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Does a banking relationship help a firm on the syndicated loans market in a time of financial crisis?

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Abstract

The volume of credit granted in the form of syndicated loans saw a marked downturn in 2008. This article seeks to understand how certain firms were nonetheless able to benefit from larger facilities or a lower interest rate than others. Using a sample of syndicated loans issued in 2008 in North America and Europe, and records of syndicated loans since 2003, we show that firms that had developed a relationship with an investment bank obtained a lower spread, but did not benefit from greater loan facilities or longer maturities.

JEL classification: G10, G21, G32

Key words: syndicated loans, banking relationship, credit rationing

1. Introduction

Syndicated bank loans have been the predominant type of financing in the world since the early 1990s, and were the principal source of financing for firms in the USA in the mid-2000s[1]. However, their role in financing the economy was affected by the financial crisis, which brought about a sharp reduction in the overall credit facilities and the number of loans

1 For more details, see Altunbas, Y. et alii (2006)

granted in 2008 (See Tables 1a & 1b). Spreads also rose considerably during 2008, and the average maturity of loans issued declined.

Table 1a.
Change in the number of syndicated loans granted worldwide

	USA and Canada	Europe	World
2006	4,949	1,163	9,541
2007	4,582	1,337	9,270
2008	3,003	950	7,120
2009	2,132	544	5,286

Source: the authors, based on Dealscan

Table 1b.
Change in syndicated loan credit facilities worldwide (in millions of USD)

	USA and Canada	Europe	World
2006	20,832,310	13,282,465	41,675,365
2007	20,418,228	15,446,835	44,614,515
2008	10,228,538	7,715,831	24,760,228
2009	7,670,799	5,920,042	18,235,850

Source: the authors, based on Dealscan

Which firms came through this crisis period best? Which firms managed to find financing on good terms, not only as regards the extent of the facility, but also the interest rate and maturity? What factors enable a firm to obtain a favourable syndicated loan, even in a time of crisis? This article seeks to verify whether the existence of a past relationship between the firm and investment banks operating on the syndicated loans market improved the firm's credit terms in 2008.

Certain articles (e.g. Ivashina and Scharfstein, forthcoming) are starting to focus on what happened during the 2008 crisis, but to the best of our knowledge they do not concern the syndicated loans market. Spread determinants were analysed before the crisis arose, particularly through empirical approaches. The features of the loan agreement (especially the facility and the amount – see Altunbas and Gadanecz, 2004 or Bosch, 2007) are determinant, as is the borrower risk (Angbazo et al. 1998, Ewert and Schenk, 1998) and borrower opacity (Harjoto et al.1998, Bosch, 2007). One very interesting point is the role played by the syndicate

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structure: the number of banks, but also the relative commitments of the arrangers compared to the participating banks explain the spread (Casolaro et al, 2003, Altunbas and Gadanecz, 2004, Corwin and Schultz, 2005). We take all these determinants into consideration, emphasising the role played by the relationship between banks and firms. The impact of these relationships on credit terms for small and medium-sized businesses was studied extensively in the 1990s (see for example Petersen & Rajan, 1994, Cole, 1998), but their role in syndicated loans remains largely unexplored. As far as we know, only three studies mention this factor. Bosch (2007) shows that a pre-existing banking relationship reduces the spread (Yasuda, 2005 reports similar findings for commissions, but on the bond markets). Pichler & Wilhelm (2001), in contrast, following the idea put forward by Sharpe (1990), provide a theoretical demonstration that the temporal stability of the syndicate can result in rent capture that widens the spread. Steffen (2007) reconciles the two views, showing that the positive effect is predominant early in the banking relationship, but subsequently gives way to the negative effect. He examines loans issued in the UK between 1996 and 2005. The maturity and amount of the loan themselves are almost always considered exogenous. Nonetheless, following Schmidt-Mohr (1997), we believe they may be endogenous, particularly in a crisis period when rationing can arise more easily: banks may ration credit for businesses, by reducing the amounts they will lend or the maturity of their loans.

