29 (0.18)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All
Adj. R2	0.349	0.307	0.050	0.362	0.316	0.049	0.369	0.317	0.049
N	127172	55811	105958	124831	55140	103825	124831	55140	103825

This table investigates the association of debt maturity, measured in years, with the legal environment. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 13: Debt Currency

	Percent in Local Currency					Percent in USD (as Foreign Currency)					Bank Debt (10)	Bank Debt (11)
	All Debt (1)	Arm's length Debt (2)	Bank Debt (3)	All Debt (4)	All Debt (5)	All Debt (6)	Arm's length Debt (7)	Bank Debt (8)	All Debt (9)			
French	-19.27** (9.27)	-16.66*** (4.01)	-2.77 (6.76)			18.55** (8.27)	5.28 (3.26)	12.82** (5.71)		-4.94 (4.72)	-4.85 (4.56)	
German	3.39 (4.13)	-13.43*** (2.76)	18.21*** (5.10)			-1.80 (3.60)	0.08 (0.82)	-1.83 (2.83)		-3.26 (2.97)	-3.27 (2.97)	
Scandinavian	-29.83** (11.20)	-10.31** (4.26)	-20.96** (8.85)			13.00 (8.97)	2.35 (2.83)	10.51* (5.90)		3.39 (3.81)	3.78 (3.79)	
Anti Self Dealing Index				-15.96 (13.10)					10.82 (11.57)			
SizeGroup=0 × Anti Self Dealing Index					-14.77 (15.51)							
SizeGroup=1 × Anti Self Dealing Index					-10.36 (14.63)							
SizeGroup=2 × Anti Self Dealing Index					-10.92 (13.80)							
SizeGroup=3 × Anti Self Dealing Index					-18.85 (13.28)							
French × Foreign Bank Lending										30.98*** (4.80)		
French × Non-US Foreign Bank Lending											30.06*** (4.91)	
French × US Foreign Bank Lending											34.10** (14.69)	
German × Foreign Bank Lending										11.21*** (3.24)		
German × Non-US Foreign Bank Lending											9.87*** (3.30)	
German × US Foreign Bank Lending											18.70** (7.94)	
Scandinavian × Foreign Bank Lending										13.19 (10.23)		
Scandinavian × Non-US Foreign Bank Lending											11.27 (11.51)	
Scandinavian × US Foreign Bank Lending											29.92** (12.81)	
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q	I & Q	I & Q	I & Q & R	I & Q	I & Q	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Cluster	C	C	C	C	C	C	C	C	C	C	C	
Sample	All	All	All	All	All	All	All	All	All	All	All	
Adj. R2	0.225	0.375	0.373	0.246	0.250	0.234	0.096	0.193	0.249	0.222	0.223	
N	126096	126096	126096	123774	123774	126228	126228	126228	123906	104738	104736	

The table investigates the association of debt currency, with the legal environment. The dependent variables include the percentage of debt in the local currency, and the percentage of debt in USD as a foreign currency (i.e. zero for US firms). The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to Djankov et al. (2008b). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. Foreign Bank Lending, Non-US Foreign Bank Lending, and US Foreign Bank Lending indicate relative portion of total bank lending for each firm in each quarter that comes from, respectively, non-domestic lenders, non-domestic lenders that are not located in USA, and non-domestic lenders from USA. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (7) to (10) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Internet Appendix

A1 Appendix Figures

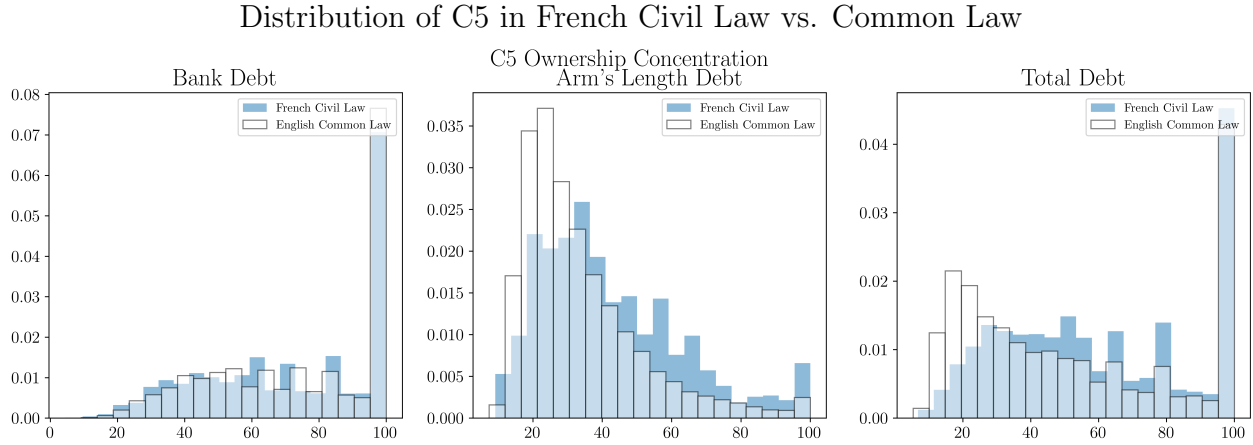


Figure A1: This figure displays the distribution of C5, separately for bank debt, arm's length debt, and total debt, comparing French civil law countries and English common law countries. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages.

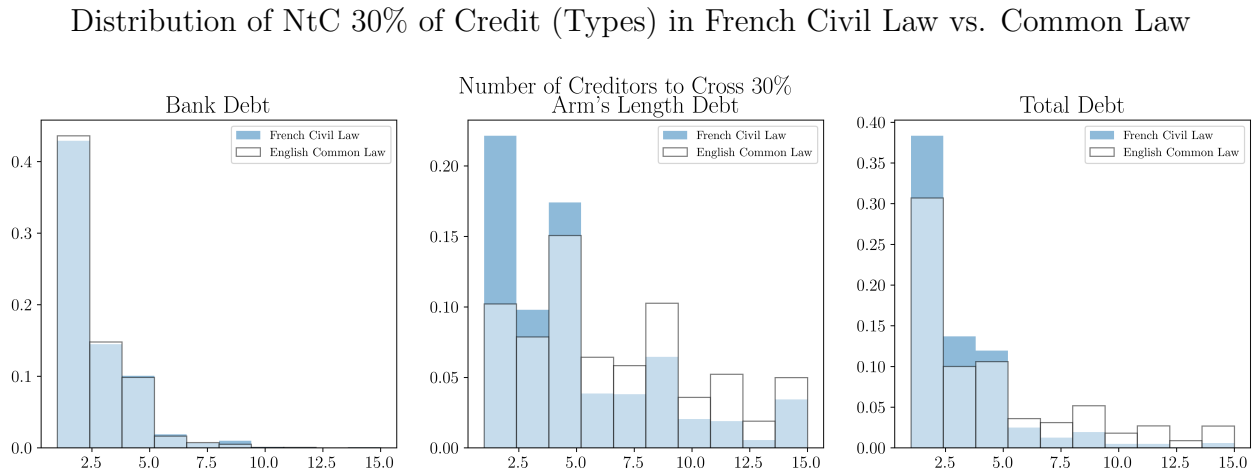


Figure A2: This figure displays the distribution of number of creditors to cross 30% of debt, separately for bank debt, arm's length debt, and total debt, comparing French civil law countries and English common law countries. Detailed variable definitions and sources are provided in Appendix Table A1. Averages are calculated over all years in the sample, and missing data are disregarded in calculating the averages. The last bin includes all observations exceeding the upper bin limit.

A2 Appendix Tables

Table A1: Variable Description and Sources

Variable	Description	Source
Total Debt		
Arm's length debt	The variable represents the total outstanding amount of senior bonds and notes, subordinated bonds and notes, and commercial papers, expressed as a percentage of the total debt. This calculation is based on the identified debt instruments in eMAXX. Additionally, we have access to a total sum provided by Capital IQ. When mentioning the total sum from Capital IQ, we explicitly refer to it as CIQ_Arm's length debt.	eMAXX, Capital IQ, Worldscope, Compustat, Amadeus
Bank debt	The variable represents the total outstanding amount of term loans and drawn lines of credit, expressed as a percentage of the total debt. This calculation is based on the identified debt instruments in Dealscan. Additionally, we have access to a total sum provided by Capital IQ. We also utilized the total sum from Capital IQ to deduce the proportion of total allocated credit drawn in each quarter. When mentioning the total sum from Capital IQ, we explicitly refer to it as CIQ_Bank debt.	Dealscan, Capital IQ, Worldscope, Compustat, Amadeus
Loans Observed	The variable represents the outstanding amount of term loans recorded in Dealscan for a quarter, expressed as a percentage of the total debt. It is calculated by subtracting the installments paid up to the respective quarter from the total loan amount issued. In cases where repayment schedules are missing in Dealscan, we assumed a homogeneous repayment rate for loans to align with the total amount of term loans recorded in Capital IQ. If the sum of term loans in Dealscan is less than the total in Capital IQ, we assumed a bullet payment at maturity for loans with missing repayment schedules.	Dealscan, Capital IQ, Worldscope, Compustat, Amadeus
Lines Observed	The variable represents the outstanding amount of drawn lines of credit recorded in Dealscan for a quarter, expressed as a percentage of the total debt. We assumed a homogeneous drawing rate for all outstanding lines of credit relative to the total drawn amount indicated in Capital IQ.	Dealscan, Capital IQ, Worldscope, Compustat, Amadeus

Continued

Table A1 – Continued

Variable	Description	Source
Identified Instruments	The variable represents the sum of the outstanding amount of arm's length debt in eMAXX and bank debt in Dealscan, expressed as a percentage of the total debt.	eMAXX, Dealscan, Capital IQ, Worldscope, Compustat, Amadeus
Total Debt Ownership Observed	The variable represents the sum of the observed debt ownership of arm's length debt in eMAXX and bank debt in Dealscan, expressed as a percentage of the total debt.	eMAXX, Dealscan, Capital IQ, Worldscope, Compustat, Amadeus
Num Creditors	The variable represents the count of owners of arm's length debt in eMAXX and lenders in Dealscan. It's worth noting that the lenders in Dealscan are assumed to be different from the eMAXX bondholders, as banks typically do not appear in eMAXX. Additionally, we have excluded a few securitized tranches of loans from Dealscan that were also present in eMAXX.	eMAXX, Dealscan
Herfindahl of Creditors Ownership	The variable represents the sum of squared fractional holdings of total creditors. These fractions are calculated w.r.t. the total ownerships observed for the respective firm in a quarter. This variable are defined only if the observed ownerships accounts for at least 30% of total debt.	eMAXX, Dealscan
C1, C3, C5, C10	The variable represents the ownership stake of the largest k creditors, where k is equal to 1, 3, 5, and 10, regardless of the type of debt instrument they hold. This stake is expressed as a percentage of the total ownerships observed for the respective firm in a quarter. These variables are defined only if the observed ownerships accounts for at least 30% of total debt.	eMAXX, Dealscan
Num to cross 10%, 20%, 30%	The variable represents the number of creditors needed to surpass the threshold of k% of the total ownerships observed, where k is equal to 10, 20, and 30. This calculation is irrespective of the type of debt instrument held by these creditors. These variables are defined only if the observed ownerships accounts for at least 30% of total debt.	eMAXX, Dealscan
Largest Creditor Type	The variable represents the institutional creditor type that appeared most frequently as the largest creditor of firm-quarter observations within a country.	eMAXX, Dealscan

Continued

Table A1 – Continued

Variable	Description	Source
Total Maturity of debt	The variable represents the weighted average maturity of all identified debt instruments, regardless of their type. Maturities are measured in years (365 days), and weights are determined by the USD equivalent of the outstanding amount of debt instruments.	eMAXX, Dealscan
Total Secured Debt %	The variable represents the percentage of total debt mentioned as secured in Capital IQ.	Capital IQ
Local Currency %	The variable represents the percentage of total debt issued in the local currency of the firm's registered address.	Capital IQ
USD, EUR, GBP, JPY, CAD, AUD, NZD, NOK, SEK, CHF, Other Currencies %	The variable represents the percentage of total debt issued in USD, EUR, GBP, JPY, CAD, AUD, NZD, NOK, SEK, CHF, or other currencies.	Capital IQ, Worldscope, Compustat, Amadeus
Arm's Length Debt		
Bonds Avg size USD m	The variable represents the average size of the outstanding amount of arm's length debt instruments with a positive amount outstanding in a quarter, measured in USD millions.	eMAXX
Bonds Outstanding PAR % of Total Debt	The variable represents the outstanding amount of arm's length debt as a percentage of the total debt. This is equivalent to the variable arm's length debt defined earlier.	eMAXX, Worldscope, Compustat, Amadeus
Bond Ownership Observed % of Outstanding PAR	The variable represents the percentage of the total outstanding amount of bonds in a quarter that we observe ownership of in our sample.	eMAXX
Num of Bond Issues	The variable represents the number of arm's length debt instruments with a positive amount outstanding in a quarter.	eMAXX
Num of Bondholders	The variable represents the number of distinct owners of arm's length debt instruments of a firm in a quarter, regardless of their stake size.	eMAXX
Herfindahl of Bondholders Ownership	The variable represents the sum of squared fractional holdings of total owners of arm's length debt. These fractions are calculated w.r.t. the total ownerships observed of all identified arm's length debt instruments in eMAXX. This variables are defined only if the observed ownerships accounts for at least 30% of total outstanding amount of arm's length debt.	eMAXX

Continued

Table A1 – Continued

Variable	Description	Source
C1, C3, C5, C10	The variable represents the ownership stake of the largest k owners of arm's length debt, where k is equal to 1, 3, 5, and 10, regardless of the instrument they hold. This stake is expressed as a percentage of the total ownerships observed of all identified arm's length debt instruments in the respective quarter. These variables are defined only if the observed ownerships accounts for at least 30% of total outstanding amount of arm's length debt.	eMAXX
Num to cross 10%, 20%, 30%	The variable represents the number of arm's length creditors needed to surpass the threshold of k% of the total ownerships observed, where k is equal to 10, 20, and 30. This calculation is irrespective of the type of debt instrument held by these creditors. These variables are defined only if the observed ownerships accounts for at least 30% of total outstanding amount of arm's length debt.	eMAXX
Largest Bondholder Type	The variable represents the institutional type of arm's length creditors that appeared most frequently as the largest arm's length creditor of firm-quarter observations within a country.	eMAXX
Maturity of arm's length debt	The variable represents the weighted average maturity of all identified arm's length debt instruments. Maturities are measured in years (365 days), and weights are determined by the USD equivalent of the outstanding amount of arm's length debt instruments.	eMAXX
Arm's length Secured Debt %	The variable represents the percentage of total arm's length debt mentioned as secured in Capital IQ.	Capital IQ
Bank Debt		
Num of Tranches (loans & lines)	The variable represents the number of term loans and lines of credit with a positive amount outstanding in a quarter.	Dealscan
Num of Loans	The variable represents the number of term loans with a positive amount outstanding in a quarter.	Dealscan
Num of Lines of Credit	The variable represents the number of lines of credit with a positive amount outstanding in a quarter.	Dealscan
Num Lenders	The variable represents the number of all distinct lenders that hold a positive fraction of Dealscan tranches with a positive amount outstanding in a quarter.	Dealscan

