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Abstract

We analyze differences in the pricing of syndicated loans between U.S. and European loans. For credit lines, U.S. borrowers pay significantly higher spreads, but also lower fees, resulting in similar total costs of borrowing in both markets. For term loans, U.S. firms pay significantly higher spreads. While European firms across the rating spectrum issue terms loans, only low quality U.S. firms rely on term loans. U.S. issuers perform worse after loan origination compared to European issuers, which explains 30% of the spread differential. Increasing loan supply by institutional lenders in the U.S. since 2003 eventually fully removed the term loan pricing gap.

JEL-Classification: G30, G20, G15

Keywords: Loans, corporate debt, fees, market integration, globalization

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1. Introduction

In this paper, we analyze pricing differences between the U.S. and the European loan market. Looking at pricing differences across markets is important as it helps us to understand international loan market integration of these markets as well as prevalent differences in pricing structures and composition of firms active in these markets. For example, Carey and Nini (2007) were the first to show that average spreads for syndicated loans differ systematically between the European and the U.S. market. Loan spreads in the corporate syndicated loan market were, on average, about 30 basis points (bps) smaller in Europe during the 1990 to 2002 period. This finding is puzzling as financial theory suggests that arbitrage opportunities should be competed away unless this is prevented by market frictions, precisely because the market for syndicated loans is globally integrated with a large number of international players (borrowers, banks, and non-bank lenders). Therefore, it is not surprising that the existence of this puzzle has stirred a wide debate among academics. In this paper, we revisit the pricing puzzle documented by Carey and Nini (2007), CN henceforth, and offer a novel perspective on this pricing "gap".

We start by reproducing the result from CN over the same sample period used in their paper (1992-2002) and the same single statistic to measure a firm's borrowing costs (i.e., the All-In-Spread-Drawn (AISD)). We replicate their result with both a similar economic and statistical magnitude. Berg, Saunders and Steffen (2015), henceforth BSS, have shown that loan contracts are substantially more complex. Loans contain various fees as well as spreads that also vary between loan types (term loans and credit lines, in particular). Consequently, it is insufficient to describe a loan contract by simply using a single interest rate spread such as the AISD. We extend the approach by BSS to investigate the loan-spread differential between large U.S. and European firms taking into account fees. This is important as it allows us to identify differences in financial contracting between two of the most important capital markets globally. Does the pricing gap exist across the different pricing dimensions in loan

contracts and for different loan types? And, does the pricing gap persist over time? Financial markets have become more innovative attracting a large number of (non-bank) institutional investors that have increased the liquidity of the loan markets. How did elevated institutional supply by lenders affect loan pricing and, importantly, the pricing differences between U.S. and European loans? These are important questions that we seek to answer in this paper.

We explicitly distinguish between term loans (approximately 30% of the Dealscan sample) and lines of credit (approximately 70% of the Dealscan sample). Thus, lines of credit comprise the majority of loans in our sample. We document that the prizing puzzle is lower for lines of credit (13 bps lower AISD for European borrowers) than for term loans (42 bps lower AISD for European borrowers). Crucially, lines of credit and term loans differ significantly in their contractual design: while term loans are always fully drawn down at loan origination, lines of credit can either be drawn or left undrawn. Borrowers pay the All-In-Spread-Drawn (AISD) on the drawn amount, while they pay the All-In-Spread-Undrawn (AISU) on the undrawn amount. We document that European borrowers pay a lower AISD compared to U.S. borrowers (as shown by CN), however, they pay a significantly higher All-In-Spread-Undrawn (AISU). We show that even under conservative assumptions for the loan draw-down rate, the total costs of borrowing (TCB) does not differ significantly across the two markets.[1] Overall, our results suggest that the pricing *structure* of lines of credit differs fundamentally between European and U.S. syndicated loans. Taking into account these different loan-pricing structures allows us to explain the pricing puzzle for lines of credit.

In a second step, we show that the composition of term loan borrowers differs between the U.S. and the European market. That is, (almost) all firms enter the market for credit lines to obtain liquidity insurance (Sufi (2009)). In contrast, firms that require term financing can choose between issuing a corporate bond and obtaining a bank loan. We document that poor-

[1] The total cost of borrowing is a new cost measure developed in BSS that differentiates between loan types, comprises various fees and accounts for different draw-down rates of credit lines. We explain this measure in detail in Appendix B.II.

creditworthy firms are much more likely to use term loans as their source of borrowed funds, while firms of all credit qualities obtain credit lines. Consistent with Europe being a bank-based market, this effect is significantly stronger in the U.S. than it is in Europe. High credit quality European firms are more likely to seek out term loans than high quality U.S. firms (who issue bonds instead).

We further document that European term loan issuers have a significantly better post-issue performance compared to U.S. term loan issuers: ratings of U.S. firms that obtain a term loan decline by 0.7 notches more in the first year after loan origination compared to European term loan issuers. Given the extensive evidence on the predictability of agencies' credit rating changes (Altman and Kao (1998); Delianedis and Geske (1999); Norden and Weber (2004); Löffler (2005)), is seems reasonable to assume that these rating changes are anticipated by the market. This is consistent with the narrative that firms with a sliding creditworthiness are not able to obtain bond funding, but rather have to rely on monitoring-intensive bank loans. Conditioning on borrower future performance significantly reduces pricing differences between the U.S. and the European term loan market.

We extend the original CN sample (1992-2002) and include the 2003 to 2007[2] period. Several interesting results emerge. In the 2003 to 2007 period, the AISD difference of credit lines issued to U.S. versus European borrowers increases by almost 50 percent. Again, the pricing difference disappears once we include fees to the loan spread differential. The term loan spread difference, on the other hand, is only marginally significant and drops by about two-thirds in magnitude in the later 2003-2007 period. Moreover, splitting the term loan sample into investment grade and non-investment grade rated loans shows that the loan spread puzzle does not persist for non-investment grade rated borrowers. In other words, term loan spreads between the U.S. and Europe converged over the 2003 to 2007 period and we document that this was caused by a decrease in U.S. relative to European term loan spreads.

[2] We end in 2007 to avoid the effect of crises years. As discussed later our main results are unaffected if we extend the sample to 2011.

Our results are consistent with the literature documenting a substantial increase in supply of capital in U.S. loan markets after 2003 that lasted until the crisis started, particularly from institutional investors. Shivdasani and Wang (2011), for example, show that supply of capital from CLO funds decreased spreads of leveraged buyout (LBO) loans and the use of covenants, while increasing the availability of debt financing. Similarly, Ivashina and Sun (2011) show that institutional demand pressure (i.e., for an increase in the supply of debt financing) reduced loan spreads on those (term) loans usually provided by institutional investors even below spreads demanded by banks for loans to otherwise identical firms. We also observe a substantial increase in U.S. institutional term loan issuances after 2001. The European loan market, on the other hand, largely lacked this increase in institutional loan suppliers. We hypothesize and empirically test whether the additional loan supply from institutional investors reduced the spreads of U.S. vis-à-vis European loans, and whether the pricing gap for term loans was removed or reduced. Our results are consistent with this hypothesis.

We perform several robustness tests. For example, Gaul and Uysal (2013) argue that unobserved differences in firm volatility play an important role in explaining pricing differences between U.S. and European firms. We show that higher equity volatility (as a measure of unobserved firm asset volatility) cannot explain pricing differences of U.S. versus European credit line issuances. A higher equity (asset) volatility suggests a higher expected draw-down rate of credit lines, which also increases the commitment fees paid (BSS, 2015). We document, however, that commitment fees of loans to European firms are larger than in the U.S. In the subsample of *unrated* term loans, we find that equity volatility explains loan spread differences between the U.S. and Europe, which is intuitive given the larger

informational asymmetries associated with unrated firms. Importantly, however, the results in the rated subsample are unaffected when equity volatility enters the regression model.[3]

Our paper relates to different strands of the literature: first, our paper emphasizes the importance of explicitly distinguishing between different types of loans (term loans and lines of credit in particular) when analyzing loan pricing. Gatev and Strahan (2009) show that term loans and lines of credit differ in their *syndicate structure*: while commercial banks dominate in lending of lines of credit, investment banks, insurance companies, and hedge funds dominate in term lending. BSS (2015) document that the *pricing structure* of term loans and lines of credit differs significantly and reflects the various options embedded in both loan contracts. We contribute to the loan contracting literature by analyzing pricing structures in an international setting and by showing that pricing structure differences can explain the loan spread differences between U.S. and European syndicated loans for credit lines.

Second, we add to the literature on the choice between private and public debt. While contingent liquidity is almost exclusively provided by banks via credit lines, term funding can also be obtained in the bond market (Gatev and Strahan (2009); Kashyap, Rajan, and Stein (2002)).[4] We document that both in Europe and the U.S., companies across the credit spectrum obtain credit lines. In Europe, however, both high and low quality firms obtain term loans, while in the U.S. high quality firms are more likely to issue public debt (De Fiore and Uhlig (2011). Our results indicate that European term loan issuers are not directly comparable to U.S. term loan issuers – even after controlling for observable differences in credit risk. Further, by documenting that the structure of the U.S. term loan market differs significantly from that of the European market, we add to the growing literature on the international

[3] We perform other robustness tests as well. For example, we extend our results and include the 2008 to 2011 period and find that our results are identical. We also differentiate between relationship and non-relationship loans that might have an impact on the loan spread difference. Relationship effects, however, do not explain our findings. We do not report these tests for brevity but they are available from the authors upon request.

[4] See also Denis and Mihov (2003), Hoshi, Kashyap, and Scharfstein (1993), Houston and James (1996), and Carey, Post, and Sharpe (1998) on the choice between public and private debt.

syndicated loan market structure (Esty and Megginson (2004); Giannetti and Laeven (2012); Giannetti and Yafeh (2012)).

The paper proceeds as follows. In section 2, we discuss the institutional environment. In Section 3, we describe the data, provide descriptive statistics, and show the base specification. We investigate the loan pricing puzzle separately for credit lines and term loans in section 4 and discuss alternative hypotheses in section 5. Section 6 concludes.

2. Institutional Environment and Framework

Before we empirically investigate differences in loan contracts for U.S. versus European loans, we review the theoretical and empirical literature on loan contracting to provide an economic framework in which we can interpret our empirical results. We focus on two aspects in particular, i.e., the conceptual differences between credit lines and term loans, and the choice firms have to borrow from banks or corporate bond markets.

2.1. Credit Lines versus Term Loans

Credit line and term loan contracts are inherently different, however, most of the empirical literature lumps them together.[5] Term loans have an overall plain structure: firms receive the full loan amount upfront and repay the loan at maturity, usually 5 to 8 years after loan origination ("bullet repayment"). They pay contractually set spreads and fees until the loan matures. Some term loans (sometimes referred to as "Term Loan A") are amortizing loans, where borrowers pay interest and principal as scheduled until maturity.

Credit lines are not only more frequently used in corporate finance, but are also more complex.[6] Instead of outright funding, credit lines provide contingent liquidity. That is, instead of drawing down the committed loan amount, firms keep the credit line as insurance

[5] An exception being Gatev and Strahan (2009) as noted earlier as well as BSS who empirically show how the pricing structure reflects the complexity of loan contracting.
[6] Sufi (2009) reports that 82% of firm-years in the U.S. and even 32% of otherwise all-equity financed firms have credit lines.

against future liquidity needs (for example, as a backup for a commercial paper program). This complexity is also reflected in the pricing structure of credit lines which consists of various fees in addition to the loan spread.