Our article makes three contributions to the literature. First, it sets out to explain the banks' reaction to the financial crisis, focusing on the features of syndicated loans issued in 2008. Next, it endogenises the amount loaned and the maturity, which can be rationing variables for the banks: not only did they increase the spread and reduce the total number of loans in 2008, they also reduced the average loan amount and the average maturity. Most of the existing articles concentrate on spread determination; this article thus provides interesting results concerning the determination of the amount and maturity of loans. Finally, this article shows the importance of

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the bank/firm relationship as regards the terms of syndicated loans, based on an analysis of the firm's loan record.

We use a sample of 4,044 tranches of syndicated loans issued in the USA, Canada, and Europe in 2008. We construct original proxies to capture the relationship between the borrowing firm and the banks in the lending syndicate in 2008. To do so, we examine all syndicated loans issued between 2003 and 2007 to observe the history of loans and syndicates. Simultaneous equations are used to determine the spread, the amount and the maturity of loans. First of all, we look at all the loans of 2008. We find that the number of loans a firm received between 2003 and 2007 increases the amount it is able to borrow in 2008, and lengthens the loans' maturity, but increases the spread. We then restrict the sample to firms that had a//at least one syndicated loan before 2008, and find that a firm that has had a previous relationship with the lead bank or the syndicate benefits from a lower spread.

The rest of the article is organised as follows: section 2 presents the theoretical framework and the hypotheses tested, section 3 describes the data, and section 4 reports the results. Section 5 then concludes.

2. Background and hypothesis

This section presents the hypotheses that will be tested using our sample. Table 2 summarises these hypotheses, which are discussed in more detail below.

Table 2.
Summary of hypotheses

Explanatory variables	Explained variables		
	Spread	Amount	Maturity
1. Loan features			
Maturity	+		
Amount	-		
2. External financing			
Syndicate stability	-	+	+
Previous syndicated loans	-	+	+
3. Syndicate structure			
Syndicate size	-	+	+
Portion of loan financed by arrangers	-	+	+
4. Default risk	+	-	-
5. Information asymmetry between the borrower and the bank	+	-	-

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2.1. Influence of loan features on the spread

The duration of the loan plays a positive role in determination of the spread: a long maturity increases uncertainty over the risk of default by the borrowing firm, and increases the risk of opportunism by the firm. The amount loaned, meanwhile, is presumed to have a negative influence on the spread: staggering screening and monitoring costs can reduce the spread per euro loaned.

2.2. Influence of past syndicated loans

In the same way as a standard loan relationship, a firm has an informational advantage over the banks in the syndicate: it is better informed of the true probability of default, and there is a risk of opportunism. As demonstrated by the theory of the 1980s and 1990s (e.g. Webb, 1992, or Greenbaum and Thakor, 1995), and empirical studies from the 1990s (e.g. Petersen and Rajan, 1994 or Cole, 1998), a long-term relationship between the firm and the bank reduces the risk of credit rationing, and brings the interest rate down for the borrower. This is because it reduces the average cost of acquiring information, as that information can be reused over time. The moral hazard problem is also smaller if good behaviour enables the firm to benefit subsequently from better credit terms. On the other hand, a long-term relationship can lead to rent capture by a well-informed bank (Sharpe, 1990). The argument is transposed to syndicated loans by Pichler and Wilhelm (2001) who show that a syndicate's temporal stability can lead to rent capture. We intend to test the idea that a banking relationship provides an advantage, and the idea that the syndicate's temporal stability enables firms to pay a lower spread, borrow a higher amount and enjoy a longer maturity. Along the same line of thought, we expect that the market's knowledge of a firm will be better when the firm has previously received a syndicated loan, and this will improve the firm's reputation. We can refer to the arguments put forward by Diamond (1989): it is in a firm's interest to reduce risk-

taking in order to build up and retain a good reputation on the debt market. Past operations on the syndicated loans market enable firms to negotiate loans with a lower spread, longer maturity and higher amount.