Continued

Table A1 – Continued

Variable	Description	Source
Num Lead Arrangers	The variable represents the number of all distinct lead arrangers of Dealscan tranches with a positive amount outstanding in a quarter.	Dealscan
Herfindahl of Lenders Amounts	The variable represents the sum of squared fractional holdings of total owners of bank debt. These fractions are calculated w.r.t. the total outstanding amount of all identified bank debt instruments in Dealscan.	Dealscan
C1, C3, C5, C10	The variable represents the ownership stake of the largest k lenders of bank debt, where k is equal to 1, 3, 5, and 10, regardless of the instrument they hold. This stake is expressed as a percentage of the total outstanding amount of all identified bank debt instruments in the respective quarter.	Dealscan
Num to cross 10%, 20%, 30%	The variable represents the number of bank lenders needed to surpass the threshold of k% of the total bank ownerships observed, where k is equal to 10, 20, and 30. This calculation is irrespective of the tranche type held by these lenders.	Dealscan
Largest Lender Type	The variable represents the institutional type of bank creditors that appeared most frequently as the largest bank creditor of firm-quarter observations within a country.	Dealscan
Maturity of bank debt	The variable represents the weighted average maturity of all identified bank debt instruments. Maturities are measured in years (365 days), and weights are determined by the USD equivalent of the outstanding amount of all bank debt instruments.	Dealscan
Bank Secured Debt %	The variable represents the percentage of total bank debt mentioned as secured in Capital IQ.	Capital IQ
Country Measures		
English Common-Law, French Civil-Law, German Civil-Law, and Scandinavian Civil-Law Legal Origin	Indicator variables that equal 1 if a countrys legal origin is English common law or the respective civil-law family, and 0 otherwise.	La Porta et al. (2008)
Ex Ante Control Index	The ex ante private control of self-dealing index, ranging from 0 to 1, encompasses (i) disclosures by the buyer and seller, and (ii) requirements for a positive independent review of the transaction and approval by disinterested shareholders.	Djankov et al. (2008b)

Continued

Table A1 – Continued

Variable	Description	Source
Ex Post Control Index	The ex post private control of self-dealing index, ranging from 0 to 1, captures (i) post-transaction legal provisions for holding the buyer and seller liable for bad faith, (ii) shareholders' ability to sue or rescind the transaction, (iii) shareholders' ability to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings.	Djankov et al. (2008b)
Anti Self Dealing Index	The variable represents the average of the ex ante and ex post control indexes, which ranges from 0 to 1.	Djankov et al. (2008b)
Creditor Rights Index	The creditor rights index ranges from 0 to 4. A score of 1 is assigned for each of the following secured lenders' rights defined in laws and regulations: (i) restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization, (ii) the ability of secured creditors to seize their collateral after the reorganization petition is approved (i.e., no automatic stay or asset freeze), (iii) the priority of secured creditors in being paid first out of the proceeds of liquidating a bankrupt firm, and (iv) management's loss of administration of the property pending the resolution of the reorganization. We use the last available value (as of 2003). This index is derived from Djankov et al. (2007) , who extend, revise, and update the original index compiled by La Porta et al. (1997, 1998) .	Djankov et al. (2007)
C1 Shareholders	Index of ownership concentration. The average percentage of voting rights held by the largest shareholder in each country, treating family members as one shareholder with aggregated voting rights.	Aminadav and Papaioannou (2020)
C3 Shareholders	Index of ownership concentration. The percentage of voting rights held by the three largest shareholders in each country, treating family members as one shareholder with aggregated voting rights.	Aminadav and Papaioannou (2020)
C5 Shareholders	Index of ownership concentration. The percentage of voting rights held by the five largest shareholders in each country, treating family members as one shareholder with aggregated voting rights.	Aminadav and Papaioannou (2020)
Days Contract Enforcement	The number of calendar days to enforce a contract of unpaid debt worth 50% of the country's GDP per capita as of January 2003.	Djankov et al. (2007)
Days Cheque Collection	Days to Collect a Bounced Cheque: The number of calendar days (total duration) to collect a bounced cheque through the court system.	Djankov et al. (2003)

Continued

Table A1 – Continued

Variable	Description	Source
Days Tenant Eviction	Days to Evict a Tenant: The number of calendar days (total duration) to evict a tenant for nonpayment of rent through the court system.	Djankov et al. (2003)
Days Start Business	The number of calendar days required, or common in practice, for an entrepreneur to start and formally operate an industrial or commercial business.	World Banks Doing Business (Starting a Business) database, which is based on Djankov et al. (2002)
Procedures to Start Business	The number of administrative procedures required by an entrepreneur to start and operate a business.	World Banks Doing Business (Starting a Business) database, which is based on Djankov et al. (2002)
Cost to Start Business	The direct costs (as a fraction of GDP per capita) to start up and formally operate a business.	World Banks Doing Business (Starting a Business) database, which is based on Djankov et al. (2002)
Employment laws	An index, which ranges from 0 to 1, that is the average of the following aspects of labor market legislation: (i) alternative employment contracts, (ii) cost of increasing hours worked (iii) cost of firing workers, and (iv) dismissal procedures.	Botero et al. (2004)
Collective relations	An index, which ranges from 0 to 1, that captures the average of the following aspects of collective relations laws: (i) Labor union power and (ii) collective disputes.	Botero et al. (2004)
Social security	An index, which ranges from 0 to 1, that captures social security benefits. It is the average of (i) old age, disability and death benefits, (ii) Sickness and health benefits, and (iii) unemployment benefits.	Botero et al. (2004)
Other Variables		
Firm Age	Number of years between the year of firm incorporation and the current year. We fill the missing firm ages with the average firm age in each country in each year.	Capital IQ

Continued

Table A1 – Continued

Variable	Description	Source
Firm Size	Book total assets in current USD million in a given year.	Worldscope, Compu- stat, Amadeus
GDP Per Capita	Gross Domestic Product per capita in current USD	World Bank and IMF
Geographic Region	Indicator variables that identify the geographic region in which the firm is located (based on its country of incorporation). There are six regions: Asia and Pacific, Western Europe & Northern Europe, Eastern Europe & Central Asia, North and Latin America and the Caribbean, Middle East & North Africa, and Sub-Saharan Africa. Similar to Aminadav and Papaioannou (2020) we aggregate North America with Latin America and the Caribbean.	World Bank
Industry	Indicator variables that identify the main industry in which each firm operates.	Worldscope, Compu- stat, Amadeus

Table A2: Country Level Measures

Country	Anti Self Dealing Index	Ex Ante Control Index	Ex Post Control Index	Creditor Rights
Australia	0.76	0.89	0.62	3.00
Bermuda	.	.	.	.
Canada	0.64	0.33	0.95	1.00
Cayman Islands	.	.	.	.
Guernsey	.	.	.	.
Hong Kong	0.96	1.00	0.93	4.00
India	0.58	0.33	0.82	2.00
Ireland	0.79	0.78	0.80	1.00
Israel	0.72	0.50	0.95	3.00
Jersey	.	.	.	.
Malaysia	0.95	1.00	0.90	3.00
New Zealand	0.95	1.00	0.90	4.00
Pakistan	0.41	0.17	0.65	1.00
Saudi Arabia	.	.	.	3.00
Singapore	1.00	1.00	1.00	3.00
South Africa	0.81	1.00	0.62	3.00
Thailand	0.81	1.00	0.62	2.00
United Arab Emirates	.	.	.	2.00
United Kingdom	0.95	1.00	0.90	4.00
United States	0.65	0.33	0.97	1.00
English Common Law	0.79	0.74	0.83	2.50
Denmark	0.46	0.25	0.68	3.00
Finland	0.46	0.14	0.78	1.00
Norway	0.42	0.42	0.42	2.00
Sweden	0.33	0.17	0.50	1.00
Scandinavian Civil Law	0.42	0.24	0.59	1.75
Austria	0.21	0.00	0.42	3.00
China	0.76	1.00	0.53	2.00
Germany	0.28	0.14	0.42	3.00
Japan	0.50	0.22	0.78	2.00
Poland	0.29	0.25	0.33	1.00
South Korea	0.47	0.25	0.69	3.00
Switzerland	0.27	0.08	0.45	1.00
Taiwan	0.56	0.42	0.71	2.00
German Civil Law	0.42	0.30	0.54	2.12
Argentina	0.34	0.33	0.35	1.00
Belgium	0.54	0.39	0.70	2.00
Brazil	0.27	0.22	0.33	1.00
Chile	0.62	0.50	0.75	2.00
Colombia	0.57	0.83	0.31	0.00
France	0.38	0.08	0.68	0.00
Greece	0.22	0.08	0.35	1.00
Indonesia	0.65	0.81	0.50	2.00
Italy	0.42	0.17	0.68	2.00
Kuwait	.	.	.	3.00
Luxembourg	0.28	0.17	0.40	.
Mexico	0.17	0.19	0.15	0.00
Netherlands	0.20	0.06	0.35	3.00
Oman	.	.	.	0.00
Peru	0.45	0.25	0.65	0.00
Philippines	0.22	0.06	0.38	1.00
Qatar	.	.	.	.
Russia	0.44	0.81	0.07	2.00
Spain	0.37	0.22	0.53	2.00
Turkey	0.43	0.33	0.53	2.00
French Civil Law	0.39	0.32	0.45	1.33
World	0.53	0.45	0.61	1.91

This table presents the main country-level measures of the legal environment across different countries. The composite Anti Self Dealing Index represents the average of the ex ante and ex post private control of self-dealing measures according to Djankov et al. (2008b). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. The Creditor Rights Index ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from Djankov et al. (2007), who extended, revised, and updated the original index compiled by La Porta et al. (1997, 1998). Please see Table A1 for variable definitions.

Table A3: Robustness: Number of Creditors and Legal Origin

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	All Creditors	All Creditors	All Creditors	All Creditors	Arm's Length Creditors	Arm's Length Creditors	Arm's Length Creditors	Arm's Length Creditors	Banks	Banks	Banks	Banks
French	-80.60** (38.44)	-69.97*** (22.97)	-71.27** (27.72)	-3.29 (20.42)	-84.57** (39.65)	-73.34*** (23.29)	-70.56** (27.50)	-5.53 (20.93)	3.97 (8.73)	3.37* (1.88)	-0.70 (1.32)	2.25** (1.04)
German	-59.78*** (5.34)	-26.76 (20.89)	-23.55 (47.66)	-23.70* (13.30)	-60.01*** (6.20)	-29.58 (19.94)	-24.53 (47.44)	-26.66** (12.98)	0.23 (1.76)	2.82* (1.53)	0.98 (0.71)	2.96** (1.24)
Scandinavian	-134.92*** (12.89)	-127.71*** (15.36)	-59.52 (46.51)	-41.66** (17.46)	-123.93*** (10.89)	-128.21*** (14.96)	-57.90 (46.76)	-40.23** (17.77)	-10.99*** (2.90)	0.50 (0.52)	-1.63*** (0.41)	-1.43** (0.55)
Log Assets	55.56*** (9.44)	93.82*** (19.75)	138.39*** (42.10)	36.88*** (10.75)	52.71*** (9.06)	91.57*** (20.12)	136.26*** (42.31)	33.98*** (10.83)	2.86*** (0.72)	2.25*** (0.40)	2.13*** (0.30)	2.91*** (0.36)
Log Age	13.95*** (4.44)	5.92 (4.04)	8.57 (11.90)	5.80 (5.15)	16.60*** (5.41)	6.43 (4.14)	9.52 (12.01)	6.55 (5.21)	-2.65** (1.27)	-0.52** (0.22)	-0.95*** (0.22)	-0.76** (0.34)
Log GDP per Capita	23.94*** (3.59)	21.14*** (5.65)	25.17** (9.90)	10.38** (4.81)	25.38*** (3.61)	22.38*** (5.76)	27.18*** (9.89)	11.23** (4.98)	-1.44 (0.86)	-1.24*** (0.31)	-2.01*** (0.55)	-0.85* (0.51)
Sample	2006Q1	2012Q1	2019Q1	Excl. US	2006Q1	2012Q1	2019Q1	Excl. US	2006Q1	2012Q1	2019Q1	Excl. US
Fixed effects	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q	I & Q
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.490	0.476	0.430	0.264	0.471	0.466	0.424	0.247	0.073	0.124	0.169	0.244
N	488	2109	2119	53771	488	2109	2119	53771	488	2109	2119	53771

This table provides additional robustness tests for the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment, as studied in Tables 9. Robustness tests include cross-sectional analyses in 2006Q1, 2012Q1, and 2019Q1, as well as a panel regression excluding all observations from the United States. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A4: Robustness: Number of Creditors, Investor Protection, and Size Heterogeneity

	(1) All Creditors	(2) All Creditors	(3) All Creditors	(4) All Creditors	(5) Arm's Length Creditors	(6) Arm's Length Creditors	(7) Arm's Length Creditors	(8) Arm's Length Creditors	(9) Banks	(10) Banks	(11) Banks	(12) Banks
SizeGroup=0 $\times$ Anti Self Dealing Index	434.67*** (151.64)	644.07*** (220.64)	1186.48** (451.54)	337.78*** (113.82)	422.06** (162.73)	646.97*** (224.60)	1180.71** (455.13)	332.14*** (113.54)	12.61 (13.73)	-2.90 (5.54)	5.78 (5.56)	5.64 (3.54)
SizeGroup=1 $\times$ Anti Self Dealing Index	195.96** (71.76)	308.08*** (102.11)	480.99*** (174.42)	187.72*** (66.30)	185.08** (80.85)	314.88*** (104.63)	479.83*** (177.11)	187.18*** (66.55)	10.88 (14.75)	-6.80 (4.38)	1.17 (3.92)	0.54 (2.31)
SizeGroup=2 $\times$ Anti Self Dealing Index	41.53 (39.06)	87.85** (43.38)	94.46 (73.75)	63.42** (31.18)	34.64 (41.24)	92.32** (43.36)	94.44 (74.39)	66.56** (30.91)	6.90 (6.10)	-4.47 (3.37)	0.01 (2.42)	-3.13* (1.72)
SizeGroup=3 $\times$ Anti Self Dealing Index	15.48 (32.45)	25.66 (46.20)	-13.57 (83.91)	-3.99 (17.81)	12.85 (35.88)	31.07 (45.39)	-14.22 (84.02)	-0.82 (17.71)	2.63 (5.88)	-5.41 (3.48)	0.65 (2.03)	-3.17* (1.58)
Log Assets	89.01*** (22.65)	135.26*** (39.04)	194.51*** (66.82)	59.32*** (15.97)	85.26*** (23.68)	133.07*** (39.78)	192.30*** (67.45)	56.07*** (16.26)	3.75** (1.35)	2.19*** (0.79)	2.21*** (0.78)	3.24*** (0.53)
Log Age	7.11** (2.88)	0.78 (3.11)	4.30 (9.08)	1.01 (4.23)	9.93*** (3.40)	1.24 (3.18)	5.19 (9.14)	1.72 (4.23)	-2.82** (1.08)	-0.45** (0.22)	-0.89*** (0.19)	-0.71** (0.34)
Log GDP per Capita	3.92 (4.55)	0.83 (8.56)	-11.89 (17.19)	-2.15 (4.51)	5.16 (4.27)	1.89 (8.34)	-10.25 (17.15)	-1.05 (4.27)	-1.25 (1.29)	-1.06* (0.53)	-1.64** (0.67)	-1.10** (0.51)
Sample	2006Q1	2012Q1	2019Q1	Excl. US	2006Q1	2012Q1	2019Q1	Excl. US	2006Q1	2012Q1	2019Q1	Excl. US
Fixed effects	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.569	0.544	0.497	0.348	0.554	0.534	0.491	0.333	0.087	0.121	0.170	0.249
N	485	2063	2080	51430	485	2063	2080	51430	485	2063	2080	51430