Fees perform certain functions and are therefore important. First, they account for options embedded in credit lines, such as the option to draw-down the credit line when firms need liquidity (Thakor, Hong, and Greenbaum (1981); Thakor (1982); Ho and Saunders (1983); Boot, Thakor and Udell (1987); Thakor and Udell (1987); Chateau (1990); Shockley and Thakor (1997)). Second, they help banks to screen borrowers if the latter have private information about their creditworthiness (Thakor and Udell (1987)). Indeed, BSS (2015) show empirically how and why fees come in various forms in loan contracts and how they vary across different loan contracts based on borrower fundamentals.

To summarize, lenders do not use a single statistic such as the interest rate spread to ensure an appropriate expected return but a combination of fees and spread. It is thus a testable hypothesis whether the observed pricing differential between U.S. loans and European loans over the 1992-2002 period was a function of the full pricing menu of loan contracts as well as the type of loan considered, and not just a function of a simple loan interest rate spread. In particular, as fees are more important for credit lines than term loans, we expect so see a larger effect of fees loan pricing for credit lines.

2.2 Bank versus Bond Markets

As described above, the term loan market differs from the market for credit lines in several ways. Most importantly, while term loans provide relatively long-term funding to borrowers, lines of credit usually provide short-term sources of contingent liquidity. While term funding is also available in the bond market, contingent liquidity is almost exclusively provided by banks (Gatev and Strahan (2009); Kashyap, Rajan, and Stein (2002)). This implies that firms seeking liquidity insurance have to enter the market for credit lines. In contrast, firms that

require term funding have the option to either issue a corporate bond or obtain a term loan. Bond issues are especially attractive for large rated companies with low credit risk that do not require close monitoring by banks.

Several studies show that European countries have bank-based capital markets in that corporations obtain most of their debt financing from banks (De Fiore and Uhlig (2011); Gorton and Schmid (2000)). Figure 1 plots the debt structure of U.S. and European companies since 2002 based on data from Capital IQ.[7]

[Figure 1]

Figure 1 provides interesting insights into the debt structure of European and U.S. companies that are consistent with prior literature. Panel A of Figure 1 shows that while rated European firms obtain about 45% of their debt financing via bond markets, the ratio of bond debt to other debt is over 75% for rated U.S. companies. Panel B of Figure 1 plots the number of loan issues by credit quality. While we observe both high and low quality term loan issuers in Europe, the vast majority of term loan issuers in the U.S. are non-investment grade firms.

This descriptive evidence suggests that large European companies are more likely to borrow via term loans, while large U.S. companies satisfy their funding needs via bond issues. It is thus a testable hypothesis whether a pricing puzzle is also prevalent in the term loan market for investment grade firms, i.e., it should be more likely to observe larger low risk European companies issuing term loans but not large low risk U.S. companies (who issue bonds instead).

[7] The figure is based on all firms in our sample with available data from CapitalIQ. The data sample will be described in more detail in the next section. The broad pattern of differences between U.S. and European firms' debt structures is not sensitive to the sample choice.

3. The Loan Pricing Puzzle

3.1. Data

We obtain information on individual loan facilities from the Dealscan database maintained by the Loan Pricing Corporation (henceforth, LPC). LPC contains detailed information on loans to large firms. While a large part of the literature using LPC data focuses on loans to U.S. corporations, LPC also provides information on large non-U.S. loans.[8] To investigate loan spread differences between U.S. and European loans, we extract all loan facilities issued by borrowers in the U.S. and Europe. Following CN, we exclude all loans issued by borrowers that are not rated at the time of the loan issue. Agency credit ratings are obtained from Standard and Poor's. Focusing on loans by rated companies ensures that we can control for any observable differences in credit risk between U.S. and European loans without much noise. Consistent with CN, we retain financial firms in our sample, however, all our results remain qualitatively unaffected if we exclude firms with SIC codes 6000 – 6999.[9] We restrict our sample to the 1992 to 2007 period, i.e., we exclude the financial crisis, which affected the U.S. and Europe differently. Importantly, however, all our results remain qualitatively unaffected if we analyze the 1992 to 2011 period that includes the 2008-2009 crisis years.[10]

We follow CN and do not control for borrower characteristics other than the credit rating in our main analyses to avoid losing a significant number of observations (in particular for the already small European subsample). However, we additionally obtain borrower information from Compustat for robustness.[11] All our results are qualitatively similar if we control for items such as total assets, leverage, profitability, and the market-to-book ratio.[12] All variables are described in detail in Appendix A.

[8] See for instance, Giannetti and Laeven (2012), Giannetti and Yafeh (2012). Saunders and Steffen (2011) use Dealscan data to investigate loan spread differences between public and private firms in the UK.
[9] The results are available upon request.
[10] The results are available on request and are not included in the paper for reasons of space.
[11] We use Michael Robert's Dealscan-Compustat Linking Database to merge Dealscan with Compustat (see Chava and Roberts (2008)). We obtain borrower information from the last available fiscal year before the loan issue.
[12] The results are available upon request.

Our final sample consists of 12,721 U.S. and 1,075 European loan tranches issued by 2,242 distinct borrowers (of which 263 are European firms). Table 1 presents descriptive statistics for the final sample, segregated into loans issued by U.S. and European borrowers. All values are winsorized at the 1% and 99% levels.

[Table 1]

Panel A of Table 1 shows loan characteristics. The AISD differs significantly between both markets and the median spread is 57 bps lower for European loans. Strikingly and consistent with CN, European loans are much larger than U.S. loans. The mean/median loan amount is \$540/\$300 million for U.S. loans and \$945/\$505 million for European loans. Loans to European corporations also have a longer maturity compared to loans to U.S. corporations – the average maturity is 46 (58) months for U.S. (European) loans. Further, the fraction of credit lines is higher in the U.S. market (71%) than in the European market (50%). Panel B of Table 1 shows borrower characteristics. Consistent with CN, we find that the fraction of borrowers that have an investment grade rating is larger in the European loan sample than in the U.S. sample. 77% of the borrowers have an investment grade rating at the time of the loan issue in the European market compared to 55% in the U.S. market.

3.2. Base Specification

To examine loan spread differences between U.S. and European corporations, we first estimate a model similar to the main specifications in CN as a benchmark and thus restrict the time period to 1992 to 2002. We use a regression model of the following form.

$$AISD = \beta_0 + \beta_1(Europe\ (0/1) + \sum \beta_i(Loan\ Characteristics_i) + \sum \beta_j\big(Borrower\ Characteristics_j\big) + \sum \beta_k(Loan\ Characteristics_k).$$

The AISD is the spread over LIBOR. Again note that we follow CN and do not control for borrower characteristics other than the credit rating categories (dummies for each notch) in our main analyses to avoid losing a significant number of observations.[13] Loan characteristics include the natural logarithm of the loan amount in USD, an indicator variable for secured loans, and dummy variables for different loan maturities (1–3 years, 3–6 years, >6 years, and <1 year (omitted category)).[14] Further included are loan type dummies (term loan, bridge loan, unknown, and line of credit (omitted category)), loan purpose dummies (takeover and recapitalization finance, loans financing ships, aircraft, and special-purpose vehicles, project finance, commercial paper backups, and general corporate purpose loans (omitted category)), year dummies, and industry fixed effects (based on 2-digit SIC codes). We report the results in Panel A of Table 2.

[Table 2]

We find that the AISD is 21bps lower in Europe compared to the U.S. over the 1992 to 2002 period (column (1)). The magnitude of the effect is similar to the results reported by CN (-25bps for the 1992 to 1998 period and -37bps for the 1999 to 2002 period, see CN Table VII column (A)). The average AISD in the U.S. is 147bps, i.e., European firms payed significantly less compared to the unconditional mean spread on U.S. loans. As expected, larger loans have lower spreads, while secured loans have higher spreads, on average. Loans with a maturity of >6 years have higher spreads than short-term loans, i.e., loans with maturities below one year (omitted category). The other maturity indicators are not statistically significant.

We then distinguish between investment grade (column (2)) and non-investment grade loans (column (3)). The pricing puzzle is broadly similar for both categories in terms of

[13] Our results are qualitatively similar if we follow the robustness tests in CN and control for items such as total assets, leverage, profitability, and the market-to-book ratio. The results are available upon request.
[14] Note that, in contrast to CN, we do not include rating migration indicators to avoid further restricting the sample.

economic magnitude (23bps for investment-grade loans versus 21bps for non-investment grade), but the statistical significance is higher for investment grade borrowers.

We then distinguish between credit lines (column (4)) and term loans (column (5)) and find that the loan spread puzzle extends to both loan types. While credit lines of European firms have 12bps lower spreads, the loan spread difference increase to 65bps for term loans. We test the null hypothesis that the loan cost advantage of European firms is of the same size for credit lines and term loans and reject this hypothesis at any conventional confidence level.

In a next step, we extend the sample period to also include the 2003 to 2007 period (before the financial crisis started).[15] We run the same regressions and report the results in Panel B of Table 2. Two interesting results emerge. First, lower loan spreads for credit lines of European borrowers also extends to the longer sample. The magnitude of the difference even increases from 12bps to 17bps. Second, the loan spread difference for term loans becomes substantially smaller (22bps versus 65bps). That is, term loan spreads between the U.S. and Europe began to converge over the 2003 to 2007 period.

Our results are consistent with the literature documenting a substantial increase in supply of capital in U.S. loan markets after 2003 that lasted until the crisis started in the fall of 2007. This enhanced supply was from the increased entry of institutional investors into the loan syndication market. Shivdasani and Wang (2011), for example, show that supply of capital from CLO funds decreased spreads of LBO loans while increasing the availability of debt financing. Similarly, Ivashina and Sun (2011) show that institutional demand pressure (i.e., an increase in supply of debt financing) reduced loan spreads on those (term) loans usually provided by institutional investors even below spreads demanded by banks for loans to otherwise identical firms. We investigate this in more detail in Section 4.3 below.

[15] As noted earlier our results are robust if we include the crisis years.

In the following sections, we investigate how differences in loan contract structures can help us understand these observed spread pricing differences between U.S. and European loans.

4. Understanding the Prizing Puzzle

4.1. Pricing Puzzle for Lines of Credit

Our results so far indicate that the magnitude of the pricing puzzle for AISD differs for term loans and lines of credit. We analyze the pricing of lines of credit in more detail in this section. Distinguishing between term loans and lines of credit is important, as term loans provide longer term funding to borrowers, while lines of credit provide short-term contingent liquidity. Contingent liquidity means that borrowers do not necessarily immediately use the entire loan amount that is committed by the bank. However, most loan pricing studies implicitly make this assumption by solely focusing on the All-In-Spread-Drawn[16] (AISD) as the main proxy for the price of a loan. We calculate the Usage-Weighted-Spread (UWS) as more comprehensive measure of credit line pricing. The UWS is a weighted average of the AISD, i.e., the spread paid by the borrower on used loan commitments, and the All-In-Spread-Undrawn[17] (AISU), i.e., the spread paid by the borrower on committed but not yet used loans.

$$UWS(PDD) = PDD*AISD+(1-PDD)*AISU \quad (1)$$

PDD (Probability of draw-down) is the probability that a committed loan is actually drawn down. A PDD of one implies that the borrower borrows the entire commitment under

[16] The AISD contains the spread and the facility fee. Facility fees are fees paid on the entire committed amount, regardless of usage.