2.3. Influence of syndicate structure

The structure of the banking syndicate also influences the terms of the loan. First of all, the syndicate's size affects risk diversification. Syndication of a loan spreads the risk between several lenders, thus resulting in lower risk-taking for each bank, and leads to a lower spread. We therefore expect the size of the syndicate to have a negative effect on the spread, and a positive effect on the amount loaned and the maturity of the loan. The portion of the loan financed by the arranging banks also plays an important role, due to the information asymmetry between arrangers and the other banks in the syndicate regarding the borrower's true risk of default. This asymmetry creates a risk of opportunism by the well-informed arrangers, which can make less-informed banks reluctant to join the syndicate. However, the participating banks' confidence increases if the lead bank and all the arrangers retain a large share of the loan, as this signals their belief in the quality of the project. The argument put forward by Leland and Pyle (1977) is relevant here, because this behaviour results in sub-optimal risk diversification for the arrangers. Also, if the arrangers hold a large share of the loan, they will have a greater incentive to ensure that the transaction runs smoothly. Seeing the arrangers finance a large share fosters greater confidence and therefore a lower spread, a larger amount and a longer maturity.

2.4. Influence of default risk

In a traditional risk/return situation, the remuneration demanded by creditors necessarily depends on the risk presented by the borrower, i.e. the probability that he will not repay the syndicated loan issued. For the borrower, the default risk increases the spread charged. This

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risk, borne by the banks, can also lead them to reduce the amount loaned and the maturity of the loan.

2.5. Influence of information asymmetry between the borrower and the banks

The literature on banking relationships tells us that increasing the spread in a high information asymmetry situation, combined with borrower opacity, does not enable the bank to offset the risk borne due to adverse selection and adverse incentive (Stiglitz and Weiss 1981). Yet a serious information asymmetry situation generates high screening and monitoring costs for the bank, and these costs are passed on to the borrower through the interest rate. The spread thus increases with the extent of the information asymmetry. Borrower/creditor information asymmetry can also reduce the maturity of the loan and the amount loaned.

3. Data

3.1. Sample selection

Our data is drawn from the Dealscan database. We start with all syndicated loans issued in 2008 in Europe, Canada and the USA. The base contained 5,917 tranches of loans for 2008. We eliminated all tranches for which the spread, maturity, and bank syndicate nature were not available. This left 2,094 loans to 2,595 different firms. The analysis was applied by tranche, rather than by loan. Each loan consists of separate tranches, with different maturities, rank (senior, subordinated or mezzanine), spread and maturity. A tranche-based approach facilitates consideration of the risk borne by the creditor and the loan features. The sample consists of 4,044 tranches: 3,143 issued to firms in the US and Canada, and 901 to European firms. In a first step, all tranches are taken into consideration in order to explain the spread, facility and maturity. We then restrict our sample, retaining only firms that benefited from at least one syndicated loan in the period 2003-2007. This applied to 2,092 tranches, but we could only keep those which had the necessary information in the database, and so our final subsample

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consisted of 1,733 tranches. The objective is to incorporate more detailed information on the relationship between the firm and the banks in its lending syndicate in 2008. We have information on each of the loans received by firms between 2003 and 2007.

3.2. Dependent variables: loan design

We seek to explain the determinants of syndicated loan features, collectively referred to as Loan design. Three dependent variables are taken into consideration. FACILITY is the amount of each tranche, in millions of dollars. SPREAD is the number of base points that the borrower pays in addition to a base rate, in most cases LIBOR, sometimes EURIBOR or a fixed rate. MATURITY expresses the maturity of the tranche, in months.