This table provides additional robustness tests for the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment, as studied in Tables 9. Robustness tests include cross-sectional analyses in 2006Q1, 2012Q1, and 2019Q1, as well as a panel regression excluding all observations from the United States. The key explanatory variables is the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to Djankov et al. (2008b). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification), continental fixed effects based on the World Bank's regional classification, and year $\times$ quarter fixed effects. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A5: Robustness: Creditor Concentration- Number to Cross 30%

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) All Creditors	(5) Arm's Length Creditors	(6) Banks	(7) All Creditors	(8) Arm's Length Creditors	(9) Banks
French	-0.88*** (0.24)	-0.77* (0.40)	0.10 (0.08)						
German	-0.67 (0.42)	-2.26** (1.11)	-0.03 (0.26)						
Scandinavian	-1.48*** (0.16)	-0.28 (0.46)	-0.42*** (0.05)						
Anti Self Dealing Index				0.19 (0.35)	0.64 (0.75)	-0.21 (0.23)			
SizeGroup=0 $\times$ Anti Self Dealing Index							6.40*** (1.75)	15.21*** (2.25)	0.20 (0.53)
SizeGroup=1 $\times$ Anti Self Dealing Index							2.06*** (0.69)	5.01*** (0.66)	-0.46 (0.37)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.26 (0.42)	1.66** (0.70)	-0.29 (0.24)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.32 (0.46)	0.64 (0.77)	-0.15 (0.23)
Log Assets	1.36*** (0.27)	2.32*** (0.10)	0.45*** (0.05)	1.35*** (0.27)	2.32*** (0.10)	0.44*** (0.06)	1.63*** (0.37)	2.56*** (0.15)	0.43*** (0.05)
Log Age	0.08* (0.04)	-0.21*** (0.04)	-0.04* (0.02)	0.05* (0.03)	-0.23*** (0.02)	-0.05* (0.02)	0.02 (0.03)	-0.22*** (0.02)	-0.05** (0.02)
Log GDP per Capita	0.29** (0.11)	0.70*** (0.26)	0.02 (0.05)	0.14 (0.10)	0.77*** (0.25)	-0.07 (0.07)	0.02 (0.13)	0.71*** (0.24)	-0.07 (0.07)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All
Adj. R2	0.470	0.543	0.239	0.485	0.547	0.243	0.509	0.555	0.246
N	127172	48221	105958	124831	47819	103825	124831	47819	103825

This table investigates the association between ownership dispersion, measured by the minimum number of different types of creditors to cross the 30% in ownership, in their debt type (all, arm's length debt, or bank debt) with the legal environment. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A6: Creditor Concentration- C10

	(1) C10 Creditors	(2) C10 Arm's	(3) C10 Bank	(4) C10 Creditors	(5) C10 Arm's	(6) C10 Bank	(7) C10 Creditors	(8) C10 Arm's	(9) C10 Bank
French	7.05*** (2.23)	4.38* (2.52)	-0.90 (0.94)						
German	8.12** (3.88)	22.53** (9.75)	-0.98 (2.17)						
Scandinavian	12.67*** (1.80)	10.52*** (2.34)	2.74*** (0.37)						
Anti Self Dealing Index				-0.84 (2.96)	-12.61** (5.63)	2.49 (2.21)			
SizeGroup=0 $\times$ Anti Self Dealing Index							-28.75*** (10.44)	-3.76 (10.27)	-11.05** (4.35)
SizeGroup=1 $\times$ Anti Self Dealing Index							0.03 (8.60)	-0.67 (6.78)	0.32 (3.55)
SizeGroup=2 $\times$ Anti Self Dealing Index							3.18 (4.70)	-7.75 (6.11)	2.79 (2.60)
SizeGroup=3 $\times$ Anti Self Dealing Index							-4.11 (3.83)	-13.12** (5.88)	1.81 (2.41)
Log Assets	-11.10*** (1.50)	-10.65*** (0.15)	-4.68*** (0.43)	-10.99*** (1.56)	-10.72*** (0.10)	-4.62*** (0.46)	-11.05*** (1.21)	-9.76*** (0.39)	-5.11*** (0.43)
Log Age	-1.37*** (0.33)	0.01 (0.21)	0.40* (0.22)	-1.16*** (0.34)	0.18 (0.12)	0.37* (0.21)	-1.03*** (0.32)	0.24* (0.13)	0.42* (0.21)
Log GDP per Capita	-2.00** (0.94)	-3.96* (2.06)	0.70 (0.48)	0.13 (0.89)	-1.93 (1.68)	1.06 (0.64)	0.29 (1.01)	-2.22 (1.75)	1.27* (0.66)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All
Adj. R2	0.566	0.569	0.248	0.588	0.578	0.246	0.605	0.582	0.254
N	127172	48221	105958	124831	47819	103825	124831	47819	103825

The table investigates the association of ownership dispersion, measured by the ownership stake of largest ten creditors, in their debt type (all, arm's length debt, or bank debt) with the legal environment. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A7: Creditor Concentration- HHI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	HHI	HHI	HHI	HHI	HHI	HHI	HHI	HHI	HHI
	Total	Arm's	Bank	Total	Arm's	Bank	Total	Arm's	Bank
French	-0.00 (0.02)	0.01 (0.02)	-0.02 (0.02)						
German	-0.04 (0.04)	0.23** (0.10)	-0.07* (0.04)						
Scandinavian	0.04* (0.02)	0.01 (0.01)	0.05** (0.02)						
Anti Self Dealing Index				0.07** (0.03)	-0.11* (0.06)	0.07** (0.03)			
SizeGroup=0 $\times$ Anti Self Dealing Index							0.47** (0.20)	0.42** (0.17)	0.44*** (0.16)
SizeGroup=1 $\times$ Anti Self Dealing Index							0.25*** (0.07)	0.07 (0.06)	0.22*** (0.05)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.10*** (0.03)	-0.09 (0.06)	0.09** (0.03)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.07** (0.03)	-0.11* (0.06)	0.07** (0.03)
Log Assets	-0.08*** (0.01)	-0.03*** (0.00)	-0.07*** (0.01)	-0.08*** (0.01)	-0.03*** (0.00)	-0.07*** (0.01)	-0.05*** (0.01)	-0.02*** (0.00)	-0.05*** (0.01)
Log Age	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.01)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.01)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.01)
Log GDP per Capita	-0.00 (0.01)	-0.02 (0.02)	0.01 (0.01)	0.00 (0.01)	0.01 (0.02)	0.00 (0.01)	-0.01 (0.01)	0.01 (0.02)	-0.01 (0.01)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All
Adj. R2	0.323	0.244	0.215	0.329	0.258	0.214	0.356	0.284	0.238
N	127172	48221	105958	124831	47819	103825	124831	47819	103825

The table investigates the association of ownership dispersion, measured by HerfindahlHirschman index in their debt type (all, arm's length debt, or bank debt) with the legal environment. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A8: Leverage and Debt Composition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Leverage	Arm's length Debt % Total Assets	Bank Debt % Total Assets	Leverage	Arm's length Debt % Total Assets	Bank Debt % Total Assets	Leverage	Arm's length Debt % Total Assets	Bank Debt % Total Assets
French	0.00 (0.02)	-5.20*** (1.56)	5.06*** (1.82)						
German	-0.04* (0.02)	-6.69*** (1.28)	3.37*** (0.99)						
Scandinavian	0.02 (0.02)	-4.70*** (1.63)	6.53*** (0.98)						
Anti Self Dealing Index				-0.05* (0.03)	-0.30 (1.31)	-4.78** (1.97)			
SizeGroup=0 × Anti Self Dealing Index							-0.12 (0.07)	0.22 (6.19)	-11.57*** (3.06)
SizeGroup=1 × Anti Self Dealing Index							-0.11** (0.05)	-5.45 (4.65)	-5.11** (2.30)
SizeGroup=2 × Anti Self Dealing Index							-0.06* (0.03)	-2.05 (1.99)	-3.41 (2.62)
SizeGroup=3 × Anti Self Dealing Index							-0.05* (0.03)	0.82 (1.38)	-5.80*** (1.78)
Log Assets	0.00 (0.00)	3.15*** (0.48)	-3.26*** (0.43)	0.00 (0.00)	3.08*** (0.50)	-3.27*** (0.41)	-0.01 (0.00)	2.51*** (0.41)	-3.27*** (0.33)
Log Age	-0.02*** (0.00)	0.64*** (0.20)	-2.35*** (0.42)	-0.02*** (0.00)	0.45*** (0.14)	-2.17*** (0.32)	-0.02*** (0.00)	0.44*** (0.14)	-2.14*** (0.33)
Log GDP per Capita	-0.00 (0.01)	2.11*** (0.63)	-2.19** (1.04)	-0.01 (0.01)	0.63 (0.38)	-1.69* (0.87)	-0.01 (0.01)	0.82 (0.52)	-1.65* (0.90)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Sample	All	All	All	All	All	All	All	All	All
A dj. R2	0.156	0.282	0.258	0.159	0.316	0.267	0.161	0.321	0.270
N	127172	127172	127172	124831	124831	124831	124831	124831	124831

The table investigates the association of book leverage and similar other broad capital structure variables with the legal environment. Book leverage is defined as the ratio of total debt to total assets. Other variables have clear definition in the column headers. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A9: Debt Structure and Legal (Courts) Formalism

	(1) Number of Creditors	(2) Number of Creditors	(3) Number of Creditors	(4) NtC 30%	(5) NtC 30%	(6) NtC 30%	(7) Secured Debt. (%)	(8) Secured Debt. (%)	(9) Secured Debt. (%)	(10) Debt Maturity	(11) Debt Maturity	(12) Debt Maturity	(13) Debt in Local Currency %	(14) Debt in Local Currency %	(15) Debt in Local Currency %
Log Days Contract Enforcement	4.13 (13.62)			0.23 (0.24)			9.70 (6.60)			-0.33* (0.17)			-4.76 (6.17)		
Log Days Cheque Collection		-16.74** (7.00)			-0.16 (0.13)			-0.26 (2.43)			-0.41*** (0.08)			-11.96*** (3.20)	
Log Days Tenant Eviction			6.29 (10.69)			0.03 (0.17)			-14.75*** (3.02)			0.13 (0.18)			3.00 (4.75)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.448	0.448	0.447	0.483	0.482	0.482	0.272	0.267	0.285	0.361	0.361	0.358	0.243	0.278	0.229
N	125746	126321	126321	125746	126321	126321	124697	125254	125254	125746	126321	126321	124697	125254	125254

This table associates creditor dispersion and debt security level, maturity, and currency with proxies for court (legal) formalism. Days contract enforcement describes the number of calendar days to enforce a contract of unpaid debt worth 50% of the countrys GDP per capita as of January 2003. The variable comes from [Djankov et al. \(2007\)](#). Days Cheque Collection is the number of calendar days (total duration) to collect a bounced cheque through the court system. Days Tenant Eviction is the number of calendar days (total duration) to evict a tenant for nonpayment of rent through the court system. These two variables are sources from [Djankov et al. \(2003\)](#). All specifications incorporate industry fixed effects (two-digit SIC classification), continental fixed effects based on the World Bank's regional classification, and year $\times$ quarter fixed effects. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A10: Debt Structure and Entry Market Regulation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Number of Creditors	Number of Creditors	Number of Creditors	NtC 30%	NtC 30%	NtC 30%	Secured Debt (%)	Secured Debt (%)	Secured Debt (%)	Debt Maturity	Debt Maturity	Debt Maturity	Debt in Local Currency %	Debt in Local Currency %	Debt in Local Currency %
Log Days Start Business	7.15 (9.17)			0.11 (0.11)			-8.10** (2.30)			0.09 (0.15)			6.80 (4.48)		
Log Procedures to Start Business		18.09 (15.67)			0.13 (0.24)			-16.96*** (5.93)			0.35 (0.23)			19.06** (7.56)	
Cost Start Business			-94.48 (68.32)			-1.76 (1.20)			-25.59 (24.42)			-0.11 (0.87)			-20.36 (32.90)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.449	0.449	0.449	0.486	0.485	0.486	0.277	0.283	0.267	0.362	0.362	0.362	0.259	0.286	0.245
N	124538	124538	124538	124538	124538	124538	123500	123500	123500	124538	124538	124538	123500	123500	123500

This table associates creditor dispersion and debt security level, maturity, and currency with proxies for entry regulation. The key explanatory variables capture red tape and barriers to entry in 2006. They reect (i) the log of the number of calendar days required, or common in practice, for an entrepreneur to start up and formally operate an industrial or commercial business, (ii) the log of the number of administrative procedures required by an entrepreneur to start up and operate a business, and (iii) the direct costs (as a fraction of GDP per capita) to start up and formally operate a business. These variables are retrieved from the World Banks Doing Business database and are based on [Djankov et al. \(2002\)](#). All specifications incorporate industry fixed effects (two-digit SIC classification), continental fixed effects based on the World Bank's regional classification, and year $\times$ quarter fixed effects. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A11: Debt Structure and Labor Market Regulation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Number of Creditors	Number of Creditors	Number of Creditors	N/C 30%	N/C 30%	N/C 30%	Secured Debt (%)	Secured Debt (%)	Secured Debt (%)	Debt Maturity	Debt Maturity	Debt Maturity	Debt in Local Currency %	Debt in Local Currency %	Debt in Local Currency %
Employment laws	-18.63 (50.74)			0.55 (0.94)			6.22 (22.21)			-1.37** (0.61)			-12.40 (21.54)		
Collective relations		-56.93 (42.93)			-1.22 (0.84)			-63.85*** (13.34)			-0.10 (0.55)			16.15 (19.61)	
Social security			-81.29 (81.14)			-0.21 (1.40)			-14.98 (19.59)			-1.62 (1.09)			-39.51 (46.35)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.449	0.449	0.449	0.485	0.486	0.485	0.266	0.288	0.267	0.363	0.362	0.362	0.245	0.246	0.252
N	124538	124538	124538	124538	124538	124538	123500	123500	123500	124538	124538	124538	123500	123500	123500