[17] The AISU contains the commitment fee and the facility fee. Commitment fees are fees paid on the unused amount of loan commitments. Facility fees are fees paid on the entire committed amount, regardless of usage. Commitment fees and facility fees are usually mutually exclusive.

the loan agreement; a PDD of zero implies that the borrower never actually draws down the loan commitment at all. Ideally, one should use a firm/loan specific PDD, however, this information was not readily available prior to 2002. However, BSS (2015) use credit line usage data from 2002 onwards from CapitalIQ to show that the credit line draw-down rate is on average 25-35% for rated U.S. firms.[18] We confirm that credit lines usage is similar for Europe and thus we use a draw-down rate of 25-35% in the following specifications.

Figure 2 shows the pricing structure across markets. We find that, while the AISD is lower in the European market, the AISU, in contrast, is significantly higher in the European market relative to the U.S. market. This implies that the overall or actual total cost of borrowing (TCB) may not be different for U.S. borrowers relative to European borrowers. For example, for investment grade borrowers in Europe, the AISD for credit lines is on average 48 bps, which is approximately 16 bps lower than in the U.S. (64 bps). For the AISU, however, we observe the opposite result: the AISU in the European market is *larger* than the AISU in the U.S. market (18 bps versus 14 bps). For borrowers with a below investment grade rating, the AISD (AISU) for the average European borrower is 156 bps (47 bps), the AISD (AISU) for the average U.S. borrower is 195 bps (40 bps).[19]

[Figure 2 here]

BSS (2015) show that fees are an integral part of loan pricing. More than 80% of syndicated loan contracts contain fees and accounting for fees can lead to significantly higher costs of corporate borrowing. We follow BSS (2015) and calculate a measure for the total cost of borrowing (TCB). The TCB expands upon the UWS by adding further fees (upfront fees, cancellation fees, and utilization fees) and by predicting usage rates using observable firm characteristics.[20]

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[18] See Table III in BSS.

[19] Appendix Table B.1 provides descriptive statistics for Figure 2 and decomposes both AISD and AISU into its components.

[20] We refer to BSS (2015) and Appendix B of this paper for a detailed description of the TCB measure. Dealscan is a reliable data source for the fees, i.e., correctly reports the existence and magnitude of these fees in

Table 3 provides multivariate regressions for the AISD, AISU, and the usage-weighted spread as defined in (1). Consistent with the univariate evidence from Figure 2, the AISD is lower for European credit lines, but the AISU is *higher* for European credit lines. For the usage-weighted spread, differences between U.S. and European credit lines are economically small and statistically insignificant or only marginally significant (columns (3)-(5)). For example, the coefficient for the European market dummy is only -1 bps assuming a draw down probability of 25% (column (5)). Using the TCB measure which adds other loan fees specified in loan contracts – as defined in BSS (2015) and Appendix B in this paper – further reduces any pricing differences between the U.S. and the European markets. As can be seen, the coefficient on the European market dummy is close to zero and statistically insignificant in the TCB regression.[21]

[Table 3 here]

Figure 3 shows the pricing puzzle for credit lines over time, distinguishing between AISD and TCB. The figure illustrates that the pricing puzzle is significantly less volatile for the TCB relative to the AISD, i.e., the difference between the AISD and the TCB results are not driven by some outlier years. Overall, we provide evidence that, while the pricing *structure* differed between the U.S. and the European credit line markets, the overall total costs of borrowing did not.

[Figure 3 here]

more than 95% of the cases. BSS use a random sample of 1,000 loan contracts from the EDGAR database, report the fee information disclosed in the original loan contracts and compare these fees with information from Dealscan for the most prominent fee types such as commitment fee, facility fee, utilization fee and cancellation fee. A detailed discussion related to upfront fees is provided in BSS. This fee type is usually less frequently available due to the private nature and negotiation of upfront fees. See also Appendix B for further details on the TCB calculation.

[21] In our results, the main difference between the UWS and TCB results stems from the usage prediction. In particular, the usage rate prediction from BSS is lower for investment grade firms, that is, for the set of firms with the largest pricing puzzle for the AISD.

4.2. Pricing Puzzle for Term Loans

The previous section shows that the pricing puzzle for lines of credit disappears after accounting for unused commitment fees (AISU) and other fees. In this section, we analyze the pricing difference between European and U.S. borrowers in the term loan market.

[Figure 4 here]

Our key argument is that – due to the existence of a deeper corporate bond market in the U.S. – term loan issuers in the U.S. have different characteristics compared to European term loan borrowers. In particular, term loan borrowers in the U.S. are of a worse credit quality – both with respect to their existing credit rating at loan origination and with respect to their future credit rating changes. It is thus a testable hypothesis whether differences in credit quality drive pricing differences between U.S. and European term loans.

Figure 4 provides a univariate comparison of credit rating changes following loan issues. The figure suggests that U.S. firms perform worse than European firms following term loan issues. In particular, U.S. investment grade firms are significantly more likely than European investment grade firms to be severely downgraded in the year following a term loan issue. The likelihood of a downgrade by three or more notches is approximately twice as large for U.S. investment grade term loan issuers compared to European investment grade term loan issuers.

There is by now a large literature on the predictability of agencies' credit rating changes (Altman and Kao (1998); Delianedis and Geske (1999); Norden and Weber (2004); Löffler (2005)) that suggests that these rating changes are anticipated by the market. This is consistent with the narrative that firms with a sliding creditworthiness are not able to obtain bond funding, but rather need to rely on (monitoring-intensive) bank loans.

To show this in a multivariate regression framework, we split the baseline results for term loans (column (5) of Panel B of Table 2) into investment grade and non-investment

grade. Non-investment grade borrowers are more likely to issue term loans (as opposed to issue bonds) both in the U.S. as well as in Europe. Therefore, we expect to find differences in the sub-sample of investment grade rated firms. Table 4 reports the results. As expected, we find that the prizing puzzle is only significant for investment grade term loan issuers (-48bps, $p<0.01$), but it is economically and statistically insignificant for non-investment grade term loan issuers (0bps, $p>0.10$).

[Table 4 here]

Table 5 presents a multivariate analysis on post-issue performance. The results confirm the univariate evidence from Figure 4: European investment grade firms perform significantly better following term loan issues than U.S. investment grade firms. The change in credit rating in the year after the loan issue is 0.7 notches lower for European relative to U.S. firms (see column (3), ΔRating > 0 indicates downgrades). Results are confirmed when looking at post-issuance changes in profitability instead of post-issuance changes in credit ratings (column (4)). In contrast, we find no post-issue performance differences in term loans to European and U.S. non-investment grade borrowers.

[Table 5 here]

Assuming perfect foresight of credit ratings and profitability changes in the year after loan issuance, we control for post-issue performance in a multivariate regression. Results are provided in Table 6. The results show that conditioning on post-issue performance significantly reduces the prizing puzzle for term loans to investment grade borrowers. Results are very similar for rating changes (column (2)), rating and profitability changes (column (3)) as well as allowing a more flexible functional form by introducing squared terms for the independent variables (column (4)). While the coefficient on the Europe-dummy remains statistically significant even in these specifications, it is reduced by approximately 15 bps.

[Table 6 here]

Overall, the results presented in this section clearly demonstrate that the term loan market structure in the (market-based) U.S. economy is distinct from the structure in the (bank-based) European economy in important ways. In particular, term loan issuers in the U.S. not only have lower credit ratings on average at origination, but they also exhibit a worse post-issuance credit rating and profitability performance. Thus, any comparison of term loan price or non-price terms between the U.S. and Europe needs to take these differences into account.

4.3. Competition from institutional lenders

In section 3 and Panel B of Table 2, we document evidence suggesting that the pricing gap between term loan borrowers in the U.S. and Europe narrowed during the 2003-2007 period. A possible interpretation of this result is an increase in the supply of funds by institutional lenders (investors) in the U.S.[22] While the syndicated loan market was dominated by banks until 2002, innovations in financial markets opened the loan market for non-bank institutions as lenders. Collateralized loan obligations (CLO) funds as well as the possibility to securitize loans created additional liquidity and competition to bank funding, creating competitive downward pressure on U.S. loan spreads. The increased role of institutional investors has been well documented in the literature (Ivashina and Sun, 2011; Nadauld and Weisbach, 2012; and Shivdasani and Wang, 2011). In addition, Massoud et al. (2011) find that hedge funds were more likely to lend to highly leveraged firms where trading on private information is highly valuable.

In addition to a greater supply of funds by institutional lenders in the syndicated loan market, the development of the secondary loan market over the past 2002 period also increased the liquidity of syndicated loans. For example, Gande and Saunders (2012) document the growth of secondary market decreased borrowers' financial constraints and

[22] In what follows the terms institutional lenders and institutional investors are synonymous.

freed up funds for additional lending. In turn, this may have decreased the liquidity premium included in previously illiquid loan spreads.

If the downward pricing pressure was larger for U.S. relative to European loans, this can explain the reduction in the U.S.-Europe spread differential over the 2003-2007 period. Figure 5 shows strikingly the significant increase in the supply of loans by non-bank institutional lenders over this period, particular in the U.S.

[Figure 5 here]

Panel A of Figure 5 depicts the annual "Bank Term Loan" issuances in our sample for the U.S. versus Europe and Panel B of Figure 5 depicts the annual "Institutional Term Loan" issuances.[23] We observe a substantial increase in U.S. institutional term loans after 2001 with the annual number of issuances increasing from below 80 in 2001 to more than 200 in 2004 and after as shown in Panel B of Figure 5. Interestingly, we do not observe the same time trend for institutional loans in Europe. We conject that the additional loan supply from institutional investors in the U.S. worked to reduce term loan spreads in the U.S. vis-à-vis Europe, eventually closing the pricing gap.

We introduce an institutional term loan indicator ("Institutional (0/1)") to test this in our empirical framework. Arrangers of syndicated loan deals cater to institutional investors carving out tranches that are not amortizing but usually have bullet repayments 3, 5 or more years after loan origination.[24] We report the results in Table 7. Columns (1) to (2) and columns (3) to (4) show regression results using the 1992 to 2002 as well as 1992 to 2007 period, respectively. Columns (1) and (3) repeat the term loan regressions from Panel A and Panel B of Table 2. We add the institutional term loan indicator in columns (2) and (4).

[23] "Bank Term Loan" is loan type issued for banks. These loans are usually amortizing loans and the early repayment does not suited for institutional investors such as private equity funds who have a fixed duration. "Institutional Term Loan" is a loan type that usually has a bullet repayment which is better suited for institutional investors.

[24] We codify all term loans ranging from "Term Loan B" to "Tern Loan H" in Dealscan as institutional loans as these are primarily purchased by institutional investors and as classifications (i.e., letters B, C, D, etc.) of loans have changed over time. If Dealscan classifies a loan simply as "Term Loan", we codify these as "Bank Term Loan". Loan characteristics such as the interest rate spread and syndicate composition are similar to other bank loan tranches and we conjecture that these are therefore issued to be purchased by banks.