Table 3.
Loan design description
*Means in **bold type** differ significantly between the two sub-samples.*

	FACILITY (mean, in millions of dollars)	SPREAD (mean, in base points)	MATURITY (mean, in months)
Full sample (4,044 tranches)	195.44	266.20	52.66
Firms that had at least one syndicated loan between 2003 and 2007 (2,092 tranches)	**272.19**	**249.96**	**47.88**
Firms that had no syndicated loans between 2003 and 2007 (1,952 tranches)	**113.73**	**283.48**	**57.74**

The average facility for tranches in our sample amounts to USD 195.44 million; the average spread is 266.20 base points and the average maturity is 52.66 months. Firms that benefited from at least one syndicated loan between 2003 and 2007 were able in 2008, on average, to borrow a significantly higher amount than firms that were not active in the syndicated loans market between 2003 and 2007 (USD 272.19 million against USD 113.73 million). They also had the advantage of paying a lower spread (249.96 base points compared to 283.48). However, contrary to expectations, loan maturity was shorter for firms that had previously taken out syndicated loans (47.88 months, against 57.74 months).

3.3. Independent variables

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Five types of explanatory variables are considered: banking relationship, syndicate structure, borrower's default risk, information asymmetry, and control variables. Table 4 defines the variables used.

Table 4.

Definition of variables

Variable	Description
Loan design	
FACILITY	Amount of the tranche (in millions of USD)
SPREAD	Spread compared to the benchmark rate, in base points
MATURITY	Duration of the loan (months)
Banking relationship 1	
SEVDEAL08	Dummy variable equal to 1 if the firm had more than one syndicated loan in 2008
NBDEAL	Number of deals (loans) concluded by the firm between 2003 and 2007
SAMENAT	Dummy variable equal to 1 if the firm and the lead bank come from the same geographical zone
Banking relationship 2	
BPTOT	Number of times the lead bank in 2008 was the bookrunner in a syndicate between 2003 and 2007.
STABTOT	Number of times the syndicate was the same between 2003 and 2007
AMOUNT	Total amount borrowed by the firm between 2003 and 2007
Syndicate Structure	
NBBQ	Total number of banks belonging to the syndicate
SHARETTA	Number of top-tier arrangers (TTA)/ Total number of banks
Default Risk	
NOTESD	Rating of the loan under Basel II standards
SUBSID	Dummy variable equal to 1 if the firm is a subsidiary
SECTFI	Dummy variable equal to 1 if the firm belongs to the financial sector
SECTRE	Dummy variable equal to 1 if the firm belongs to the real estate sector
MEZZA	Dummy variable equal to 1 if the debt is mezzanine debt (benchmark = senior debt)
SUBOR	Dummy variable equal to 1 if the debt is subordinated debt (benchmark = senior debt)
PROJFIN	Dummy variable equal to 1 if the loan is to finance a project
DEBTOR	Dummy variable equal to 1 if the loan is for "Debtor-in-Possession Financing" e.g. arranged by a company under a Chapter 11 bankruptcy process
LBO	Dummy variable equal to 1 if the loan is to finance a LBO
TAKEOVER	Dummy variable equal to 1 if the loan is to financing a merger/acquisition
EXIT	Dummy variable equal to 1 if the loan is an "exit facility" to help Chapter 11 debtors to emerge from bankruptcy
DEBTREP	Dummy variable equal to 1 if the loan is to repay a previous loan
Information Asymmetry	
COTE	Dummy variable equal to 1 if the firm is listed

CLAUSEFI	Dummy variable equal to 1 if the loan includes a financial covenant clause
LEAGUE	Dummy variable equal to 1 if the lead bank is in the Thomson Financial "league table"
Control Variables	
TRANCHES	Number of tranches in the loan concerned
NAT	Dummy variable equal to 1 if the borrower is European, 0 if it is North American (USA or Canada)

3.3.1. Banking relationship

Initially, we consider for all tranches whether the firm habitually operates on the syndicated loans market. SEVDEAL08 is equal to 1 if the firm had more than one syndicated loan in 2008, and 0 otherwise. NBDEAL is the number of loans received by the firm between 2003 and 2007. The relationship between the lead bank and the firm is taken into consideration through their geographical proximity: SAMENAT is equal to 1 if the firm and the lead bank come from the same geographical zone. Next, we enhance the analysis by adding more detailed variables on the nature of the relationship between the firm and the bank. These variables are only constructed for firms that had at least one loan between 2003 and 2007. BPTOT indicates the number of times the lead bank in 2008 was the bookrunner for a syndicated loan issued between 2003 and 2007. STABTOT is an indicator of syndicate stability: it shows the number of times the 2008 syndicate was the same for previous syndicated loans. AMOUNT is the total amount the firm borrowed on the syndicated loans market between 2003 and 2007.