This table associates creditor dispersion and debt security level, maturity, and currency with proxies for labor market regulation. The employment laws index, which ranges from 0 to 1, captures the following aspects of labor market legislation: (i) alternative employment contracts, (ii) cost of increasing hours worked, (iii) cost of firing workers, and (iv) dismissal procedures. The collective relations index, which ranges from 0 to 1, captures labor union power and collective disputes. The social security index, which ranges from 0 to 1, measures social security benefits. It is the average of (i) old age, disability, and death benefits, (ii) sickness and health benefits, and (iii) unemployment benefits. All variables have come from [Botero et al. \(2004\)](#). All specifications incorporate industry fixed effects (two-digit SIC classification), continental fixed effects based on the World Bank's regional classification, and year $\times$ quarter fixed effects. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A12: Debt Structure and Shareholders' Concentration

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Number of Creditors	Number of Creditors	Number of Creditors	NtC 30%	NtC 30%	NtC 30%	Secured Debt (%)	Secured Debt (%)	Secured Debt (%)	Debt Maturity	Debt Maturity	Debt Maturity	Debt in Local Currency %	Debt in Local Currency %	Debt in Local Currency %
C1 Shareholders	-2.27*** (0.78)			-0.04** (0.02)			-0.72*** (0.19)			-0.04*** (0.01)			-0.46 (0.36)		
C3 Shareholders		-1.98** (0.75)			-0.03** (0.01)			-0.48** (0.18)			-0.04*** (0.01)			-0.34 (0.30)	
C5 Shareholders			-1.85** (0.79)			-0.03* (0.02)			-0.41** (0.20)			-0.04*** (0.01)			-0.23 (0.32)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.450	0.449	0.449	0.486	0.485	0.484	0.276	0.271	0.269	0.363	0.363	0.363	0.247	0.243	0.241
N	126083	126083	126083	126083	126083	126083	125015	125015	125015	126083	126083	126083	125015	125015	125015

This table associates creditor dispersion and debt security level, maturity, and currency with proxies for share ownership concentration. C1, C3, and C5 for shareholders are the average ownership concentration measures (reflecting the voting rights of the one, three, and five largest shareholders) in each country. These variables are as of 2012 and come from [Aminadav and Papaioannou \(2020\)](#). All specifications incorporate industry fixed effects (two-digit SIC classification), continental fixed effects based on the World Bank's regional classification, and year $\times$ quarter fixed effects. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

A3 Robustness cross sectional regressions in individual years

Table A13: Number of Creditors - 2006Q1

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) Lead Arrangers	(5) All Creditors	(6) Arm's Length Creditors	(7) Banks	(8) Lead Arrangers	(9) All Creditors	(10) Arm's Length Creditors	(11) Banks	(12) Lead Arrangers
French	-80.60* (38.44)	-84.57* (39.65)	3.97 (8.73)	1.99 (2.81)								
German	-59.78*** (5.34)	-60.01*** (6.20)	0.23 (1.76)	-0.02 (0.43)								
Scandinavian	-134.92*** (12.89)	-123.93*** (10.89)	-10.99*** (2.90)	-1.07* (0.48)								
Anti Self Dealing Index					47.84 (24.52)	42.98 (26.29)	4.85 (6.11)	3.60*** (0.90)				
SizeGroup=0 × Anti Self Dealing Index									434.67** (151.64)	422.06* (162.73)	12.61 (13.73)	5.47* (2.58)
SizeGroup=1 × Anti Self Dealing Index									195.96* (71.76)	185.08* (80.85)	10.88 (14.75)	4.84** (1.39)
SizeGroup=2 × Anti Self Dealing Index									41.53 (39.06)	34.64 (41.24)	6.90 (6.10)	3.83*** (0.83)
SizeGroup=3 × Anti Self Dealing Index									15.48 (32.45)	12.85 (35.88)	2.63 (5.88)	3.23** (1.08)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.490	0.471	0.073	0.149	0.510	0.495	0.091	0.244	0.569	0.554	0.087	0.244
N	488	488	488	488	485	485	485	485	485	485	485	485

This table investigates the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment on the cross-section of 2006Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (5) to (12) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A14: Number of Creditors - 2012Q1

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) Lead Arrangers	(5) All Creditors	(6) Arm's Length Creditors	(7) Banks	(8) Lead Arrangers	(9) All Creditors	(10) Arm's Length Creditors	(11) Banks	(12) Lead Arrangers
French	-69.97*** (22.97)	-73.34*** (23.29)	3.37* (1.88)	2.76** (1.14)								
German	-26.76 (20.89)	-29.58 (19.94)	2.82* (1.53)	1.82 (1.36)								
Scandinavian	-127.71*** (15.36)	-128.21*** (14.96)	0.50 (0.52)	3.92*** (1.10)								
Anti Self Dealing Index					38.76 (39.51)	43.79 (38.87)	-5.02 (3.33)	-0.88 (2.19)				
SizeGroup=0 × Anti Self Dealing Index									644.07*** (220.64)	646.97*** (224.60)	-2.90 (5.54)	0.34 (2.60)
SizeGroup=1 × Anti Self Dealing Index									308.08*** (102.11)	314.88*** (104.63)	-6.80 (4.38)	-1.01 (2.23)
SizeGroup=2 × Anti Self Dealing Index									87.85** (43.38)	92.32** (43.36)	-4.47 (3.37)	-0.94 (2.13)
SizeGroup=3 × Anti Self Dealing Index									25.66 (46.20)	31.07 (45.39)	-5.41 (3.48)	-0.82 (2.25)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.476	0.466	0.124	0.169	0.488	0.478	0.120	0.192	0.544	0.534	0.121	0.192
N	2109	2109	2109	2109	2063	2063	2063	2063	2063	2063	2063	2063

This table investigates the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment on the cross-section of 2012Q1. The key explanatory variables include legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (5) to (12) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A15: Number of Creditors - 2019Q1

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) Lead Arrangers	(5) All Creditors	(6) Arm's Length Creditors	(7) Banks	(8) Lead Arrangers	(9) All Creditors	(10) Arm's Length Creditors	(11) Banks	(12) Lead Arrangers
French	-71.27** (27.72)	-70.56** (27.50)	-0.70 (1.32)	2.37** (0.90)					1186.48** (451.54)	1180.71** (455.13)	5.78 (5.56)	4.53 (3.04)
German	-23.55 (47.66)	-24.53 (47.44)	0.98 (0.71)	0.24 (0.94)					480.99*** (174.42)	479.83*** (177.11)	1.17 (3.92)	1.42 (2.18)
Scandinavian	-59.52 (46.51)	-57.90 (46.76)	-1.63*** (0.41)	1.15*** (0.38)					94.46 (73.75)	94.44 (74.39)	0.01 (2.42)	0.99 (1.54)
Anti Self Dealing Index					0.45 (53.19)	0.18 (53.21)	0.27 (1.95)	0.80 (1.42)				
SizeGroup=0 × Anti Self Dealing Index												
SizeGroup=1 × Anti Self Dealing Index												
SizeGroup=2 × Anti Self Dealing Index												
SizeGroup=3 × Anti Self Dealing Index												
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.430	0.424	0.169	0.168	0.440	0.435	0.169	0.171	0.497	0.491	0.170	0.172
N	2119	2119	2119	2119	2080	2080	2080	2080	2080	2080	2080	2080

This table investigates the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment on the cross-section of 2019Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (5) to (12) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A16: Creditor Concentration- Number to Cross 30% - 2006Q1

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) All Creditors	(5) Arm's Length Creditors	(6) Banks	(7) All Creditors	(8) Arm's Length Creditors	(9) Banks
French	-0.94 (0.99)	-1.13 (0.93)	-0.10 (0.45)						
German	-1.28*** (0.23)		-0.38 (0.26)						
Scandinavian	-0.45 (0.38)	0.36 (0.20)							
Anti Self Dealing Index				-0.03 (1.21)	-1.49 (1.54)	0.06 (1.16)			
SizeGroup=0 $\times$ Anti Self Dealing Index							4.84*** (1.29)		1.03 (1.30)
SizeGroup=1 $\times$ Anti Self Dealing Index							1.39 (1.07)	1.49 (2.47)	-0.02 (1.24)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.11 (1.03)	-0.64 (2.09)	0.18 (1.12)
SizeGroup=3 $\times$ Anti Self Dealing Index							-0.46 (1.05)	-1.55 (1.80)	-0.01 (1.18)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.459	0.482	0.236	0.473	0.479	0.236	0.491	0.476	0.233
N	488	166	391	485	165	389	485	165	389

This table investigates the association between ownership dispersion, measured by the minimum number of different types of creditors to cross the 30% in ownership, in their debt type (all, arm's length debt, or bank debt) with the legal environment on the cross-section of 2006Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A17: Creditor Concentration- Number to Cross 30% - 2012Q1

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) All Creditors	(5) Arm's Length Creditors	(6) Banks	(7) All Creditors	(8) Arm's Length Creditors	(9) Banks
French	-0.56 (0.37)	-0.40 (0.67)	0.51*** (0.18)						
German	-0.50 (0.50)	-2.63 (1.93)	0.05 (0.30)						
Scandinavian	-1.69*** (0.32)	-2.87*** (0.44)	-0.15 (0.19)						
Anti Self Dealing Index				0.12 (0.66)	-0.37 (1.58)	-0.48 (0.34)			
SizeGroup=0 $\times$ Anti Self Dealing Index							5.97*** (1.98)		-0.12 (0.65)
SizeGroup=1 $\times$ Anti Self Dealing Index							1.93* (1.01)	3.28** (1.38)	-0.75 (0.45)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.21 (0.69)	0.74 (1.43)	-0.59 (0.36)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.22 (0.72)	-0.68 (1.50)	-0.40 (0.34)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.489	0.538	0.243	0.504	0.543	0.253	0.525	0.552	0.255
N	2109	826	1714	2063	813	1675	2063	813	1675

This table investigates the association between ownership dispersion, measured by the minimum number of different types of creditors to cross the 30% in ownership, in their debt type (all, arm's length debt, or bank debt) with the legal environment on the cross-section of 2012Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A18: Creditor Concentration- Number to Cross 30% - 2019Q1

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) All Creditors	(5) Arm's Length Creditors	(6) Banks	(7) All Creditors	(8) Arm's Length Creditors	(9) Banks
French	-1.01*** (0.34)	-0.15 (1.08)	-0.06 (0.14)						
German	-0.75 (0.51)	-2.14 (1.50)	-0.18 (0.20)						
Scandinavian	-1.15*** (0.42)	0.73 (0.93)	-0.71*** (0.11)						
Anti Self Dealing Index				0.64 (0.44)	0.17 (1.82)	-0.07 (0.20)			
SizeGroup=0 $\times$ Anti Self Dealing Index							8.00*** (2.09)	21.29*** (5.17)	1.38*** (0.49)
SizeGroup=1 $\times$ Anti Self Dealing Index							2.37*** (0.76)	1.83 (2.80)	-0.04 (0.42)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.27 (0.54)	-0.70 (1.93)	-0.12 (0.20)
SizeGroup=3 $\times$ Anti Self Dealing Index							1.17** (0.56)	0.57 (1.92)	0.04 (0.21)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.429	0.433	0.212	0.439	0.431	0.219	0.465	0.433	0.226
N	2119	871	1777	2080	864	1739	2080	864	1739

This table investigates the association between ownership dispersion, measured by the minimum number of different types of creditors to cross the 30% in ownership, in their debt type (all, arm's length debt, or bank debt) with the legal environment on the cross-section of 2019Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A19: Secured Debt - 2006Q1

	(1) Total Secured Debt	(2) Secured Arm's Length Debt	(3) Secured Bank Debt	(4) Total Secured Debt	(5) Secured Arm's Length Debt	(6) Secured Bank Debt	(7) Total Secured Debt	(8) Secured Arm's Length Debt	(9) Secured Bank Debt
French	-7.26 (13.52)	-0.54 (3.34)	-5.85 (11.22)						
German	-33.06*** (5.47)	-3.98*** (1.03)	-27.47*** (4.91)						
Scandinavian	-20.70*** (3.29)	-4.11** (1.65)	-16.81*** (3.13)						
CR				3.19 (2.50)	-0.07 (0.48)	1.97 (2.15)			
SizeGroup=0 $\times$ CR							-5.91 (5.52)	-0.16 (1.75)	-5.82 (3.72)
SizeGroup=1 $\times$ CR							3.32 (3.95)	0.27 (1.15)	2.13 (4.08)
SizeGroup=2 $\times$ CR							-0.53 (2.41)	-0.04 (0.61)	-1.24 (2.21)
SizeGroup=3 $\times$ CR							5.62** (2.53)	-0.13 (0.58)	4.07 (2.48)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.234	0.119	0.253	0.253	0.125	0.269	0.261	0.119	0.275
N	486	486	486	483	483	483	483	483	483

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment on the cross-section of 2006Q1. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil law, German civil law, and Scandinavian civil law countries, respectively, with common law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). SizeGroup includes the quartile of firms' size (total assets in USD) within the unrestricted sample of firms in that country. All specifications incorporate industry fixed effects using two-digit SIC classifications and year $\times$ quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A20: Secured Debt - 2012Q1

	(1) Total Secured Debt	(2) Secured Arm's Length Debt	(3) Secured Bank Debt	(4) Total Secured Debt	(5) Secured Arm's Length Debt	(6) Secured Bank Debt	(7) Total Secured Debt	(8) Secured Arm's Length Debt	(9) Secured Bank Debt
French	-21.07*** (4.81)	-4.31*** (1.09)	-16.82*** (4.97)						
German	-28.64*** (5.79)	-3.76*** (0.83)	-25.96*** (5.56)						
Scandinavian	-17.86* (9.08)	-4.26*** (1.17)	-13.66 (8.35)						
CR				6.14*** (1.89)	0.66* (0.38)	5.39** (2.01)			
SizeGroup=0 × CR							-13.68*** (4.04)	-1.10 (1.60)	-12.19** (4.53)
SizeGroup=1 × CR							0.76 (2.61)	-0.21 (0.84)	0.66 (2.80)
SizeGroup=2 × CR							4.60** (1.83)	1.39** (0.66)	3.33** (1.62)
SizeGroup=3 × CR							7.50*** (1.95)	0.20 (0.46)	7.04*** (2.31)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.309	0.100	0.342	0.304	0.104	0.336	0.316	0.107	0.347
N	2104	2104	2104	2080	2080	2080	2080	2080	2080

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment on the cross-section of 2012Q1. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil law, German civil law, and Scandinavian civil law countries, respectively, with common law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). SizeGroup includes the quartile of firms' size (total assets in USD) within the unrestricted sample of firms in that country. All specifications incorporate industry fixed effects using two-digit SIC classifications and year × quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A21: Secured Debt - 2019Q1