[Table 7 here]

In the original 1992-2002 sample as well as the extended sample, institutional term loans carry larger spreads compared to bank loan tranches, which is consistent with the prior literature. Controlling for loan pricing differences between bank and institutional tranche types, we still find significantly larger term loan spreads in the U.S. relative to Europe during the 1992 to 2002 period. However, the Europe (0/1) indicator variable becomes insignificant over the longer 1992 to 2007 sample period when we include the institutional loan dummy, consistent with an increase in the supply of capital by U.S. institutional investors in the post 2002 period. The coefficient of the institutional term loan dummy is positive and significant suggesting that institutional term loans carry, on average, larger spreads compared to bank term loans. However, the coefficient decreases by more than 20bps once we include the 2003 to 2007 period, consistent with an increase in competition by institutional lenders and a subsequent reduction of institutional loan spreads. Note the substantial increase in the number of institutional loans in the extended sample period as reported at the bottom of Table 7. While we count 565 institutional term loan tranches during the 1992 to 2002 period, this number increases to 1,649 when we include the 2003 to 2007 period. In other words, new entry and innovations in loan markets (such as institutionalizing a previously bank dominated market through CLOs and the growth of loan investment and mutual funds) eventually removed the pricing gap between U.S. and European term loans.

5. Can Equity Volatility Explain the Pricing Structure Puzzle?

Our results suggest that pricing structure differences explain the loan spread differential between the U.S. and the European loan market.

Gaul and Uysal (2013) suggest that unobserved differences in firm volatility might explain the loan pricing puzzle. Building on the theoretical work of Merton (1974) they argue that firm volatility is an important determinant of the cost of corporate debt. To operationalize

their tests and address possible measurement problems, they use instrumented equity volatility as proxy for firm asset volatility. They hypothesize that U.S. firms are riskier (following arguments in Bartram et al. (2012)), which results in higher equity volatility of U.S. firms, which in turn explains higher loan spreads. Gaul and Uysal (2013) find evidence consistent with this hypothesis using the AISD as their measure for loan spreads.

While higher equity volatility might explain the loan spread puzzle for term loans, the hypothesis cannot explain the loan spread puzzle for credit lines. Recall that our earlier results show that while European firms pay lower spreads on credit lines, they pay significantly higher commitment fees. Higher equity volatility, however, would also increase commitment fees for U.S. vis-à-vis European firms because of ex-ante higher expected draw-downs (BSS, 2015).[25] We contrast our hypotheses above to that of Gaul and Uysal (2013) in our next tests.

While CN investigate a sample of rated firms, Gaul and Uysal (2013) conduct their tests on a sample of both rated and unrated firms. Consistent with our methodology in this paper and to select a benchmark sample similar to that used by CN, we run our tests on both subsamples of rated and unrated firms as well as separately for credit lines and term loans.

5.1. Equity volatility and credit lines

We start with the subsample of credit lines and report the results in Table 8.

[Table 8 here]

Columns (1) to (4) show the results for rated firms and columns (5) to (8) for unrated firms, respectively. Consistent with our earlier results, we find that rated U.S. firms pay about 22 bps lower spreads on their credit lines;[26] the loan cost difference, however, disappears once we include loan commitment and other fees in our loan cost measure (i.e., when we use the

[25] Loan commitments are like options which banks write. An increase in volatility will increase the price (fee) that the bank charges.

[26] The number of observations is lower compared to our earlier results. In Table 8, we include borrower characteristics as additional controls – as in Gaul and Uysal (2013) – and require that we have non-missing equity volatility for each observation.

TCB). In column (3) we report the results using the AISD as dependent variable following the methodology outlined in Gaul and Uysal (2013). We only include the second stage of an instrumental variable regression using the predicted equity volatility as measure of firm asset volatility.[27] Even after including the predicted volatility, the coefficient of the Europe indicator variable is highly significant and does not change in magnitude. Indeed, predicted equity volatility does not enter significantly into the regression. In unreported tests, we use the AISU as dependent variable and find no evidence that equity volatility explains the higher undrawn loan commitment fees paid by European firms. Consistently, we also find no evidence that predicted equity volatility affects the costs of credit lines for rated firms taking fees and draw-down likelihood into account (column (4)).

In our sample of unrated firms, we document an even higher AISD loan cost difference between U.S. and European firms of about 41bps. Again, using the TCB, the differential disappears (column (6)). In column (7), we control for the predicted equity volatility in the second stage regression and find, similar to Gaul and Uysal (2013), that higher equity volatility increases the AISD. It does not, however, fully explain the pricing difference between U.S. and European firms, decreasing the magnitude of the difference only by about half (from 41bps to 26bps, significant at the 1 percent level). To summarize the discussion, our results suggest that equity volatility can only partially explain the AISD interest spread difference between U.S. and European credit lines and, importantly, only for unrated firms for which less information is publicly available and for which unobserved firm characteristics are more important. In all our tests, our previous results hold, i.e., accounting for the fee structure of loans, the total loan cost differential between U.S. and European loans fully disappears.

[27] The first stage regression results are available upon request.

5.2. Equity volatility and term loans

Table 9 provides results for the term loan sample. Again, we analyze the term loan sample separately for rated (columns (1) and (2)) and unrated firms (columns (3) and (4)). As fees are less important for term loans, we omit a discussion using fee based measures as dependent variables and focus instead on the differences of rated versus unrated firms with respect to the basic AISD. Term loans of rated U.S. firms carry 25bps lower loan spreads.[28] Including the predicted equity volatility in column (2) does not affect the results. That is, similar to rated credit lines, equity volatility does not affect the AISD. We also find a substantially larger loan spread differential in the subsample of unrated term loans (85bps compared to 25bps for rated term loans). Similar to Gaul and Uysal (2013), we find that the predicted equity volatility explains AISD loan spread differences for term loans, but only in the subsample of unrated firms.

Taken together, the evidence in this section suggests that (predicted) equity volatility can only partially explain the interest rate spread difference between U.S. and European loans and, importantly, only that of unrated firms, which were not part of the sample included in the original CN paper.

[Table 9 here]

6. Conclusion

In this paper, we analyze differences in the pricing of syndicated loans between U.S. and European loans. Our paper thus adds to the literature initiated by Carey and Nini (2007), who document that interest rate spreads on syndicated loans differed systematically between the

[28] Again, as in Table 8, the number of observations is lower compared to our earlier results. In Table 8, we include borrower characteristics – as in Gaul and Uysal (2013) – as additional controls and require that we have non-missing equity volatility for each observation.

European and the U.S. market during the 1992 to 2002 period. Loan spreads in Europe are, on average, about 30 basis points smaller than in the U.S. This paper revisits the pricing puzzle and offers potential explanations for their reported puzzle.

First, we explicitly distinguish between term loans and lines of credit and document that, while European borrowers pay lower spreads (AISD) compared to U.S. borrowers, they also pay higher fees for their credit lines. This suggests that the pricing structure for credit lines is different in the U.S. compared to Europe, with the overall total cost of borrowing being very similar across the two markets.

Second, we document that the composition of borrowers differs between the U.S. and the European term loan markets. In particular, poorer-creditworthy U.S. firms are more likely to use term loans compared to European firms. Consistently, we find European term loan issuers have, on average, a significantly better post-issue performance compared to U.S. term loan issuers. We also find a substantially lower pricing gap between U.S. and European term loans conditioning on firms' post-performance, creditworthiness and profitability differences.

Finally, we extend the sample and include the 2003 to 2007 period[29] and find that term loan spreads between the U.S. and Europe have converged. We document that this is caused by a decrease in U.S. relative to European term loan spreads. We find evidence consistent with the hypothesis that the increased supply of syndicated loans by institutional investors reduced the spreads of U.S. vis-à-vis European loans, effectively removing the pricing gap.

Our results also point to potentially fruitful areas of future research. For example, we document that the pricing puzzle does not persist in markets for credit lines once we introduce the full menu of fees and loan spreads. However, future research might investigate the reasons for price structure differences between credit lines issued in the U.S. compared to Europe. For example, why do European borrowers pay larger commitment fees compared to otherwise similar U.S. firms, even if we include firm equity (asset) volatilities? Why are credit line

[29] And, in unreported results, 1992-2011 (i.e. including the financial crisis years).

AISDs lower in Europe than in the U.S.? We look forward to future research on the pricing "bundle" differences of U.S. vs. European syndicated loans.

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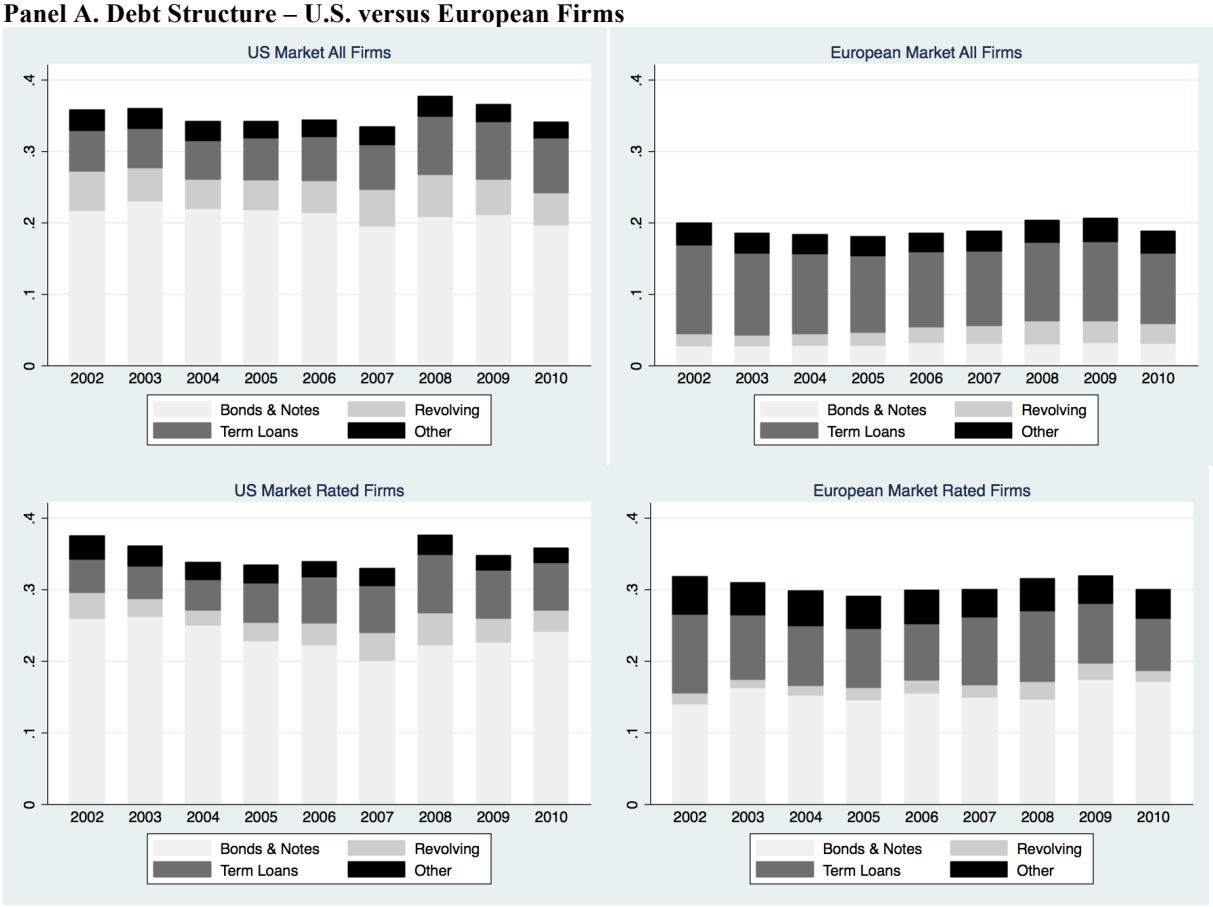
Figure 1. Debt Structure of U.S. and European Firms

Panel A shows the time series of average firm-level debt structures for public U.S. and European firms. All debt items are depicted as a fraction of total assets. Panel B shows the number of loan issues by loan type and credit quality separately for the U.S. and the European market.