3.3.2. Syndicate structure

Syndicate size is measured by the total number of banks (NBBQ), and the relative importance of the top tier arrangers is measured by the ratio of their number to the total number of banks (SHARETTA).

3.3.3. Borrower default risk on the tranche under consideration

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The measure of the borrower risk (NOTESD) is based on the Standard & Poor's ratings available from Bankscope. These ratings are difficult to use in an empirical study, and have been converted into a weighting (from 0% to 150%) identical to the weighting used for standard credit risk measures under Pillar 1 of the Basel II framework. This approach offers two advantages: it can quantify the risk in the context of an econometric study, and makes it possible to incorporate observations for which the database contains no rating: taking the standard approach to credit risk, a 100% weighting is applied to an unrated firm. We use several variables to enhance the measure of default risk in each tranche. SUBSID is equal to 1 if the firm is a subsidiary, and 0 otherwise. The sector the borrower belongs to is an important factor. In the period under consideration, the fact that a firm belongs to the real estate sector (SECTRE, equal to 1 in such a case and 0 otherwise) or the financial sector (SECTFI, equal to 1 in such a case and 0 otherwise) theoretically indicates a higher risk, or at any rate lower confidence by syndicate members. We also take into consideration the loan's degree of subordination. For a mezzanine debt, MEZZA is equal to 1, and for a subordinated debt SUBORB is equal to 1. The third case – our benchmark – is a senior debt. Finally, the default risk borne by the syndicate depends on the intended application of the funds, in other words the loan purpose. We identified 26 different purposes, but ultimately only 5 of them play any role in determining the features of the loan. We therefore use the following 6 variables: PROJFIN is equal to 1 if the purpose of the loan is to finance a project; DEBTOR is equal to 1 if the loan is for "Debtor-in-Possession Financing" arranged by a company while under the Chapter 11 bankruptcy process; LBO is equal to 1 if the loan is undertaken to finance an LBO operation; TAKEOVER is equal to 1 if it is to finance a merger or acquisition operation; EXIT is equal to 1 if the loan is intended to finance a business recovery under Chapter 11; DEBTREP is equal to 1 if the loan is used to repay a previous loan.

3.3.4. Information asymmetry

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It is difficult to measure the scale of informational imperfections directly. Information asymmetry is often assessed indirectly, primarily through debtor transparency. Listed firms are presumed to be more transparent. We therefore use the variable COTE, a dummy variable equal to 1 if the firm is listed. The inclusion of financial covenant clauses in the loan agreement (CLAUSEFI is equal to 1 in such a case, 0 otherwise) can restrict the manager's freedom of action and therefore reduce the risk of opportunistic behaviour by the manager. Lastly, informational problems between the arrangers and the other banks in the syndicate are eased by the lead bank's reputation. We therefore use the variable LEAGUE, which is equal to 1 if the lead bank is included in the Dealscan league tables.

3.3.5. Control Variables

Two control variables are used: the number of tranches in the loan (TRANCHES), and the borrower's nationality, in case there are disparities associated with the geographical area (NAT is equal to 1 for a European borrower and 0 for a North American borrower from the USA or Canada).