	(1) Total Secured Debt	(2) Secured Arm's Length Debt	(3) Secured Bank Debt	(4) Total Secured Debt	(5) Secured Arm's Length Debt	(6) Secured Bank Debt	(7) Total Secured Debt	(8) Secured Arm's Length Debt	(9) Secured Bank Debt
French	-21.02*** (4.79)	3.01 (2.02)	-23.10*** (4.53)						
German	-37.14*** (7.57)	-1.01 (0.96)	-33.54*** (5.96)						
Scandinavian	-27.08*** (6.72)	5.57*** (1.99)	-36.56*** (7.46)						
CR				6.96** (2.78)	-1.09 (0.76)	9.24*** (3.15)			
SizeGroup=0 × CR							-13.16*** (4.69)	-1.33 (0.92)	-7.77 (4.65)
SizeGroup=1 × CR							3.57 (2.84)	-1.61* (0.95)	7.79** (3.70)
SizeGroup=2 × CR							6.47* (3.51)	-1.08 (0.89)	9.07** (3.57)
SizeGroup=3 × CR							7.49** (2.83)	-1.08 (0.77)	9.50*** (3.30)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.302	0.120	0.319	0.281	0.118	0.292	0.294	0.117	0.302
N	2108	2108	2108	2078	2078	2078	2078	2078	2078

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment on the cross-section of 2019Q1. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil law, German civil law, and Scandinavian civil law countries, respectively, with common law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). SizeGroup includes the quartile of firms' size (total assets in USD) within the unrestricted sample of firms in that country. All specifications incorporate industry fixed effects using two-digit SIC classifications and year × quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A22: Debt Maturity - 2006Q1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt
French	-3.17*** (1.08)	-2.67 (2.78)	-1.15* (0.64)						
German	-2.19*** (0.30)	-6.68*** (0.34)	-0.30* (0.15)						
Scandinavian	-0.57 (1.75)	-2.21 (1.73)							
Anti Self Dealing Index				0.88 (0.72)	3.58 (2.05)	-0.45 (0.65)			
SizeGroup=0 $\times$ Anti Self Dealing Index							2.11* (1.12)		-0.15 (1.00)
SizeGroup=1 $\times$ Anti Self Dealing Index							0.77 (0.87)	5.30** (2.12)	-0.44 (0.81)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.76 (0.69)	5.11** (2.01)	-0.21 (0.71)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.93 (0.87)	3.73* (2.02)	-0.61 (0.64)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.317	0.142	0.031	0.337	0.153	0.028	0.334	0.145	0.022
N	488	210	391	485	208	389	485	208	389

This table investigates the association of debt maturity, measured in years, with the legal environment on the cross-section of 2006Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A23: Debt Maturity - 2012Q1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt
French	-2.26*** (0.34)	-1.70* (0.95)	-1.18*** (0.19)						
German	-1.00*** (0.21)	-3.36*** (0.62)	-0.20 (0.17)						
Scandinavian	-1.15*** (0.37)	-3.46*** (0.64)	0.74* (0.43)						
Anti Self Dealing Index				0.80 (0.63)	1.34* (0.76)	0.07 (0.60)			
SizeGroup=0 $\times$ Anti Self Dealing Index							3.27** (1.50)		-1.03 (0.94)
SizeGroup=1 $\times$ Anti Self Dealing Index							1.71* (1.01)	2.02** (0.92)	-0.07 (0.75)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.77 (0.73)	1.71* (0.88)	0.03 (0.65)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.89 (0.65)	1.23 (0.81)	0.07 (0.59)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.386	0.251	0.152	0.394	0.263	0.135	0.397	0.262	0.136
N	2109	932	1714	2063	917	1675	2063	917	1675

This table investigates the association of debt maturity, measured in years, with the legal environment on the cross-section of 2012Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A24: Debt Maturity - 2019Q1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt
French	-1.16*** (0.40)	-0.43 (0.70)	-0.63* (0.36)						
German	0.23 (0.47)	-2.97*** (0.52)	0.80 (0.70)						
Scandinavian	-1.05** (0.49)	-2.12*** (0.62)	0.14 (0.40)						
Anti Self Dealing Index				-0.36 (0.93)	0.39 (1.32)	-1.05 (0.81)			
SizeGroup=0 × Anti Self Dealing Index							6.61*** (2.26)	-10.55 (6.54)	0.35 (1.23)
SizeGroup=1 × Anti Self Dealing Index							1.82* (0.96)	2.13 (2.30)	-0.56 (1.04)
SizeGroup=2 × Anti Self Dealing Index							-0.10 (0.90)	0.20 (1.36)	-0.55 (0.75)
SizeGroup=3 × Anti Self Dealing Index							-0.25 (0.93)	0.40 (1.35)	-1.34 (0.85)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I & R	I & R	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.333	0.436	0.019	0.338	0.440	0.018	0.349	0.439	0.019
N	2119	965	1777	2080	957	1739	2080	957	1739

This table investigates the association of debt maturity, measured in years, with the legal environment on the cross-section of 2019Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A25: Debt Currency - 2006Q1

	(1) Debt in Local Currency %	(2) Arm's length Debt in Local Currency %	(3) Bank Debt in Local Currency %	(4) Debt in USD (As Foreign) %	(5) Arm's length Debt in USD (foreign) %	(6) Bank Debt in USD (foreign) %	(7) Debt in Local Currency %	(8) Debt in USD (As Foreign) %	(9) Debt in Local Currency %	(10) Debt in USD (As Foreign) %
French	-31.72** (14.37)	-17.32** (8.14)	-4.21 (13.73)	17.27 (10.16)	4.58 (6.51)	11.83 (7.01)				
German	4.18 (2.91)	-13.18*** (3.05)	20.58*** (2.38)	-0.91 (2.79)	-1.44 (1.20)	0.69 (1.93)				
Scandinavian	-35.73 (37.88)	-36.72*** (5.66)	-20.40*** (5.23)	40.20 (38.42)	38.69 (32.79)	3.24 (5.39)				
Anti Self Dealing Index							-12.53 (13.51)	7.03 (12.78)		
SizeGroup=0 × Anti Self Dealing Index								-15.26 (11.85)		15.16 (12.84)
SizeGroup=1 × Anti Self Dealing Index								-5.68 (11.85)		5.98 (11.75)
SizeGroup=2 × Anti Self Dealing Index								-11.17 (12.39)		6.31 (12.04)
SizeGroup=3 × Anti Self Dealing Index								-13.98 (15.55)		7.29 (13.99)
Log Assets	-2.23 (1.35)	6.85*** (0.75)	-11.99*** (0.75)	1.64 (1.27)	0.56 (0.48)	0.80 (0.68)	-2.08 (1.33)	1.74 (1.40)	-1.53 (1.99)	2.01 (2.12)
Log Age	0.70 (0.80)	3.40*** (0.62)	-3.35* (1.81)	-0.72 (0.71)	-0.09 (0.58)	-1.17 (0.84)	0.58 (0.85)	-0.64 (0.66)	0.51 (0.94)	-0.73 (0.75)
Log GDP per Capita	5.48* (2.81)	5.39** (2.02)	-1.53 (1.60)	-5.24** (2.23)	-2.63*** (0.57)	-2.44 (2.36)	6.82* (3.74)	-5.78* (3.06)	6.58 (4.04)	-5.78* (3.30)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I	I	I	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.117	0.222	0.440	0.104	0.028	0.122	0.143	0.131	0.143	0.129
N	486	486	486	487	487	487	483	484	483	484

The table investigates the association of debt currency, with the legal environment on the cross-section of 2006Q1. The dependent variables include the percentage of debt in the local currency, and the percentage of debt in USD as a foreign currency (i.e. zero for US firms). The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (7) to (10) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A26: Debt Currency - 2012Q1

	(1) Debt in Local Currency % (8.55)	(2) Arm's length Debt in Local Currency % (4.61)	(3) Bank Debt in Local Currency % (6.19)	(4) Debt in USD (As Foreign) % (7.65)	(5) Arm's length Debt in USD (foreign) % (3.31)	(6) Bank Debt in USD (foreign) % (6.50)	(7) Debt in Local Currency % (14.91)	(8) Debt in USD (As Foreign) % (13.46)	(9) Debt in Local Currency % (20.44)	(10) Debt in USD (As Foreign) % (20.44)
French	-25.53*** (8.55)	-21.73*** (4.61)	-4.50 (6.19)	22.75*** (7.65)	5.48 (3.31)	16.54** (6.50)				
German	0.78 (3.72)	-17.41*** (3.14)	18.11*** (3.56)	0.55 (3.30)	1.41** (0.65)	-1.33 (2.88)				
Scandinavian	-39.06** (16.55)	-24.62*** (6.28)	-18.29* (10.86)	20.67 (12.86)	0.32 (3.90)	20.71** (9.55)				
Anti Self Dealing Index							-9.16 (14.91)	6.76 (13.46)		
SizeGroup=0 × Anti Self Dealing Index								-13.41 (21.37)	14.86 (20.44)	
SizeGroup=1 × Anti Self Dealing Index								-6.53 (17.69)	7.01 (16.30)	
SizeGroup=2 × Anti Self Dealing Index								-6.01 (16.00)	5.80 (14.42)	
SizeGroup=3 × Anti Self Dealing Index								-11.17 (14.77)	7.53 (13.37)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I	I	I	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.186	0.400	0.372	0.173	0.110	0.128	0.195	0.184	0.196	0.185
N	2104	2104	2104	2106	2106	2106	2058	2060	2058	2060

The table investigates the association of debt currency, with the legal environment on the cross-section of 2012Q1. The dependent variables include the percentage of debt in the local currency, and the percentage of debt in USD as a foreign currency (i.e. zero for US firms). The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (7) to (10) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A27: Debt Currency - 2019Q1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Debt in Local Currency %	Arm's length Debt in Local Currency %	Bank Debt in Local Currency %	Debt in USD (As Foreign) %	Arm's length Debt in USD (foreign) %	Bank Debt in USD (foreign) %	Debt in Local Currency %	Debt in USD (As Foreign) %	Debt in Local Currency %	Debt in USD (As Foreign) %
French	-43.47*** (10.88)	-12.88*** (4.30)	-26.00*** (8.15)	46.28*** (10.44)	12.29* (6.44)	30.73*** (7.11)				
German	1.09 (4.18)	-12.02*** (3.19)	16.95** (6.74)	-0.06 (3.43)	0.78 (1.20)	-0.83 (2.62)				
Scandinavian	-30.32*** (9.16)	2.80 (4.27)	-35.31*** (8.18)	12.07 (7.68)	3.55 (2.92)	8.89* (4.46)				
Anti Self Dealing Index							5.30 (19.88)	-9.13 (10.53)		
SizeGroup=0 × Anti Self Dealing Index									-7.31 (18.30)	5.16 (19.87)
SizeGroup=1 × Anti Self Dealing Index									7.92 (18.47)	-8.44 (18.08)
SizeGroup=2 × Anti Self Dealing Index									8.53 (19.27)	-10.96 (18.84)
SizeGroup=3 × Anti Self Dealing Index									2.76 (20.79)	-7.38 (20.34)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I	I	I	I	I	I	I & R	I & R	I & R	I & R
Cluster	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.308	0.403	0.416	0.337	0.151	0.249	0.289	0.288	0.291	0.290
N	2108	2108	2108	2108	2108	2108	2070	2070	2070	2070

The table investigates the association of debt currency, with the legal environment on the cross-section of 2019Q1. The dependent variables include the percentage of debt in the local currency, and the percentage of debt in USD as a foreign currency (i.e. zero for US firms). The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (7) to (10) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

A4 Robustness Excluding United States

Table A28: Number of Creditors - Excluding United States

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) Lead Arrangers	(5) All Creditors	(6) Arm's Length Creditors	(7) Banks	(8) Lead Arrangers	(9) All Creditors	(10) Arm's Length Creditors	(11) Banks	(12) Lead Arrangers
French	-3.29 (20.42)	-5.53 (20.93)	2.25** (1.04)	1.65* (0.88)								
German	-23.70* (13.30)	-26.66** (12.98)	2.96** (1.24)	0.34 (1.15)								
Scandinavian	-41.66** (17.46)	-40.23** (17.77)	-1.43** (0.55)	0.81 (0.82)								
Anti Self Dealing Index					9.31 (14.94)	12.75 (15.10)	-3.44** (1.48)	-0.10 (1.21)				
SizeGroup=0 × Anti Self Dealing Index									337.78*** (113.82)	332.14*** (113.54)	5.64 (3.54)	3.85* (2.09)
SizeGroup=1 × Anti Self Dealing Index									187.72*** (66.30)	187.18*** (66.55)	0.54 (2.31)	0.43 (1.68)
SizeGroup=2 × Anti Self Dealing Index									63.42** (31.18)	66.56** (30.91)	-3.13* (1.72)	-0.38 (1.25)
SizeGroup=3 × Anti Self Dealing Index									-3.99 (17.81)	-0.82 (17.71)	-3.17* (1.58)	0.22 (1.26)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C	C	C	C
Adj. R2	0.264	0.247	0.244	0.234	0.293	0.279	0.242	0.267	0.348	0.333	0.249	0.273
N	53771	53771	53771	53771	51430	51430	51430	51430	51430	51430	51430	51430

This table investigates the association between ownership dispersion, measured by the number of different types of creditors, and the legal environment on the sub-sample excluding all observations from firms in the United States. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (5) to (12) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A29: Creditor Concentration- Number to Cross 30% - Excluding United States

	(1) All Creditors	(2) Arm's Length Creditors	(3) Banks	(4) All Creditors	(5) Arm's Length Creditors	(6) Banks	(7) All Creditors	(8) Arm's Length Creditors	(9) Banks
French	0.09 (0.27)	-0.31 (0.37)	0.29*** (0.08)						
German	-0.30 (0.31)	-1.80* (0.95)	0.09 (0.21)						
Scandinavian	-0.64** (0.25)	-0.91*** (0.22)	-0.24*** (0.08)						
Anti Self Dealing Index				0.05 (0.22)	1.19** (0.55)	-0.23 (0.19)			
SizeGroup=0 × Anti Self Dealing Index							4.07** (1.60)	16.49*** (3.74)	0.91 (0.56)
SizeGroup=1 × Anti Self Dealing Index							1.97** (0.94)	8.42*** (1.68)	0.15 (0.36)
SizeGroup=2 × Anti Self Dealing Index							0.38 (0.43)	2.25* (1.25)	-0.31 (0.24)
SizeGroup=3 × Anti Self Dealing Index							0.07 (0.26)	1.28** (0.56)	-0.13 (0.19)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.294	0.518	0.203	0.316	0.535	0.199	0.344	0.546	0.208
N	53771	7200	50884	51430	6798	48751	51430	6798	48751

This table investigates the association between ownership dispersion, measured by the minimum number of different types of creditors to cross the 30% in ownership, in their debt type (all, arm's length debt, or bank debt) with the legal environment on the sub-sample excluding all observations from firms in the United States. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A30: Secured Debt - Excluding United States