Panel A. Debt Structure – U.S. versus European Firms



Panel B. Number of Loan Issues by Credit Quality

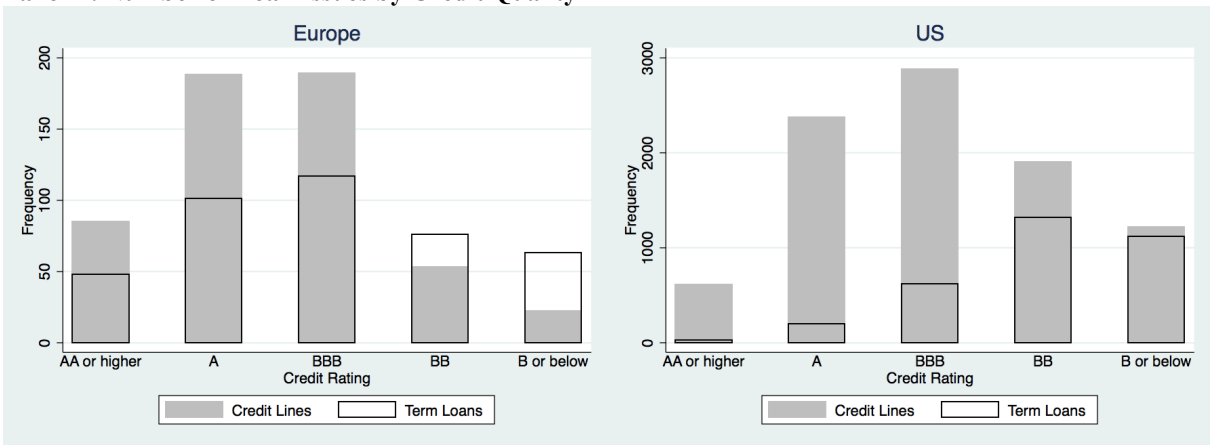


Figure 2
Pricing Structure in the U.S. and the European Loan Market: AISD versus AISU
This figure shows the mean AISD and the mean AISU for lines of credit issued by European and U.S. firms, distinguishing between firms that have an investment grade rating and firms that have a junk rating at the time of the loan origination.

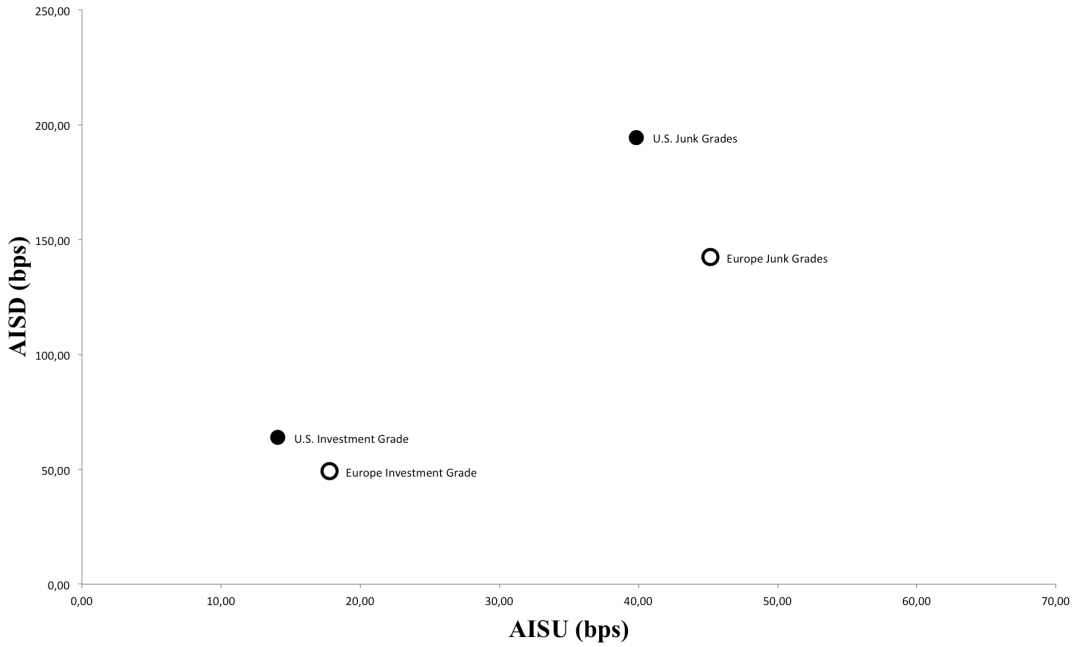


Figure 3
Credit Line Pricing Puzzle over Time – AISD versus TCB

This figure shows the European prizing puzzle for credit lines over time. Specifically, we report estimated coefficients from the following regressions:

$$AISD = \alpha + \beta_1(Europe * Year1992) + \cdots + \beta_{19}(Europe * Year2007) + \delta' Y + \varepsilon$$
$$TCB = \alpha + \beta_1(Europe * Year1992) + \cdots + \beta_{19}(Europe * Year2007) + \delta' Y + \varepsilon$$

We control for year fixed effects, 2-digit SIC code fixed effects, and credit rating fixed effects. *Y* are control variables to control for heterogeneity in loan characteristics (cf. Table 2). The dashed lines represent 95% confidence intervals, adjusted for firm-level clustering.

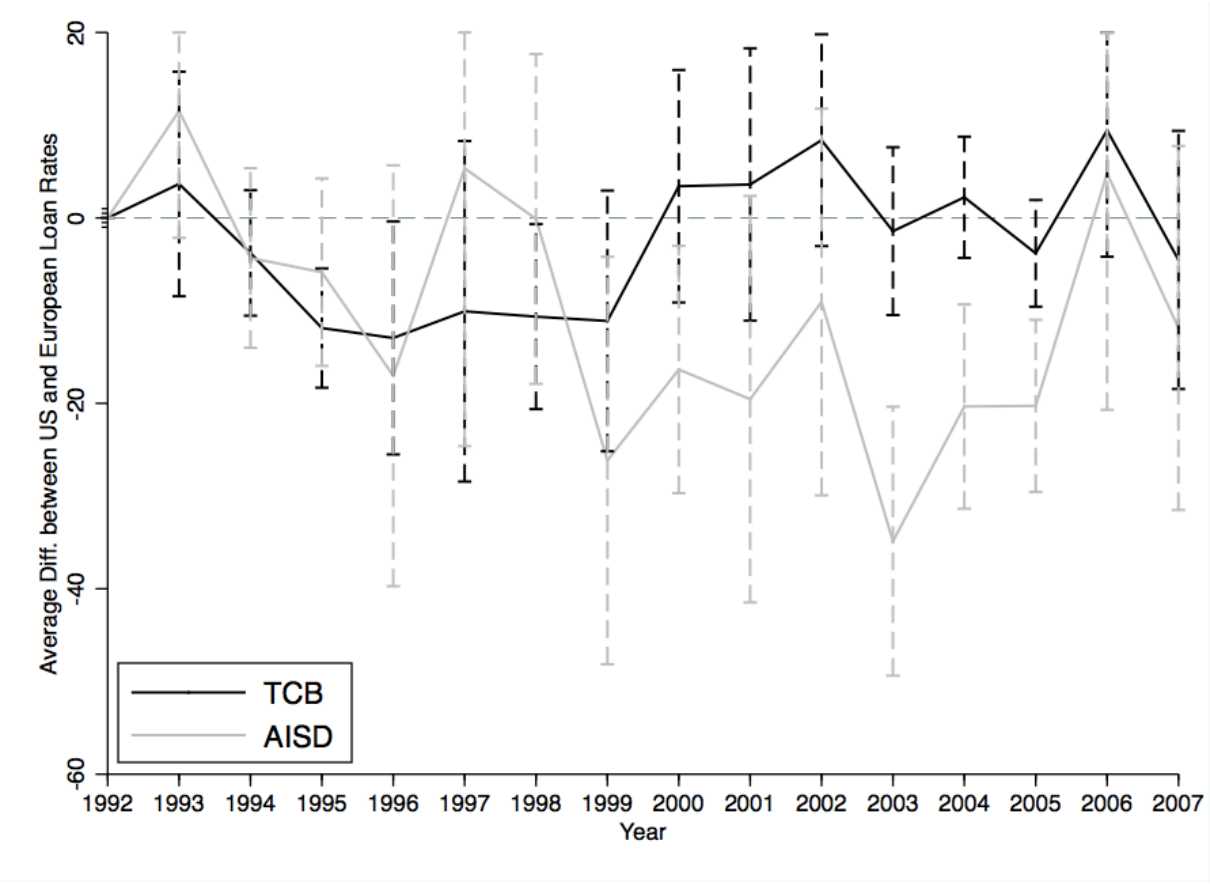


Figure 4
Post Issue Performance

This figure shows the change in the credit rating (notch) of the borrower in the year following a loan issue.