	(1) Total Secured Debt	(2) Secured Arm's Length Debt	(3) Secured Bank Debt	(4) Total Secured Debt	(5) Secured Arm's Length Debt	(6) Secured Bank Debt	(7) Total Secured Debt	(8) Secured Arm's Length Debt	(9) Secured Bank Debt
French	-17.41*** (3.87)	0.73 (0.80)	-17.16*** (3.74)						
German	-24.40*** (7.00)	-0.79 (0.74)	-21.17*** (6.28)						
Scandinavian	-13.88* (7.03)	0.45 (1.39)	-14.82** (6.10)						
CR				5.56*** (1.55)	0.03 (0.16)	5.07*** (1.49)			
SizeGroup=0 × CR							-9.38*** (3.30)	0.24 (0.31)	-9.07*** (3.16)
SizeGroup=1 × CR							1.07 (2.00)	0.18 (0.23)	0.84 (2.04)
SizeGroup=2 × CR							4.33*** (1.29)	-0.05 (0.16)	3.98*** (1.26)
SizeGroup=3 × CR							6.28*** (1.74)	0.08 (0.20)	5.71*** (1.67)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.250	0.028	0.246	0.226	0.035	0.223	0.241	0.035	0.238
N	52827	52827	52827	51428	51428	51428	51428	51428	51428

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment on the sub-sample excluding all observations from firms in the United States. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil law, German civil law, and Scandinavian civil law countries, respectively, with common law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). SizeGroup includes the quartile of firms' size (total assets in USD) within the unrestricted sample of firms in that country. All specifications incorporate industry fixed effects using two-digit SIC classifications and year × quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A31: Debt Maturity - Excluding United States

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt
French	-0.30 (0.35)	-0.85 (0.66)	-0.05 (0.23)						
German	-0.08 (0.25)	-2.26*** (0.46)	0.42** (0.20)						
Scandinavian	-0.06 (0.29)	-1.66*** (0.37)	0.53*** (0.14)						
Anti Self Dealing Index				-0.40 (0.31)	1.48** (0.65)	-0.74*** (0.25)			
SizeGroup=0 $\times$ Anti Self Dealing Index							2.69* (1.55)	7.01 (5.16)	-0.74 (0.45)
SizeGroup=1 $\times$ Anti Self Dealing Index							1.16 (0.98)	5.23*** (1.74)	-0.84** (0.36)
SizeGroup=2 $\times$ Anti Self Dealing Index							-0.07 (0.44)	3.39*** (0.86)	-0.86*** (0.26)
SizeGroup=3 $\times$ Anti Self Dealing Index							-0.42 (0.29)	1.45** (0.64)	-0.67** (0.28)
Log Assets	0.49*** (0.10)	0.96*** (0.19)	0.16* (0.09)	0.48*** (0.11)	1.10*** (0.18)	0.13 (0.10)	0.65*** (0.19)	1.26*** (0.21)	0.11 (0.13)
Log Age	0.18 (0.12)	0.40*** (0.13)	-0.04 (0.09)	0.19* (0.11)	0.19 (0.14)	0.03 (0.07)	0.17* (0.10)	0.21 (0.13)	0.03 (0.07)
Log GDP per Capita	-0.29** (0.13)	-0.30 (0.35)	-0.36** (0.16)	-0.34** (0.14)	-0.49*** (0.18)	-0.34** (0.16)	-0.39*** (0.14)	-0.47*** (0.17)	-0.34** (0.16)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.145	0.318	0.073	0.160	0.379	0.071	0.168	0.385	0.071
N	53771	12717	50884	51430	12046	48751	51430	12046	48751

This table investigates the association of debt maturity, measured in years, with the legal environment on the sub-sample excluding all observations from firms in the United States. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

A5 Robustness Using Unrestricted Sample

Table A32: Secured Debt - Unrestricted Sample

	(1) Total Secured Debt	(2) Secured Arm's Length Debt	(3) Secured Bank Debt	(4) Total Secured Debt	(5) Secured Arm's Length Debt	(6) Secured Bank Debt	(7) Total Secured Debt	(8) Secured Arm's Length Debt	(9) Secured Bank Debt
French	-21.95*** (4.23)	-2.25** (0.91)	-17.56*** (3.87)						
German	-23.99*** (4.90)	-3.47*** (0.80)	-16.45*** (3.86)						
Scandinavian	-25.10*** (5.28)	-2.91** (1.31)	-18.29*** (4.08)						
CR				6.68** (2.60)	0.10 (0.30)	5.02** (2.03)			
SizeGroup=0 × CR							4.99* (2.53)	-0.30 (0.29)	3.12 (2.07)
SizeGroup=1 × CR							8.44*** (2.58)	-0.20 (0.31)	6.78*** (2.06)
SizeGroup=2 × CR							8.11*** (2.61)	0.09 (0.30)	6.65*** (2.01)
SizeGroup=3 × CR							5.25* (3.10)	0.72** (0.34)	3.56 (2.41)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.125	0.039	0.106	0.100	0.049	0.093	0.106	0.051	0.101
N	1586356	1586356	1586356	1561809	1561809	1561809	1561809	1561809	1561809

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment in the unrestricted sample. This is our sample before merging firms' capital structure and balance sheet information with ownership data and applying coverage filters. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil law, German civil law, and Scandinavian civil law countries, respectively, with common law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). SizeGroup includes the quartile of firms' size (total assets in USD) within the unrestricted sample of firms in that country. All specifications incorporate industry fixed effects using two-digit SIC classifications and year × quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A33: Debt Maturity - Unrestricted Sample

	(1) Total Debt	(2) Arm's Length Debt	(3) Bank Debt	(4) Total Debt	(5) Arm's Length Debt	(6) Bank Debt	(7) Total Debt	(8) Arm's Length Debt	(9) Bank Debt
French	-0.84*** (0.29)	-1.08** (0.49)	-0.29 (0.19)						
German	-1.39*** (0.37)	-2.54*** (0.29)	-0.82** (0.34)						
Scandinavian	-1.05*** (0.34)	-1.88*** (0.40)	-0.03 (0.28)						
Anti Self Dealing Index				0.37 (0.78)	2.21*** (0.72)	-0.21 (0.74)			
SizeGroup=0 $\times$ Anti Self Dealing Index							0.28 (0.96)	2.98*** (0.89)	-0.62 (0.99)
SizeGroup=1 $\times$ Anti Self Dealing Index							0.20 (0.80)	2.67*** (0.66)	-0.44 (0.79)
SizeGroup=2 $\times$ Anti Self Dealing Index							0.20 (0.74)	2.41*** (0.66)	-0.25 (0.69)
SizeGroup=3 $\times$ Anti Self Dealing Index							0.67 (0.71)	2.01** (0.80)	0.21 (0.55)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C	C	C	C
Adj. R2	0.162	0.257	0.073	0.163	0.266	0.070	0.164	0.266	0.071
N	1277326	494524	1064470	1225126	482329	1018704	1225126	482329	1018704

This table investigates the association of debt maturity, measured in years, with the legal environment in the unrestricted sample. This is our sample before merging firms' capital structure and balance sheet information with ownership data and applying coverage filters. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A34: Debt Currency - Unrestricted Sample

	(1) Debt in Local Currency % (5.96)	(2) Arm's length Debt in Local Currency % (3.08)	(3) Bank Debt in Local Currency % (3.97)	(4) Debt in USD (As Foreign) % (4.97)	(5) Arm's length Debt in USD (foreign) % (1.28)	(6) Bank Debt in USD (foreign) % (3.79)	(7) Debt in Local Currency % (9.63)	(8) Debt in USD (As Foreign) % (7.50)	(9) Debt in Local Currency % (10.05)	(10) Debt in USD (As Foreign) % (7.82)
French	-13.17** (5.96)	-5.80* (3.08)	-2.90 (3.97)	11.50** (4.97)	1.45 (1.28)	9.69** (3.79)				
German	4.96 (5.27)	-8.11** (3.81)	17.69*** (5.41)	-5.32* (2.90)	-1.53* (0.92)	-3.18 (2.02)				
Scandinavian	-6.19 (6.43)	-6.42 (4.29)	0.32 (4.63)	1.18 (5.56)	-0.80 (1.42)	2.18 (3.64)				
Anti Self Dealing Index							-9.39 (9.63)	1.43 (7.50)		
SizeGroup=0 × Anti Self Dealing Index									-9.54 (10.05)	0.36 (7.82)
SizeGroup=1 × Anti Self Dealing Index									-7.22 (9.72)	-0.64 (7.44)
SizeGroup=2 × Anti Self Dealing Index									-7.60 (9.67)	0.08 (7.36)
SizeGroup=3 × Anti Self Dealing Index									-12.64 (9.77)	5.10 (7.93)
Controls	Yes I & Q C	Yes I & Q C	Yes I & Q C	Yes I & Q & R C	Yes I & Q & R C	Yes I & Q & R C	Yes I & Q & R C	Yes I & Q & R C	Yes I & Q & R C	Yes I & Q & R C
Fixed effects										
Cluster										
Adj. R2	0.093	0.121	0.115	0.109	0.047	0.084	0.084	0.082	0.086	0.084
N	1586356	1586356	1586356	1781658	1781658	1781658	1514787	1710624	1514787	1710624

The table investigates the association of debt currency, with the legal environment in the unrestricted sample. This is our sample before merging firms', capital structure and balance sheet information with ownership data and applying coverage filters. The dependent variables include the percentage of debt in the local currency, and the percentage of debt in USD as a foreign currency (i.e. zero for US firms). The key explanatory variables include legal origin indicator variables, which equal 1 for French civil law, German civil law, and Scandinavian civil law countries, with common law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#). The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. SizeGroup denotes the firm size quartile (based on total assets in USD) within the unrestricted sample of firms in each country. All specifications incorporate industry fixed effects (two-digit SIC classification) and year × quarter fixed effects. Specifications in columns (7) to (10) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

A6 Robustness Controlling for Credit ratings

Table A35: Robustness: Secured Debt and Credit Rating (2019Q1)

	(1) Total Secured Debt	(2) Secured Arm's Length Debt	(3) Secured Bank Debt	(4) Total Secured Debt	(5) Secured Arm's Length Debt	(6) Secured Bank Debt
French	-22.39*** (4.99)	2.88 (1.95)	-24.29*** (4.39)			
German	-38.73*** (8.34)	-0.25 (0.80)	-35.53*** (6.75)			
Scandinavian	-28.29*** (7.05)	6.28*** (2.08)	-38.15*** (7.85)			
CR				6.71** (2.72)	-1.01 (0.76)	8.97*** (3.11)
Rated	66.23*** (6.22)	-4.51 (2.71)	64.90*** (5.41)	66.98*** (6.22)	-4.21 (2.70)	65.27*** (5.66)
Rated $\times$ Credit Score	11.58*** (0.77)	-0.18 (0.48)	10.95*** (0.66)	11.53*** (0.77)	-0.13 (0.49)	10.94*** (0.68)
Log Assets	-7.22*** (0.95)	-0.38 (0.23)	-7.13*** (1.08)	-6.92*** (0.98)	-0.38 (0.25)	-6.81*** (1.13)
Log Age	-5.13** (1.94)	-0.46 (0.42)	-4.49*** (1.65)	-5.69** (2.20)	-0.42 (0.41)	-5.05** (1.91)
Log GDP per Capita	-1.14 (1.39)	0.47 (0.51)	-2.94** (1.24)	-8.84** (4.28)	0.10 (0.69)	-9.44** (3.95)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C
Sample	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1
Adj. R2	0.335	0.125	0.356	0.315	0.124	0.329
N	2108	2108	2108	2078	2078	2078

This table investigates the association of secured debt, measured as a percentage of total debt type (all debt, arm's length debt, or bank debt) that is secured with some collateral, with the legal environment and their interplay with credit quality on a cross-section of our sample at 2019Q1. The key explanatory variables include legal origin indicator variables, which take the value of 1 for French civil-law, German civil-law, and Scandinavian civil-law countries, respectively, with common-law legal origin serving as the omitted category, and the creditor rights index, which ranges from 0 to 4, along with a credit score and a dummy when this score is missing. In the creditor rights index, a score of 1 is assigned for each of the following rights of secured lenders as defined in laws and regulations: (i) there are restrictions, such as creditor consent or minimum dividends, preventing a debtor from filing for reorganization; (ii) secured creditors can seize their collateral after the reorganization petition is approved (i.e., there is no automatic stay or asset freeze); (iii) secured creditors are paid first from the proceeds of liquidating a bankrupt firm, rather than other creditors such as the government or workers; and (iv) management does not retain administration of the property pending the resolution of the reorganization. The index is derived from [Djankov et al. \(2007\)](#), who extended, revised, and updated the original index compiled by [La Porta et al. \(1997, 1998\)](#). Firms' credit ratings are converted to a credit score from zero to six with one indicating an Aaa rating, two indicating an Aa rating, ..., and six indicating a B or worse rating. All specifications incorporate industry fixed effects using two-digit SIC classifications and year $\times$ quarter fixed effects. Columns (4) to (9) also include region fixed effects corresponding to the continents as classified by the World Bank. Controls for the logarithm of GDP per capita for each year in each country, the logarithm of firm age, and the logarithm of total assets in USD are included in all specifications. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table [A1](#). Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses below the estimates. Symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A36: Robustness: Debt Maturity and Credit Rating (2019Q1)

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Debt	Arm's Length Debt	Bank Debt	Total Debt	Arm's Length Debt	Bank Debt
French	-0.96*** (0.33)	-0.33 (0.57)	-0.67* (0.36)			
German	0.43 (0.51)	-2.43*** (0.36)	0.78 (0.69)			
Scandinavian	-0.90 (0.57)	-2.23*** (0.64)	0.14 (0.40)			
Anti Self Dealing Index				-0.54 (0.88)	0.38 (1.09)	-1.02 (0.80)
Rated	-8.68*** (0.95)	-7.33*** (0.67)	2.60** (1.11)	-8.76*** (0.94)	-7.14*** (0.62)	2.60** (1.13)
Rated $\times$ Credit Score	-1.52*** (0.20)	-1.34*** (0.10)	0.49** (0.21)	-1.56*** (0.19)	-1.32*** (0.09)	0.49** (0.22)
Log Assets	0.59*** (0.12)	0.83*** (0.11)	0.28 (0.22)	0.60*** (0.12)	0.88*** (0.09)	0.28 (0.23)
Log Age	0.44*** (0.08)	0.54*** (0.09)	0.04 (0.09)	0.43*** (0.08)	0.49*** (0.12)	0.08 (0.10)
Log GDP per Capita	-0.03 (0.14)	0.25 (0.20)	-0.34*** (0.12)	0.18 (0.23)	-0.25 (0.31)	-0.03 (0.22)
Fixed effects	I & Q	I & Q	I & Q	I & Q & R	I & Q & R	I & Q & R
Cluster	C	C	C	C	C	C
Sample	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1
Adj. R2	0.378	0.471	0.024	0.383	0.474	0.023
N	2119	965	1777	2080	957	1739

This table investigates the association of debt maturity, measured in years, with the legal environment and their interplay with credit quality on a cross-section of our sample at 2019Q1. The key explanatory variables include legal origin indicator variables, which equal 1 for French civil-law, German civil-law, and Scandinavian civil-law countries, with common-law legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#), along with a credit score and a dummy when this score is missing. The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. Firms' credit ratings are converted to a credit score from zero to six with one indicating an Aaa rating, two indicating an Aa rating, ..., and six indicating a B or worse rating. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (4) to (9) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A37: Robustness: Debt Currency and Credit Rating (2019Q1)

	(1) Debt in Local Currency %	(2) Arm's length Debt in Local Currency %	(3) Bank Debt in Local Currency %	(4) Debt in Local Currency %	(5) Debt in USD (As Foreign) %	(6) Arm's length Debt in USD (foreign) %	(7) Bank Debt in USD (foreign) %	(8) Debt in USD (As Foreign) %
French	-43.41*** (10.95)	-12.38*** (4.40)	-26.37*** (7.93)		46.21*** (10.51)	12.06* (6.51)	30.86*** (7.04)	
German	1.59 (4.22)	-8.42*** (2.30)	14.08** (6.10)		-0.42 (3.42)	1.41 (1.36)	-1.73 (2.96)	
Scandinavian	-29.88*** (9.24)	5.95 (4.29)	-37.82*** (8.35)		11.76 (7.71)	4.16 (2.71)	8.05* (4.71)	
Anti Self Dealing Index				5.19 (20.00)				-9.02 (19.64)
Rated	-8.01 (5.82)	-59.57*** (4.40)	46.49*** (5.71)	-6.24 (5.71)	6.91 (4.71)	0.74 (5.11)	5.89 (4.65)	5.93 (5.01)
Rated $\times$ Credit Score	-1.11 (0.96)	-8.39*** (0.79)	6.49*** (0.88)	-1.28 (1.10)	1.02 (0.82)	0.73 (1.02)	0.32 (0.67)	1.33 (1.01)
Log Assets	-3.65** (1.41)	3.51* (2.00)	-7.41*** (1.22)	-3.58** (1.42)	2.81* (1.55)	1.54* (0.91)	1.16 (0.74)	2.79* (1.57)
Log Age	3.71* (2.19)	2.34*** (0.76)	1.16 (1.73)	2.91 (1.77)	-3.51* (1.99)	-0.90 (0.64)	-2.54 (1.54)	-3.00* (1.70)
Log GDP per Capita	8.77** (3.57)	4.56*** (1.20)	3.92 (2.88)	16.60** (7.01)	-8.31*** (3.02)	-4.39*** (0.93)	-4.38* (2.60)	-16.79** (7.01)
Fixed effects	I & Q C	I & Q C	I & Q C	I & Q & R C	I & Q C	I & Q C	I & Q C	I & Q & R C
Cluster								
Sample	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1	2019Q1
Adj. R2	0.308	0.471	0.446	0.289	0.337	0.155	0.253	0.288
N	2108	2108	2108	2070	2108	2108	2108	2070

The table investigates the association of debt currency, with the legal environment and their interplay with credit quality on a cross-section of our sample at 2019Q1. The dependent variables include the percentage of debt in the local currency, and the percentage of debt in USD as a foreign currency (i.e. zero for US firms). The key explanatory variables include legal origin serving as the omitted category, and the composite Anti Self Dealing Index, which represents the average of the ex ante and ex post private control of self-dealing measures according to [Djankov et al. \(2008b\)](#), along with a credit score and a dummy when this score is missing. The ex ante private control of self-dealing index, which ranges from 0 to 1, captures (i) disclosures by the buyer and the seller, and (ii) whether a positive independent review of the transaction is required, as well as whether the transaction must be approved by disinterested shareholders. The ex post private control of self-dealing index, which ranges from 0 to 1, captures (i) post-transaction legal provisions to hold the buyer and seller liable for bad faith, (ii) the ability of shareholders to sue or rescind the transaction, (iii) the ability of shareholders to access evidence on the transaction, and (iv) disclosure of evidence in periodic filings. Firms' credit ratings are converted to a credit score from zero to six with one indicating an Aaa rating, two indicating an Aa rating, ..., and six indicating a B or worse rating. All specifications incorporate industry fixed effects (two-digit SIC classification) and year $\times$ quarter fixed effects. Specifications in columns (7) to (10) additionally include continental fixed effects based on the World Bank's regional classification. Controls for the logarithm of GDP per capita, the logarithm of firm age, and the logarithm of total assets (all in USD) are included in all regressions. The constant term is not reported. Detailed variable definitions and sources are provided in Appendix Table A1. Heteroskedasticity-adjusted standard errors, clustered at the country level, are reported in parentheses. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

A7 Data preparation

A7.1 Firm Identifiers

Firm information within our sample is sourced from four primary databases: Capital IQ, Worldscope, Compustat, and Amadeus. These databases utilize different firm identifiers: companyid for Capital IQ, Worldscope Permanent Identifier for Worldscope, GVKEY for Compustat, and IDNR for Amadeus. Of these, Capital IQ stands out as the most comprehensive dataset, and its companyid serves as our primary firm identifier. Therefore, we try to find links between companyid and the local identifiers of the other three datasets. Below, we outline the steps taken to merge each of these datasets with Capital IQ:

A7.1.1 Capital IQ.

Among the three sources of balance sheet information in our dataset, merging companyid with Compustat proves the simplest, facilitated by both being part of S&P Global, with a linking table provided directly by Capital IQ. The merge between Capital IQ and Amadeus, while challenging in practice, is straightforward to describe due to its predominantly manual hand-matching nature. Detailed procedures for these two mergers of datasets are elaborated below. However, the merge between Worldscope (from Refinitiv environment) and Capital IQ (from S&P Global) presented notable complexities. Despite both being reputable data providers, their distinct environments necessitated a more intricate merging process. The problem arises from Worldscope permanent identifier not appearing anywhere else than Worldscope. There is also not much hope in merging on public identifiers such as ISIN and CUSIP directly because many firms in our sample either don't have them or don't have a unique value for them. As a result, we have to find global linking tables between S&P Global and Refinitiv environments.

The unique identifier common across all datasets within Refinitiv is known as PermID¹⁵¹⁶. PermID serves as a comprehensive identifier for various entity types, including organizations, instruments, funds, issuers, and individuals. It remains unchanged and ensures unambiguous referencing, making it highly suitable as a universal identifier. PermID plays a central role in Refinitiv's information model and knowledge graph¹⁷.

Our primary use of PermID is to merge Capital IQ with Worldscope, as detailed below. Additionally, having PermID facilitates the merging of firm data with debt ownership data

¹⁵Although sometimes PermID is not readily available in some Refinitiv datasets, as is the case with Worldscope, and needs to be retrieved separately using Refinitiv APIs or desktop products.

¹⁶See all details in <https://permid.org/>

¹⁷LSEG completed the acquisition of Refinitiv from its previous owners in late January 2021, and Refinitiv now operates as a subsidiary of LSEG. While some products of Refinitiv have undergone name changes since our original use, we continue to refer to them as Refinitiv to maintain clarity.

in Dealscan (which now includes PermID in its revamped version) and eMAXX (for which PermIDs are retrieved similarly to Worldscope using Refinitiv Python APIs) which are both products of Refinitiv, as outlined in Appendix Section [A7.2](#).

There is no direct linkage between companyids in Capital IQ and PermIDs in the Refinitiv environment. To bridge this gap, we extensively utilize local linking tables provided in WRDS for each dataset. These tables detail the identifiers of instruments (such as bonds and stocks) associated with each firm. Specifically, we leverage the following linking tables from Capital IQ¹⁸:

1. *wrds.isin.sas7bdat*: Lists all ISINs associated with a companyid, including start and end dates of the linkage, and company names.
2. *wrds.cusip.sas7bdat*: Provides all CUSIPs and CINSs associated with a companyid, along with start and end dates of the linkage, and company names.

In contrast, for Refinitiv PermID, a direct linking table from standard identifiers (ISIN, CUSIP, etc.) to organization PermID does not exist and must be compiled using available Refinitiv files¹⁹:

1. *permisindata.sas7bdat*: Shows the PermID of the instrument associated with each ISIN, detailing the start and end date of the link.
2. *perminstrref.sas7bdat*: Links each instrument PermID to its organization’s PermID.

Similar steps are repeated using *permcusipdata.sas7bdat* and *permcincusipdata.sas7bdat* to link CUSIPs and CINSs to firm PermID. This results in two tables linking standard identifiers (ISIN, CUSIP, CINS) to their respective firm PermID, akin to the tables found in Capital IQ.

In the final step, we merge the companyid-ISIN linking table with the PermID-ISIN linking table²⁰ to establish companyid-PermID links. This process is similarly applied to companyid-CUSIP/CINS links and PermID-CUSIP/CINS links to refine our initial companyid-PermID associations. Finally, cases where the companyid-PermID relationship is not one-to-one are filtered out.

¹⁸These linking tables are located in the following directories within the SAS version of WRDS files: /wrds/capitaliq/sasdata/helper.

¹⁹These files are found in the following directories within the SAS version of WRDS files: /wrds/tfn/sasdata/helper

²⁰**Note:** At this stage, we are agnostic to the security types of ISINs or their existence in our debt instruments, aiming to maximize the number of links between Capital IQ and Refinitiv firm identifiers. Similarly, this approach applies to CUSIPs and CINS. Therefore, links may be established using, for example, stocks, even though our study focuses exclusively on debt instruments, primarily bonds and loans.

Following this procedure, out of 135,807 unique companyids in our Capital IQ dataset, we successfully identify PermIDs for 107,545 firms. This success rate is significant, with unmatched firms likely being smaller entities not covered by Refinitiv PermIDs, which would not be included in our final sample anyway as our ownership data exclusively relies on Refinitiv products.

A7.1.2 Worldscope.

To compile a comprehensive dataset from Worldscope, we initially download all available observations covering the period 1998 to 2022, filtering out entries lacking a Worldscope Permanent Identifier or Date of Fiscal Period End. Subsequently, we exclude observations where the Entity Type is not designated as “C”, indicating non-corporate entities, and remove entries with non-positive total assets. This refining process results in approximately 2.5 million quarterly observations.

The Worldscope Permanent Identifier, unique to Worldscope and not shared with other datasets, precludes its direct use for merging. However, leveraging Refinitiv’s ecosystem, we utilize their APIs to retrieve PermID for Worldscope firms. Initially, we employ the *Eikon.get_symbology* method, focusing on Worldscope Permanent Identifiers. For firms where PermID retrieval is unsuccessful in the first step, we extend the query to utilize ISIN, CUSIP, and SEDOL identifiers in Worldscope.

Combining these approaches ensures we obtain PermIDs for approximately 99.8% of Worldscope observations. The remaining small fraction, where PermIDs cannot be retrieved confidently, is subsequently omitted from our dataset. Ultimately the merge of Capital IQ with Worldscope is done using PermIDs and calendar quarters.

A7.1.3 Compustat.

Compustat and Capital IQ both belong to S&P Global, and a linking table between Capital IQ companyids and Compustat GVKEYs is directly provided by Capital IQ, which is also accessible in WRDS²¹. This table includes the start date and end date of the validity of these links as well.

To obtain the GVKEYs for our quarterly Capital IQ firm observations, we proceed with the following steps:

1. First, we merge our Capital IQ data with the linking table, using only companyids that are mapped to a unique GVKEY.

²¹This linking table is called *wrds_gvkey.sas7bdat* and is located in the following directories within the SAS version of WRDS files: `/wrds/capitaliq/sasdata/helper`

2. For companyids mapped to more than one GVKEY, we perform the merge again, this time taking into account the validity periods of the links.

Ultimately the merge between Capital IQ and Compustat is performed on the GVKEYs and calendar quarters.

A7.1.4 Amadeus.

Amadeus provides balance sheet information on European firms using a proprietary local identifier called IDNR, which is not compatible with other datasets. The only standard identifier in Amadeus is ISIN, which only sporadically adds firms to our sample that are not present already in Worldscope or Compustat. To enhance our sample coverage in Europe, we employ the following approach:

1. We utilize our Dealscan data, which includes PermID and GVKEYs²² of borrowers, to identify European firms:
 - Whose PermID is not in Worldscope,
 - Either lack a GVKEY or have a GVKEY not in our Compustat data,
 - Whose PermID appears in our Capital IQ data.

On one hand, these firms would not appear in our final dataset without using Amadeus, as their balance sheet information cannot be sourced from either Worldscope or Compustat. On the other hand, these firms have highest potential for inclusion in our study because their debt structure already exists in our Capital IQ data, and some debt ownership data for them exists in our Dealscan sample. We identify 1,063 such Dealscan borrowers.

2. We manually search for firm names online and in Amadeus and locate 572 out of the 1,063 firms in Amadeus.
3. For these 572 located firms in Amadeus, we fill in their PermID and merge Capital IQ with Amadeus using ISIN and then PermID. Although in general we only keep clean Capital IQ observation with detail breakdown of debt types, for this 572 firms in Amadeus we tolerate missing detail debt structure information in Capital IQ and we assume they are fully bank financed. However, exclusion of these 572 firms from our sample does not qualitatively or quantitatively affect the material findings of this study.

²²GVKEY of Dealscan borrowers are found using the table provided by [Chava and Roberts \(2008\)](#)

A7.2 eMAXX

eMAXX data reports institutional investors fixed-income holdings at the securities level. Based on the calendar date of bond ownership, this dataset is structured as separate standalone folders for each quarter. The unit of observation in eMAXX is fund, so we pivot the date to achieve a dual format in which we observe different holder of each security in each quarter.

We begin by compiling a list of issue-level and issuer-level data from all the eMAXX folders available to us, retaining only the records pertaining to the corporate and asset-backed markets. Upon analysis, we observed that many entries regarding the par amount outstanding reported in eMAXX for corporate issues were outdated, as numerous securities had been partially or fully called before reaching maturity. Unfortunately, these updates were either not reflected in eMAXX or were significantly delayed. Since the par outstanding of bonds is a crucial piece of information for reconstructing the debt outstanding of bond-issuing firms, we addressed this issue by retrieving the time-series data of par outstandings for all eMAXX issues using the Refinitiv API and subsequently updating the information in eMAXX. At this stage, we are dealing with approximately half a million distinct CUSIPs in our dataset.

The next step, perhaps the most challenging aspect of working with eMAXX data, involves linking eMAXX issuers to other datasets containing firm information, such as Capital IQ, Worldscope, Compustat, and Amadeus. The only identifiers available in eMAXX for issuers are the 6-digit CUSIP and the firm name, both of which can be cumbersome to work with. Dealing with 6-digit CUSIPs can be challenging because a firm may be assigned multiple 6-digit CUSIPs over time, and handling firm names can be complicated due to potential variations in recording across datasets and the presence of overlapping or similar names. To tackle this challenge, we employ a three step solution: Firstly, we utilize the auxiliary Capital IQ linking tables available in the SAS studio version of WRDS, which provide historical changes in CUSIP-companyid and ISIN-companyid links. Secondly, we utilize auxiliary Thomson-Reuters files, also available in the SAS studio version of WRDS, which give us the PermID of the securities in eMAXX. Although these are only the PermIDs of the bond issues, they help us find the PermID of the issuer using the Refinitiv API. Lastly, for bond issues that still lack either the Capital IQ companyid or Refinitiv PermID, we attempt to find additional firm PermIDs by searching the issue CUSIP, ISIN, or CINS in the Refinitiv API, which occasionally provides us with extra firm PermIDs. We consider the aggregate of these three steps very successful, as only about 11% of our half a million CUSIPs remain unlinked to both Capital IQ companyid and Refinitiv PermID.