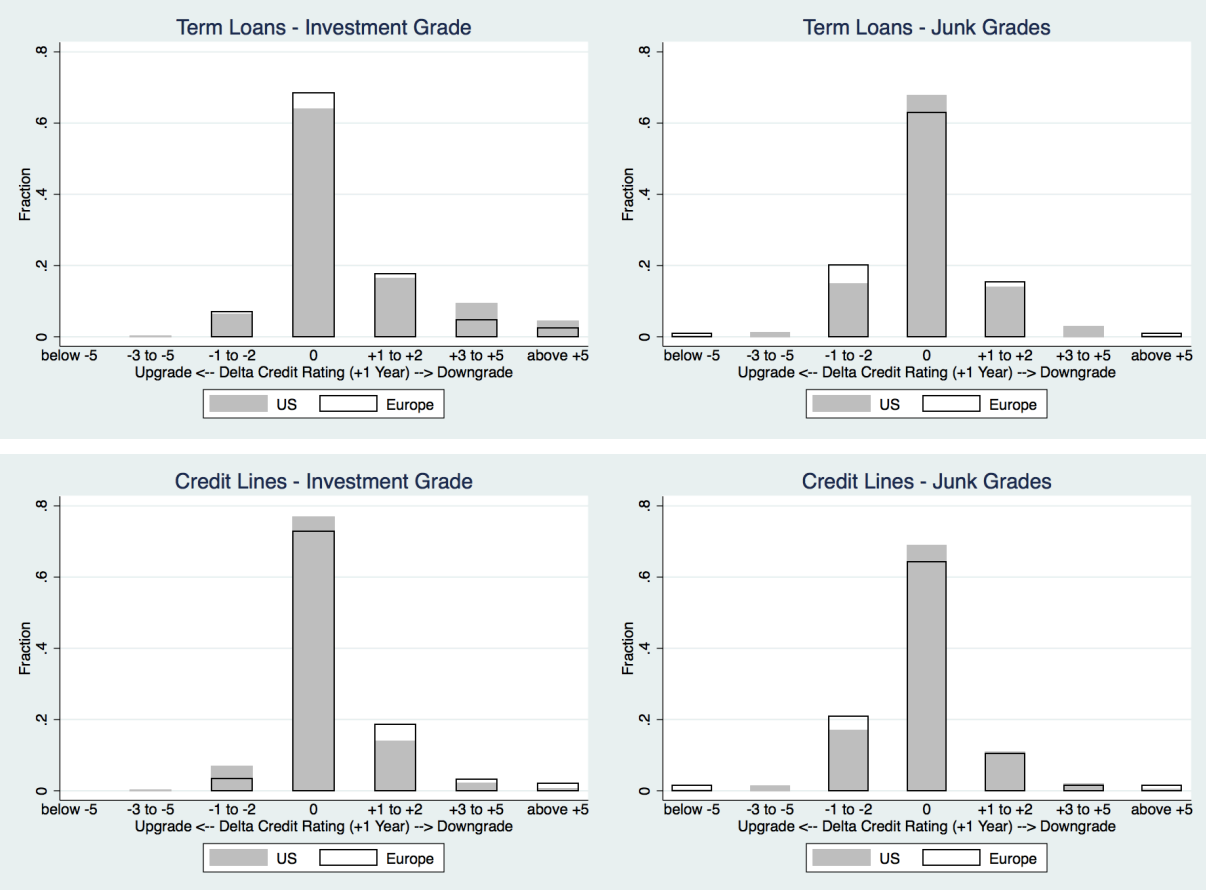
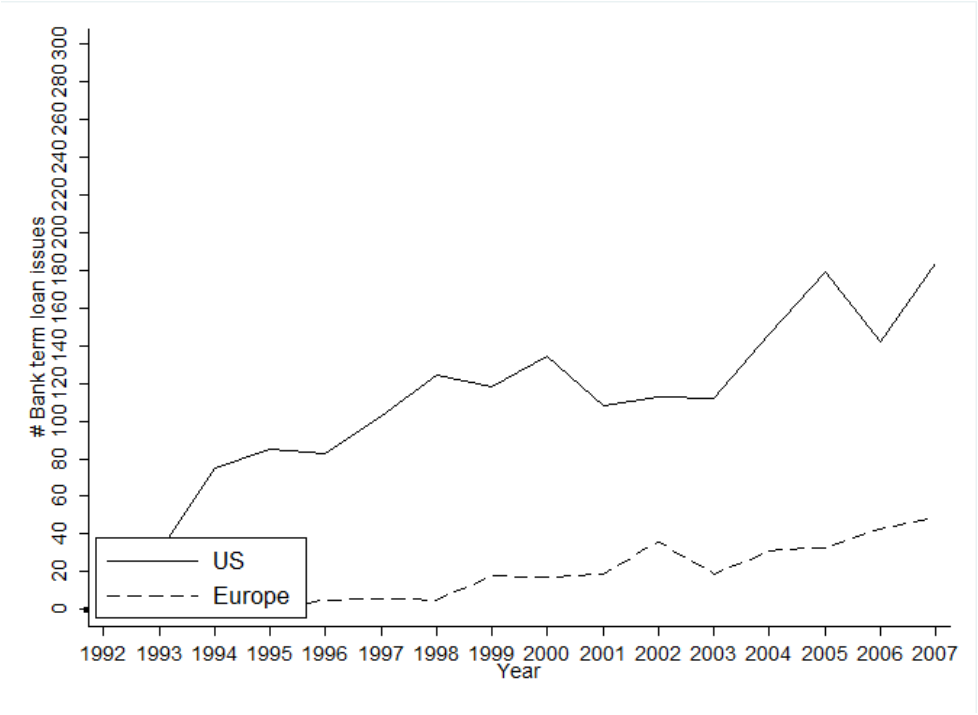


Figure 5
Term Loan Issuances
This figure plots the annual number of loan issuances in the U.S. versus Europe. Panel A depicts the increase in bank term loan issuances (Term A loans), Panel B the increase in institutional term loan issuances (Term B loans).

Panel A. Bank term loans



Panel B. Institutional term loans

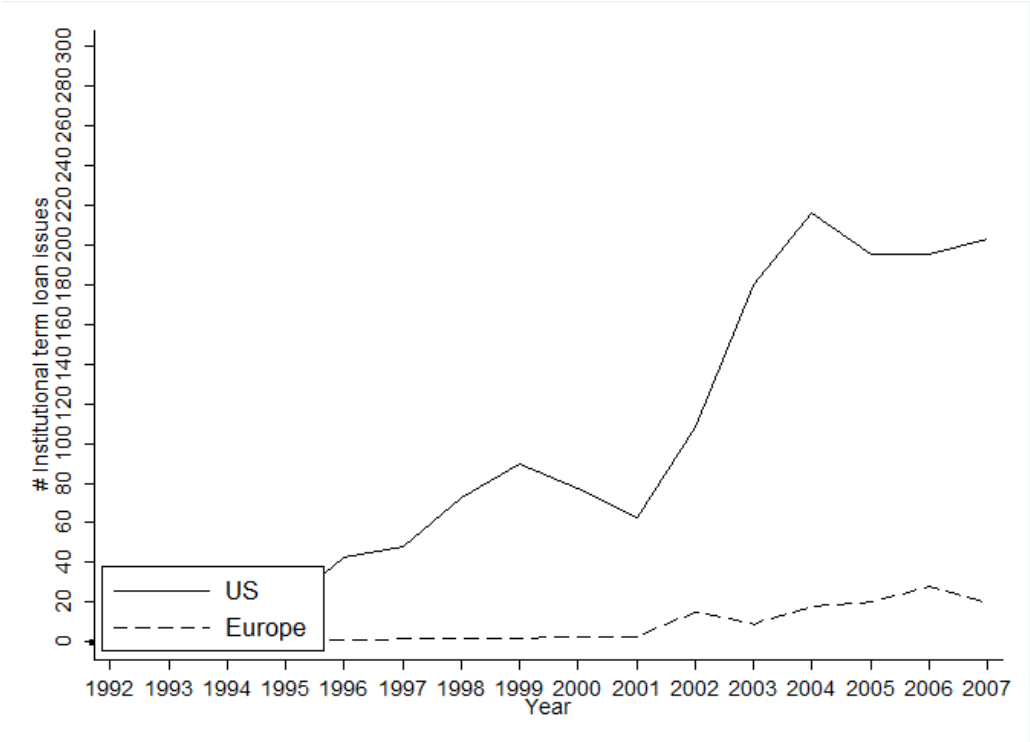


Table 1
Descriptive Statistics
This table provides summary statistics for loan and borrower characteristics for a sample of loans issued between 1992 and 2007. Panel A reports loan characteristics. Panel B reports borrower characteristics. For variable definitions see Appendix A.

	U.S. Market				European Market			
Variable	Observations	Mean	Median	Std	Observations	Mean	Median	Std
Panel A: Loan Characteristics								
AISD	12,721	147.44	112.50	124.50	1,075	120.84	55.00	132.73
Revolver (0/1)	12,721	0.71	1.00	0.46	1,075	0.50	0.00	0.50
Facility Amount (million USD)	12,721	539.53	300.00	712.66	1,075	945.39	505.00	1089.58
Maturity (months)	12,721	45.62	54.00	25.61	1,075	58.45	60.00	30.58
Maturity 1-3yr (0/1)	12,721	0.29	0.00	0.45	1,075	0.20	0.00	0.40
Maturity 3-6yr (0/1)	12,721	0.56	1.00	0.50	1,075	0.49	0.00	0.50
Maturity >6yr (0/1)	12,721	0.12	0.00	0.32	1,075	0.29	0.00	0.45
Purpose: Takeover (0/1)	12,721	0.11	0.00	0.31	1,075	0.13	0.00	0.33
Purpose: Other (0/1)	12,721	0.43	0.00	0.50	1,075	0.59	1.00	0.49
Purpose: General Corporate (0/1)	12,721	0.30	0.00	0.46	1,075	0.21	0.00	0.41
Purpose: Project Finance (0/1)	12,721	0.00	0.00	0.07	1,075	0.03	0.00	0.18
Purpose: CP Backup (0/1)	12,721	0.15	0.00	0.36	1,075	0.03	0.00	0.18
Secured (0/1)	12,721	0.39	0.00	0.49	1,075	0.22	0.00	0.41
Panel B: Borrower Characteristics								
Rating: AAA (0/1)	12,721	0.01	0.00	0.10	1,075	0.02	0.00	0.15
Rating: AA (0/1)	12,721	0.04	0.00	0.20	1,075	0.13	0.00	0.33
Rating: A (0/1)	12,721	0.21	0.00	0.41	1,075	0.30	0.00	0.46
Rating: BBB (0/1)	12,721	0.29	0.00	0.45	1,075	0.32	0.00	0.47
Rating: BB (0/1)	12,721	0.26	0.00	0.44	1,075	0.13	0.00	0.34
Rating: B (0/1)	12,721	0.19	0.00	0.39	1,075	0.09	0.00	0.29

Table 2
Base Regression (Carey and Nini (2007) Specification)
This table provides results of a linear regression of the loan interest rate (*AISD*) on a European market dummy (*Europe (0/1)*) and control variables. *Ln(Facility Amount)* is the natural log of the loan amount. *Maturity 1-3yr (0/1)* is an indicator variable equal to 1 if the maturity of the loan is between 1 and 3 years. *Maturity 3-6yr (0/1)* is an indicator variable if the maturity of the loan is between 3 and 6 years. *Maturity >6yr (0/1)* is an indicator variable equal to 1 if the loan maturity is above 6 years. Loans with a maturity below 1 year are the omitted group. *Secured (0/1)* is an indicator variable equal to 1 if the loan is secured. *Term Loan (0/1)* is an indicator variable equal to 1 if the loan is a term loan. *Bridge Loan (0/1)* is an indicator variable equal to 1 if the loan is a bridge loan. *Other Loan (0/1)* is an indicator variable equal to 1 if the loan is neither a credit line or a term loan nor a bridge loan. For variable definitions see Appendix A. Column (1) reports the results for the full sample, column (2) for investment grade loans (*I-Grade*), column (3) for non-investment grade loans (*Junk*). Columns (4) and (5) split the sample into credit lines and term loans, respectively. Fixed effects for year, two-digit SIC code, and borrower credit rating are included but the coefficients are not shown. Panel A uses the Carey and Nini (207) specification and a sample over the 1992 to 2002 period. Panel B extends the sample to the end of 2007. We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Panel A. Carey and Nini (2007) specifications

	ALL	**I-Grade**	**Junk**	**Credit Line**	**Term Loan**
	(1)	(2)	(3)	(4)	(5)
	AISD	AISD	AISD	AISD	AISD
Europe (0/1)	-20.66***	-22.82***	-31.27*	-11.57**	-65.26***
	(-3.22)	(-3.69)	(-1.85)	(-2.31)	(-5.18)
Ln(Facility Amount)	-9.68***	-6.86***	-12.06***	-9.86***	-11.52***
	(-7.52)	(-4.90)	(-5.38)	(-9.27)	(-3.82)
Maturity 1-3yr (0/1)	8.61	7.44	13.23	-12.60*	51.36***
	(1.18)	(1.51)	(0.71)	(-1.66)	(2.79)
Maturity 3-6yr (0/1)	-0.16	8.84*	-21.66	-17.95**	22.21
	(-0.02)	(1.84)	(-1.19)	(-2.30)	(1.30)
Maturity >6yr (0/1)	23.16***	61.23***	-3.24	-8.12	60.00***
	(2.59)	(5.94)	(-0.17)	(-0.89)	(3.37)
Secured (0/1)	65.10***	86.43***	44.62***	67.85***	61.87***
	(16.03)	(13.64)	(9.78)	(17.11)	(8.51)
Term Loan (0/1)	55.44***	64.55***	44.19***	(omitted)	(omitted)
	(16.06)	(10.82)	(11.95)		
Bridge Loan (0/1)	82.30***	44.96***	134.63***	(omitted)	(omitted)
	(6.59)	(4.60)	(5.92)		
Other Loan (0/1)	29.46***	35.13***	2.02	(omitted)	(omitted)
	(2.71)	(2.82)	(0.10)		
H0: Europe $(0/1)_{\text{I-Grade}}$ = Europe $(0/1)_{\text{Junk}}$			-8.45		
			(-0.48)		
H0: Europe $(0/1)_{\text{Credit Lines}}$ = Europe $(0/1)_{\text{Term Loans}}$				-53.69***	
				(-4.48)	
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes	Yes
Time Period	1992-2002	1992-2002	1992-2002	1992-2002	1992-2002
Observations	7,737	4,750	2,987	5,741	1,656
Adjusted R^2	0.65	0.53	0.48	0.67	0.44
European Facilities	443	359	84	258	135

Panel B. Period Extension (1992 – 2007)

	ALL	**I-Grade**	**Junk**	**Credit Line**	**Term Loan**
	(1)	(2)	(3)	(4)	(5)
	AISD	AISD	AISD	AISD	AISD
Europe (0/1)	-10.29*	-24.13***	-10.85	-16.66***	-21.75*
	(-1.65)	(-4.61)	(-0.86)	(-5.10)	(-1.84)
Ln(Facility Amount)	-12.59***	-7.19***	-17.13***	-11.37***	-19.93***
	(-10.77)	(-5.73)	(-9.57)	(-12.87)	(-8.39)
Maturity 1-3yr (0/1)	9.34	7.46*	9.54	-15.25**	26.22*
	(1.49)	(1.76)	(0.60)	(-2.30)	(1.86)
Maturity 3-6yr (0/1)	2.70	9.68**	-20.47	-19.21***	2.62
	(0.43)	(2.22)	(-1.34)	(-2.85)	(0.20)
Maturity >6yr (0/1)	26.22***	78.38***	-8.24	-10.80	28.20**
	(3.32)	(7.68)	(-0.52)	(-1.40)	(2.03)
Secured (0/1)	61.39***	91.43***	37.69***	61.60***	61.19***
	(17.68)	(16.92)	(9.93)	(19.27)	(10.60)
Term Loan (0/1)	59.19***	61.90***	53.68***	(omitted)	(omitted)
	(20.38)	(12.39)	(16.22)		
Bridge Loan (0/1)	97.15***	52.59***	175.85***	(omitted)	(omitted)
	(9.28)	(5.63)	(9.19)		
Other Loan (0/1)	47.70***	34.36***	76.48***	(omitted)	(omitted)
	(4.18)	(3.22)	(3.03)		
H0: Europe $(0/1)_{\text{I-Grade}}$			13.28		
$=$ Europe $(0/1)_{\text{Junk}}$			(0.99)		
H0: Europe $(0/1)_{\text{Credit Lines}}$					-5.09
$=$ Europe $(0/1)_{\text{Term Loans}}$					(-0.55)
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes	Yes
Time Period	1992-2007	1992-2007	1992-2007	1992-2007	1992-2007
Observations	13,769	7,842	5,954	9,520	3,678
Adjusted R^2	0.59	0.52	0.39	0.64	0.34
European Facilities	1,075	828	247	537	405

Table 3
Credit Lines: AISD versus AISU – Multivariate Results

This table provides results of a linear regression of loan pricing terms on *Europe (0/1)* and control variables as reported in Table 2. The coefficients are not shown for brevity, a variable definition is provided in Appendix A. Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan characteristics are included but not shown. The dependent variables are as follows: *AISD* in column (1), *AISU* in column (2), an undrawn weighted spread (*UWS*) with different drawdown assumptions (35%, 30%, and 25%) in columns (3) to (5), and the *TCB* in column (6). We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample:	**Credit Lines**	**Credit Lines**	**Credit Lines**	**Credit Lines**	**Credit Lines**	**Credit Lines**
	(1)	(2)	(3)	(4)	(5)	(6)
Variable	AISD	AISU	UWS(35%)	UWS(30%)	UWS(25%)	TCB
Europe (0/1)	-16.66***	4.19***	-3.11*	-2.07	-1.02	-0.05
	(-5.10)	-4.27	(-1.89)	(-1.35)	(-0.72)	(-0.02)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose & Type FE	Yes	Yes	Yes	Yes	Yes	Yes
Time Period	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**
Observations	9,520	9,520	9,520	9,520	9,520	8,788
Adjusted R^2	0.68	0.64	0.7	0.7	0.7	0.65
European Facilities	537	537	537	537	537	488

Table 4
I-Grade versus Junk for term loan issuers

This table provides results of a linear regression of *AISD* on *Europe (0/1)* and control variables as reported in Panel B of Table 2. The coefficients on the control variables are not shown for brevity, a variable definition is provided in Appendix A. Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan characteristics are included but not shown. We report results for the full sample in column (1), for the subsample of investment grade loans (*I-Grade*) in column (2) and for non-investment-grade loans (*Junk*) in columns (3). We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample:	**All grades Term Loans**	**I-Grade Term Loans**	**Junk Term Loans**
	(1)	(2)	(3)
Variable	AISD	AISD	AISD
Europe (0/1)	-21.75*	-48.43***	0.29
	(-1.84)	(-4.33)	-0.02
Other Controls	Yes	Yes	Yes
Time & Industry FE	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes
Loan Purpose & Type FE	Yes	Yes	Yes
Time Period	**1992-2007**	**1992-2007**	**1992-2007**
Observations	3,678	1,107	2,571
Adjusted R^2	0.34	0.53	0.28
European Facilities	405	266	139

Table 5
Ex-Post Performance

This table provides results of linear regressions of post loan issue changes in borrower credit rating (*Δ Rating (+1Y))* and profitability (*Δ Prof. (+1Y))* on a European market dummy and control variables as reported in Table 2. Δ Rating is defined as the difference in rating notches between t+1 (one year after the loan issue) and t=0 (rating at loan origination). Positive (negative) values indicate downgrades (upgrades). Δ Prof. is defined as the difference in profitability at t+1 and t=0. Positive (negative) values indicate profitability increases (decreases). For variable definitions see Appendix A. Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan characteristics are included but not shown. Columns (1) to (4) report results from regressions using investment-grade rated loans. Columns (5) to (8) report results from regressions using only non-investment grade rated loans. Results are reported separately for credit lines (columns (1)-(2) and (5)-(6)) and term loans (columns (3)-(4) and (7)-(8)). We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample:	**I-Grade**				**Junk**			
	Credit Lines		**Term Loans**		**Credit Lines**		**Term Loans**	
	Δ Rating (+1Y)	**Δ Prof. (+1Y)**	**Δ Rating (+1Y)**	**Δ Prof. (+1Y)**	**Δ Rating (+1Y)**	**Δ Prof. (+1Y)**	**Δ Rating (+1Y)**	**Δ Prof. (+1Y)**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable	AISD	AISD	AISD	AISD	AISD	AISD	AISD	AISD
Europe (0/1)	0.06	0.004	-0.71***	0.016***	0.08	-0.003	0.01	0.00
	(-1.04)	(-1.39)	(-3.71)	(-3.11)	(-0.54)	(-0.47)	(-0.05)	(-0.02)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time & Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose & Type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Period	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**
Observations	6,202	5,896	1,046	951	2,879	3,031	2,258	2,393
Adjusted R^2	0.15	0.036	0.29	0.128	0.15	0.022	0.17	0.076
European Facilities	441	449	256	252	67	75	105	125

Table 6

Term loans: Controlling for Post-Issue Performance

This table provides results of a linear regression of *AISD* on *Europe (0/1)* and control variables as reported in Table 2 using a sample of investment grade borrowers and term loans. The coefficients are not shown for brevity, a variable definition is provided in Appendix A. Column (1) repeats the results reported in column (4) of Table 4. In columns (2)-(3), we add changes in ex-post performance based on rating and profitability to the model specification. We add squared terms of ex-post performance changes in columns (3) and (4). Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan characteristics are included but not shown. We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

	Term Loans – Investment Grade Only			
	(1)	(2)	(3)	(4)
Variable	AISD	AISD	AISD	AISD
Europe (0/1)	-48.43***	-35.42***	-34.97***	-34.18***
	(-4.33)	(-3.17)	(-2.77)	(-2.93)
Δ Rating (+1 Year)		15.92***	15.27***	15.58***
		(6.53)	(6.39)	(3.05)
Δ Prof. (+1 Year)			-125.61	84.56
			(-0.82)	(.4)
Δ Rating (+1 Year)²				-0.1
				(-0.14)
Δ Prof. (+1 Year)²				2236.32**
				(2.04)
Other Controls	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes
Time Period	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**
Observations	1,107	1,046	926	926
Adjusted R²	0.53	0.56	0.55	0.56
European Facilities	266	256	249	249

Table 7
Competition from Institutional Lenders

This table provides results of a linear regression of *AISD* on *Europe (0/1)* and control variables as reported in Table 2 using a sample of term loans. The coefficients are not shown for brevity, a variable definition is provided in Appendix A. Column (1) repeats the results reported in column (5) of Panel A of Table 2. In columns (2) and (4), we add *Institutional (0/1)*, which is an indicator that is 1 if the loans is an institutional term loan (Term Loan B, Term Loan C,…, Term Loan H in Dealscan). We add the years 2003 to 2007 in columns (3) and (4). Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan characteristics are included but not shown. We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	**All Grades**			
	Term Loans	**Term Loans**	**Term Loans**	**Term Loans**
	(1)	(2)	(3)	(4)
Variable	AISD	AISD	AISD	AISD
Europe (0/1)	-65.26***	-45.76***	-21.75*	-12.22
	(-5.18)	(-4.02)	(-1.84)	(-1.10)
Institutional (0/1)		76.43***		51.30***
		(13.95)		(10.23)
Other Controls	Yes	Yes	Yes	Yes
Time & Industry FE	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes
Time Period	**1992-2002**	**1992-2002**	**1992-2007**	**1992-2007**
Observations	1,656	1,656	3,678	3,678
Adjusted R^2	0.44	0.50	0.34	0.37
Institutional Loans (Term B)	565	565	1,649	1,649
European Facilities	135	135	405	405

Table 8

Instrumented Equity Volatility: Rated versus Non-Rated Companies – Credit Lines

This table provides results of OLS and IV regressions of AISD and TBC on European market dummies and control variables. In the IV specifications the standard deviation of the ratio of borrowers' quarterly book equity to assets ratio, *Book Equity Volatility*, and the standard deviation of the ratio of borrowers' quarterly cash and short-term investment to assets, *Cash & STI Volatility*, are used as instruments for the borrowers' stock return volatility (see Gaul and Uysal (2013)). For variable definitions see Appendix A. Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan and borrower characteristics are included but not shown. We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