Identifying and consolidating ownership information of bond issues is a crucial aspect

of this research. However, this task can become challenging when ownership stakes are reported using seemingly distinct identifiers. This issue of identifier duplicity is particularly common when different segments of the same debt instrument are traded in both the US and Europe such as 144A and Regulation S bonds. Failing to establish these linkages could lead researchers to believe that eMAXX covers only a marginal portion of certain bonds' ownership, without realizing that another segment of bondholders for that same issue may be using an alternative identifier. To illustrate, consider a scenario where two distinct CUSIPs are associated with the same bond. In eMAXX holdings data, these identifiers might be observed with ownership percentages of x_A and x_B relative to the total par outstanding. In such cases, the correct percentage of observed ownership for this bond should be $x_A + x_B$. The reasons for the existence of such duplicate identifiers, the regulations surrounding them, and some examples are outlined in Section A7.3. However, in the rest of this section, we elaborate on the methods for identifying and handling such duplicate issue identifiers.

To identify duplicating identifiers, we initially utilize the Refinitiv API to acquire the full list of identifiers for each bond issue in eMAXX. Among these identifiers, our focus is on CINS, ISIN, CUSIP, Corresponding 144A CUSIP, Corresponding 144A ISIN, Corresponding Regulation S CUSIP, and Corresponding Regulation S ISIN. For each security CUSIP in eMAXX, we meticulously compile a list of all potential other identifiers by examining not only the information provided for the respective CUSIP from the API, but also considering any other eMAXX CUSIPs that had this respective CUSIP as their potential duplicates.

After identifying the complete list of potential other identifiers, we set aside issues with only one unique identifier. For the remaining issues, we focus on bundles of two and three identifiers, as they are easier to resolve. Within these sets, we attempt to match a few simple cases. Many of these issues are privately placed bonds that are not initially eligible for trading by public American investors, at least for a certain period after the initial issue. A common scenario in this group is when a security is issued with separate 144A and Regulation S identifiers: the former for selling to American Qualified Institutional Buyers and the latter for selling to overseas (mostly European) investors. After a certain period, if the 144A security becomes qualified to be registered with the SEC, both the Registered and 144A versions may be entirely or partially exchanged for the Registered bond. To illustrate the issue, consider Table A38, which depicts the amount outstanding associated with a bond issued on September 30, 2009, by ACCO BRANDS CORP, with a total par outstanding of USD 460 million and a maturity date of March 15, 2015. This bond was partially sold under the Regulation S CUSIP (or CINS) U00445AB9 to overseas investors and partially sold under the 144A CUSIP 00081TAC2 to American Qualified Institutional Buyers (QIBs) and both of these issues were fully exchanged to CUSIP 00081TAD0 on May 14, 2010.

The issue that prompted us to identify and address the problems of duplicate bond issues is twofold: Firstly, if a researcher simply wants to determine the total par outstanding of bonds for ACCO BRANDS CORP in, for example 2009Q3, and they naively sum up all the par values associated with different bond CUSIPs of this firm, he may arrive at a total greater than the balance sheet's total amount of outstanding bonds, as he fails to recognize that two seemingly different CUSIPs 00081TAC2 and U00445AB9 actually belong to the same bond. Secondly, and perhaps more importantly for our research, many funds in eMAXX continue reporting their holdings using the identifier by which they initially purchased the security, even if a new CUSIP and ISIN are assigned to their bond. By addressing this issue, if we observe a bondholder claiming ownership of CUSIP 00081TAC2 or U00445AB9 in quarters after 2010Q2, we would understand that they hold CUSIP 00081TAD0 in reality.

A7.3 Bond Identifiers

A7.3.1 Regulations

A private placement is a type of securities offering made to a small group of selected investors rather than the general public. In a private placement, the securities are typically sold to institutional investors such as banks, insurance companies, hedge funds, and other large

Table A38: Example of Duplicate Identifiers - ACCO BRANDS CORP

quarter	00081TAD0	00081TAC2	U00445AB9
	Registered	144A	Regulation S
2009Q3	0	460	460
2009Q4	0	460	460
2010Q1	0	460	460
2010Q2	460	0	0
2010Q3	460	0	0
2010Q4	460	0	0
2011Q1	460	0	0
2011Q2	454.9	0	0
2011Q3	425.14	0	0
2011Q4	425.14	0	0
2012Q1	425.14	0	0
2012Q2	13.415	0	0
2012Q3	0	0	0

This table shows the amount outstanding associated with a bond issued on September 30, 2009, by ACCO BRANDS CORP, with a total par outstanding of USD 460 million and a maturity date of March 15, 2015 that had three associated Identifiers (CUSIPs.) The Identifiers and their type are shown for each bond along with their par outstanding in USD millions.

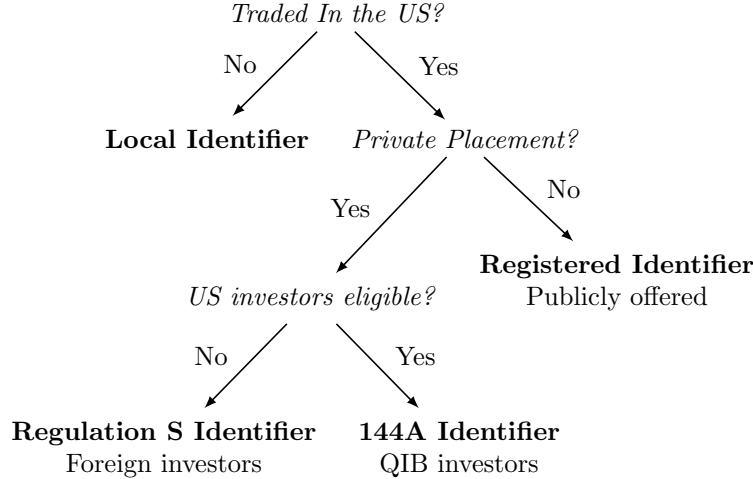


Figure A3: Bond Identifiers

investors. Private placements are typically exempt from the registration requirements of the Securities Act of 1933, which means that issuers can avoid the time, cost, and regulatory burden of a public offering. Instead, issuers can negotiate the terms of the offering directly with the investors, including the price, interest rate, maturity date, and other securities features.

In response to the rising internationalization of capital markets, the SEC issued Regulation S and Rule 144A in April 1990. Before 1990, few foreign corporations entered the US public debt markets because the SEC’s registration and disclosure procedures were cumbersome. Meanwhile, the private debt market in the United States was essentially illiquid since investors had to keep assets for at least two years before reselling them. Regulation S and Rule 144A provided exceptions for this waiting time and SEC registrations, conditional on the buyers of these issues. The essential distinction between the two rules is found in their respective jurisdictions and geographical bounds. Regulation S oversees both domestic and international issuers’ registration of offshore placements and offers a safe harbor for securities placement in non-US markets. It also permits these issues to be traded on various foreign markets. However, Rule 144A only applies to privately placed securities issued in the United States and sold to US Qualified Institutional Buyers (QIBs).

A7.3.2 Issue Identifiers

To correctly group multiple identifiers of the same bond issue, the first step is understanding why some securities have multiple identifiers. Two following cases may result in a multiplicity of identifiers. First, when the name CUSIP (the 6-digit CUSIP, also referred to as issuer’s

CUSIP) of the issuer changes, so does the CUSIP and ISIN of its issues. For example, if company A acquires company B at time t , the outstanding bond issues of B will be exchanged for an equivalent outstanding issue from A, with a new identifier pointing to A.

Second, depending on the eligible investor universe, the same bond issue might have multiple ISINs. Figure A3 shows the most common cases in which multiple active identifiers can point to the same issue. A bond not traded in the US will have one unique local set of identifiers. If it is traded in the US without private placement (equivalently if this bond is publicly traded), then it has to be registered with SEC, and it will get a registered CUSIP. However, suppose it is traded in the US only through private placement. In that case, the set of assigned identifiers depends on whether it will be sold to US or foreign investors.

If one issue only fits in one of the four subgroups in Figure A3, the observed identifier in eMAXX uniquely identifies the issue with certainty. The complication arises when one issue falls into two or more subgroups simultaneously. For example, a privately placed issue under rule 144A can later be registered with SEC and offered to the public. If it happens, this issue will have one 144A ISIN and one registered ISIN. Previous Appendix Section showed an example of such coupled securities, their accounting of their amount outstanding, and their identifiers for an example firm.

Regulation S securities can be offered in two ways: 1) as standalone Regulation S issues or 2) as concurrent Regulation S and Rule 144A offers, which differ in several respects. The investor base changes between the two segments: solo issues can only be offered to offshore investors, but combined issues can be sold to non-US offshore investors and US Qualified Institutional Buyers (QIBs). The main distinction is that the tranches of combined issues are subject to various jurisdictional limitations since offers outside the United States are subject to Regulation S, while those within the United States are subject to Rule 144A. The issuance and issuer features of the two types of issuances differ as well. Low credit grade issuers from the United States or nations geographically adjacent to the United States, such as Canada, Brazil, or Mexico, usually issue joint offerings. On the other hand, a typical solo issuance is often provided by a good credit quality issuer from a European country [Li et al. \(2021\)](#).

Crucially, security with both Regulation S and Rule 144A tranches is treated as one security in par value to prevent double-counting in databases and bond indices. In a similar manner, securities that originated under Rule 144A with registration rights and later registered with the SEC are treated as the same security for the treatment of the amount outstanding. We also address this issue by aggregating the bond ownership data in eMAXX.

Figure A4, taken from Refinitiv workspace, illustrates the common cases involving coupled securities for *American International Group*, henceforth AIG, as an example. Firstly, AIG

Description	Maturity Date	Issue Date	Asset Status	Coupon	Issued Amount (USD)	Amount Outstanding (USD)	Offering Type	Rank (Seniority)
AIG 6.250 01-May-2036	01-May-2036	23-Aug-2006	Issued	6.25	999,975,000	584,261,000	Exchange Offer	Senior Unsecured
AIG 6.250 01-May-2036	01-May-2036	20-Apr-2006	Issued	6.25	1,000,000,000	25,000	Regulation S	Senior Unsecured
AIG 0.050 27-Jun-2036 MTN	27-Jun-2036	28-Jun-2006	Issued	0.05	7,315,824	7,315,824	Underwritten-Agent	Senior Unsecured
AIG 0.050 20-Aug-2037 FRN MTN	20-Aug-2037	20-Aug-2007	Issued	0.05	3,657,912	3,657,912	Underwritten-Agent	Senior Unsecured
AIG 6.820 15-Nov-2037	15-Nov-2037	15-Nov-2011	Issued	6.82	256,161,000	13,000	Private placement-144A	Senior Unsecured
AIG 6.820 15-Nov-2037	15-Nov-2037	15-Nov-2011	Issued	6.82	256,161,000	13,000	Regulation S	Senior Unsecured
AIG 6.820 15-Nov-2037	15-Nov-2037	25-Sep-2012	Issued	6.82	256,133,000	143,369,000	Exchange Offer	Senior Unsecured
AIGVH / AIG 8.875 26-Jan-2040	26-Jan-2040	26-Jan-2010	Issued	8.875	91915WAB8	199,115,000	Underwritten	Senior Unsecured
AIGCFH / AIG 4.350 05-Apr-2042 141	05-Apr-2042	05-Apr-2022	Issued	4.35	21871XAJ8	500,000,000	Private placement-144A	Senior Unsecured
AIGCFH / AIG 4.350 05-Apr-2042 141	05-Apr-2042	05-Apr-2022	Issued	4.35	500,000,000	500,000,000	Regulation S	Senior Unsecured
AIGPFH / AIG 0.900 17-Jun-2042 FRN MTN	17-Jun-2042	17-Jun-2014	Re-Opening	0.9	5,291,000	5,291,000	Underwritten-Agent	Senior Unsecured
AIG 4.500 16-Jul-2044 144	16-Jul-2044	16-Jul-2014	Re-Opening	4.5	2,250,000,000	746,612,000	Underwritten	Senior Unsecured
AIG 4.800 10-Jul-2045 145	10-Jul-2045	10-Jul-2015	Issued	4.8	750,000,000	750,000,000	Underwritten	Senior Unsecured
AIGSAA / AIG 7.570 01-Dec-2045	01-Dec-2045	11-Jul-2013	Issued	7.57	500,000,000	31,465,000	Private placement-144A	Junior Subordinated Uns.
AIGSAA / AIG 8.120 15-Mar-2045	15-Mar-2045	15-Mar-1997	Issued	8.12	500,000,000	500,000,000	Private placement-144A	Senior Unsecured
AIGSAA / AIG 8.125 15-Mar-2045	15-Mar-2045	11-Jul-2013	Issued	8.125	500,000,000	141,985,000	Private placement-144A	Junior Subordinated Uns.
AIG 4.575 27-Nov-2045 36 MTN	27-Nov-2045	21-Nov-2006	Issued	4.575	20,000,000	18,246,000	Underwritten-Principal	Senior Unsecured
AIG 4.515 09-Dec-2045 36 MTN	09-Dec-2045	09-Dec-2006	Re-Opening	4.515	51,551,000	300,000	Underwritten-Principal	Senior Unsecured
AIG 4.511 01-Jun-2047 37 MTN	01-Jun-2047	01-Jun-2007	Issued	4.5106	38,055,000	38,055,000	Underwritten-Agent	Senior Unsecured
AIG 22-Nov-2047 22	22-Nov-2047	22-Nov-2017	Issued	0	400,000,000	400,000,000	Regulation S	Senior Unsecured
AIG 4.485 27-Nov-2047 37 MTN	27-Nov-2047	27-Nov-2007	Re-Opening	4.4853	67,471,000	2,500,000	Underwritten-Principal	Senior Unsecured

Figure A4: Some outstanding bonds of AIG

has standalone Reg S (Maturity = 22 Nov 2047) and Rule 144A (maturity = 15 Mar 2046) bonds whose par values are independently recorded. It has also several sets of combined Reg S and Rule 144A bonds (for instance, the two with maturity = 05 Apr 2042) whose par values are calculated collectively together, as you can read from the tip shown beside the pointer in the photo. Finally, it has also tranches of three bonds, a reg S, a 144A, and a public bond (the three bonds with maturity = 15 Nov 2037). In this case, the two reg S and 144A were issued in 2011 with a par amount of 256,161,000 USD. Then, in 2012, 256,133,000 USD of the total par was exchanged for public bonds, and 13,000 USD remained as it was. The announcement for this change was as follows:

25-Sep-2012 Asset USD 256,133,000 exchanged to CUSIP 026874CW5
on 25-Sep-2012. AIG is offering to exchange these notes
due November 15, 2037 for its outstanding Series
A-1 and Series A-6 Junior Subordinated Debentures.

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