	Rated Firms				**Non-Rated Firms**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable	AISD	TCB	AISD	TCB	AISD	TCB	AISD	TCB
Europe (0/1)	-22.45***	-0.06	-22.92***	0.19	-41.45***	-2.68	-25.75***	4.42
	(-4.47)	(-0.02)	(-4.23)	-0.06	(-7.57)	(-0.89)	(-3.94)	-1.27
Predicted Vola			-0.42	0.36			3.25***	1.68***
			(-0.32)	-0.49			-5.56	-5.4
Specification	**OLS**	**OLS**	**IV (2nd stage)**	**IV (2nd stage)**	**OLS**	**OLS**	**IV (2nd stage)**	**IV (2nd stage)**
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower Contr.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Period	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**
Observations	5,169	5,082	5,169	5,082	4,712	4,437	4,712	4,437
Adjusted R^2	0.7	0.68	0.67	0.71	0.49	0.51	0.38	0.38
Euro. Facilities	366	342	366	342	530	493	530	493

Table 9

Instrumented Equity Volatility: Rated versus Non-Rated Companies – Term Loans

This table provides results of OLS and IV regressions of AISD and TBC on European market dummies and control variables. In the IV specifications the standard deviation of the ratio of borrowers' quarterly book equity to assets ratio, *Book Equity Volatility*, and the standard deviation of the ratio of borrowers' quarterly cash and short-term investment to assets, *Cash & STI Volatility*, are used as instruments for the borrowers' stock return volatility (see Gaul and Uysal (2013)). For variable definitions see Appendix A. Fixed effects for year, two-digit SIC code, and borrower credit rating as well as other loan and borrower characteristics are included but not shown. We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

	Rated Firms		**Non-Rated Firms**	
	(1)	(2)	(3)	(4)
Variable	AISD	AISD	AISD	AISD
Europe (0/1)	-24.64*	-23.19*	-85.25***	-36.40
	(-1.94)	(-1.83)	(-7.41)	(-1.61)
Predicted Vola		0.56		4.50**
		-0.36		-2.57
Specification	**OLS**	**IV (2nd stage)**	**OLS**	**IV (2nd stage)**
Other Controls	Yes	Yes	Yes	Yes
Borrower Contr.	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes
Time Period	**1992-2007**	**1992-2007**	**1992-2007**	**1992-2007**
Observations	1,903	1,903	2,154	2,154
Adjusted R^2	0.39	0.42	0.38	0.1
Euro. Facilities	270	270	489	489

Appendix A

Explanation of Variables

Variable	Source	Description
General		
Revolver (0/1)	Dealscan	Loans with type "Revolver/Line < 1 Yr.", "Revolver/Line >= 1 Yr.", "364-Day Facility", "Limited Line" or "Revolver /Term Loan" as indicated in the facility table in Dealscan.
Term Loan (0/1)	Dealscan	Loans with type "Term Loan", "Term Loan A"-"Term Loan H" or "Delay Draw Term Loan" as indicated in the facility table in Dealscan.
Other Loan (0/1)	Dealscan	Loans that are not classified as either term loans or revolver.
Term B (0/1)	Dealscan	Loans with type "Term Loan B" to "Tern Loan H".
Purpose: Takeover (0/1)	Dealscan	Loans with purpose "Takeover" as indicated in the facility table in Dealscan.
Purpose: Ship, Plane, or SPV Finance (0/1)	Dealscan	Loans with purpose "Aircraft finance" or "Ship finance" as indicated in the facility table in Dealscan.
Purpose: Project Finance (0/1)	Dealscan	Loans with purpose "Proj. finance" as indicated in the facility table in Dealscan.
Purpose: CP Backup (0/1)	Dealscan	Loans with purpose "CP backup" as indicated in the facility table in Dealscan.
Purpose: General Corporate (0/1)	Dealscan	Loans with purpose "Corp. purposes" as indicated in the facility table in Dealscan.
Purpose: Other (0/1)	Dealscan	Loans with purpose "Other" as indicated in the facility table in Dealscan.
Price Terms		
AISD	Dealscan	All-In-Spread-Drawn, defined as the sum of the spread over LIBOR or EURIBOR plus the facility fee.
AISU	Dealscan	All-In-Spread-Undrawn, defined as the sum of the facility fee and the commitment fee.
Spread	Dealscan	Spread over LIBOR, paid on drawn amounts on credit lines
Facility Fee	Dealscan	Fee paid on the entire committed amount, regardless of usage.
Commitment Fee	Dealscan	Fee paid on the unused amount of loan commitments.
Upfront Fee (UF)	Dealscan	Fee paid upon completion of a syndicated loan.
Utilization fee (UTF)	Dealscan	Fee paid on the entire drawn amount once a certain usage threshold has been exceeded
Cancellation fee (CAF)	Dealscan	Fee paid if the syndicated loan is cancelled before maturity
Usage Weighted Spread (UWS)	Dealscan	Weighted average of AISD and AISU.
Total Cost of Borrowing (TCB)	Dealscan	Total cost of borrowing taking into account the spread, the facility fee, the commitment fee, the letter of credit fee, the utilization fee, the cancellation fee and the upfront fee
Non-Price Terms		
Facility Amount	Dealscan	Facility amount in USD mn as indicated in the field *FacilityAmt* in the facility table in Dealscan.
Maturity 1-3yr (0/1)	Dealscan	A dummy variable, which equals one if the loan maturity is between 1 and 3 years, and zero otherwise.
Maturity 3-6yr (0/1)	Dealscan	A dummy variable, which equals one if the loan maturity is between 3 and 6 years, and zero otherwise.
Maturity > 6yr (0/1)	Dealscan	A dummy variable, which equals one if the loan maturity larger than 6 years, and zero otherwise.
Maturity	Dealscan	Loan maturity in months.
Secured (0/1)	Dealscan	Indicates whether the loan is secured by collateral.
Borrower characteristics		
Europe (0/1)	Dealscan	A dummy variable, which equals one if the borrower is a European firm and zero otherwise.
Rating: AAA…B	S&P	A dummy variable, which equals one if the borrower has an S&P rating of AAA ... B at the time of the loan issue.
Δ Rating	S&P	Change in credit rating notches.
Δ Prof.	Compustat	Change in ratio of EBITDA to sales.
Stock Return Volatility	CRSP/Datastream	Standard deviation of firms' weekly stock returns for each calendar year, annualized by multiplying by $\mathbf{100}\boldsymbol{x}\sqrt{\mathbf{52}}$.
Book Equity Volatility	Compustat	Standard deviation of the ratio of borrowers' quarterly book equity to assets ratio (measured over the last 8 fiscal quarters).
Cash & STI Volatility	Compustat	Standard deviation of the ratio of borrowers' quarterly cash and short-term investment to assets (measured over the last 8 fiscal quarters).
Total Assets	Compustat	Total assets in USD mn.
Leverage	Compustat	Ratio of book value of total debt to the book value of assets.
Profitability	Compustat	Ratio of EBITDA to sales.
MTB	Compustat	Ratio of (book value of assets – book value of equity + market value of equity) to book value of assets.

Appendix B
Fees in the U.S. and the European Loan Market

B.I. Descriptive Statistics

This table provides summary statistics for loan price terms separately for the U.S. and the European market. Panel A reports statistics for borrowers that have an investment grade rating at the time of the loan issue. Panel B reports statistics for borrowers that have a junk rating at the time of the loan issue. For variable definitions see Appendix A.

	Revolver			
	U.S. Market		European Market	
Variable	Mean	Observations	Mean	Observations
Panel A: Investment Grade				
AISD	64.07	5,860	48.37	462
AISU	14.12	5,860	17.68	462
Commitment Fee	22.96	1,220	18.07	438
Facility Fee	11.59	4,711	8.65	27
Utilization Fee	11.13	2,143	5.14	249
Cancellation Fee	131.66	15	#NA	#NA
Upfront Fee	37.62	5,344	50.59	419
Panel B: Junk Grades				
AISD	195.21	3,123	156.34	75
AISU	40.00	3,123	47.95	75
Commitment Fee	41.00	2,759	46.63	70
Facility Fee	27.94	420	51.78	7
Utilization Fee	21.29	85	14.37	16
Cancellation Fee	143.43	167	200.00	2
Upfront Fee	48.41	3,021	53.83	73

B.II. Total Cost of Borrowing Definition

$$
\begin{aligned}
TCB = \quad & \text{Upfront Fee / Loan Maturity in Years} && \text{(B.1)} \\
& + (1\text{-PDD}) \times (\text{Facility Fee} + \text{Commitment Fee}) && \text{(B.2)} \\
& + \text{PDD} \times (\text{Facility Fee} + \text{Spread}) && \text{(B.3)} \\
& + \text{PDD} \times \text{Prob}(\text{Utilization} > \text{UtilizationThreshhold} \mid \text{Usage} > 0) \times \text{Utilization Fee} && \text{(B.4)} \\
& + \text{Prob}(\text{Cancellation}) \times \text{Cancellation Fee} && \text{(B.5)}
\end{aligned}
$$

The first term annualizes the one-time upfront fee using the contractual maturity of the loan. Using the contractual maturity provides a conservative estimate of the annualized impact of the upfront fee on the total cost of borrowing, given that a large fraction of loans are refinanced prior to the contractual maturity. The second and third terms are a weighted average of the AISU (annual facility fee plus annual commitment fee) and the AISD (annual facility fee plus annual spread). The fourth term adds the annual utilization fee a borrower has to pay if usage exceeds a certain threshold, usually either 33% or 50% of the credit limit. The utilization fee has to be paid on the whole used amount of the credit line and not just on the utilization part above the threshold. Finally, the last term reflects the cost of cancellation weighted by the annual probability that a cancellation. Following BSS (2015), we predict PDD, Prob(Utilization>UtilizationThreshhold |Usage > 0), and Prob(Cancellation).[30]

BSS (2015) report, that the only fee type with an inaccurate coverage of fees in the Dealscan database is the upfront fee. In the U.S. over 80% of loan contracts contain an upfront fee, while this fraction is significantly lower in the Dealscan database.[31] However, BSS (2015) also report that the information on the upfront fee is accurate if it is reported in

[30] See BSS, Online Appendix, http://www.tobias-berg.com/index.php/dont-ignore-the-fees/.
[31] See BSS, who compare SEC filings to DealScan and find this discrepancy.

Dealscan. We follow BSS (2015) and deal with this issue by predicting the upfront fee if it is missing in Dealscan.[32]

[32] See BSS, Online Appendix, http://www.tobias-berg.com/index.php/dont-ignore-the-fees/.

B.III. AISD vs. TCB Decomposition

This table provides results of a linear regression of price terms on European market dummy and control variables. For variable definitions see Appendix A. Fixed effects for year, one-digit SIC code, and borrower credit rating as well as other loan characteristics are included but not shown. We report t-values based on standard errors clustered at the borrowing firm in parentheses. ***, **, * denote significance at the 1, 5 and 10 % level, respectively.

Sample	**Revolver**	**Revolver**	**Revolver**	**Revolver**	**Revolver**
	(1)	(2)	(3)	(4)	(5)
Variable	**TCB/ AISD**	**AISU/ AISD**	**UF/ AISD**	**UTF/ AISD**	**CAF/ AISD**
Europe (1992-2002) (0/1)	0.23***	0.12***	0.44***	-0.02**	0.00
	(6.39)	(13.88)	(7.66)	(-2.28)	(0.09)
Loan Characteristics	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Credit Rating FE	Yes	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes	Yes
Observations	8,788	9,520	8,857	9,520	9,520
Adjusted R^2	0.55	0.27	0.55	0.22	0.07

Table B.III. reports the results of multivariate regressions of the TCB components on a European-dummy and covariates associated with the riskiness of loans and borrowers to analyze, which components explain the difference between TBC and AISD. Column 2 shows that the AISU is significantly higher for European loans also in a multivariate analysis (12% with a t-stat of 15).