Table 5.
Descriptive statistics

	Full sample (4,044 tranches)			Sub-sample (1,733 tranches)		
	Min	Mean or proportion	Max	Min	Mean or proportion	Max
Loan design						
FACILITY (*millions of USD)*	0.28	195.44	10419.70	0.63	271.42	10419.70
SPREAD (*bp)*	5.00	266.65	2000.0	8.50	250.58	1646
MATURITY (*months*)	1	52.69	354	1	47.90	336
Banking relationship 1						
SEVDEAL08		66.05%			65.20%	
NBDEAL	0	1.24	18	1	2.41	18
SAMENAT		51.53%			53.20%	
Banking relationship 2						
BPTOT				0	0.40	5
STABTOT				0	0.08	5
AMOUNT *(millions of USD)*				1.93	1410.2	$1{,}142.10^5$
Syndicate Structure						
NBBQ	1	5.80	47	1	6.73	47

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SHARETTA	2,93%	44.23%	100%	0%	41.23%	1.25%
Default Risk						
NOTESD	20.00%	101.37%	150.00%	20%	101.73%	150%
SUBSID		15.18%			17.26%	
SECTFI		6.45%			7.12%	
SECTRE		9.27%			7.36%	
MEZZA		1.58%			1.38%	
SUBOR		0.42%			0.38%	
PROJFIN		3.68%			1.58%	
DEBTOR		1.16%			1.96%	
LBO		18.50%			13.05%	
TAKEOVER		6.27%			8.32%	
EXIT		0.54%			0.86%	
DEBTREP		0.015%			0.019%	
Information Asymmetry						
COTE		28.39%			39.72%	
CLAUSEFI		21.19%			27.24%	
LEAGUE		10.51%			11.32%	
Control Variables						
TRANCHES	1	2.22	11	1	2.18	11
NAT		22.28%			19.74%	

4. Methodology and empirical results

4.1. Analysis of loan terms in 2008

We study the determinants of the features (spread, facility and maturity) of the syndicated loans granted in 2008. The three dependent variables are determined simultaneously by the arranger when the loan is organised. As they are codetermined, we use a simultaneous equation model. The following model is estimated simultaneously:

Spread = f {banking relationship, default risk, information asymmetry, syndicate structure, facility, maturity} (1)

Facility = f {banking relationship, default risk, information asymmetry, syndicate structure, spread, maturity} (2)

Maturity = f {banking relationship, default risk, information asymmetry, syndicate structure, spread, facility) (3)

We decided to use the two-stage least squares method, an equation-by-equation estimation method using instrumental variables. With a finite sample, the advantage of an estimate of the overall system is not clearly established, and an equation-by-equation estimation is perfectly

valid[2]. First of all, we verified that none of the equations was under-identified, and checked for multicollinearity between explanatory variables.

Table 6.
Simultaneous regressions – Model 1

*The estimated coefficient is shown in the table. Numbers in brackets show the associated critical probability (i.e. the probability of error under a non-null hypothesis for the coefficient). *Significant at 10% ** Significant at 5% *** Significant at 1%. Where no coefficient is shown, that variable has no significant impact on the dependent variable.*

Variable	SPREAD	FACILITY	MATURITY
CONSTANT	−161.478 **	193.661 ***	62.728 ***
	(0.018)	(4.00e-04)	(2.80e-08)
Loan design			
FACILITY	−0.149*		−0.171***
	(0.098)		(7.31e-08)
SPREAD		-0.583 ***	−0.133***
		(0.003)	(5.61e-10)
MATURITY	8.932 ***		
	(3.06e-06)		
Banking relationship 1			
SEVDEAL08	19.307	−126.281 ***	
	(0.189)	(9.29^{e}-07)	
NBDEAL	11.950 ***	33.893 ***	2.893 ***
	(0.002)	(1.61^{e}-11)	(0.029)
SAMENAT			
Syndicate Structure			
NBBQ	2.942	33.272 ***	4.928 ***
	(0.333)	(4.23^{e}-64)	(8.18e-07)
SHARETTA	114.495 ***	188.340 ***	49.619 ***
	(9.51e-05)	(1.51e-06)	(6.21e-08)
Default Risk			
NOTESD		−4.305 ***	−0.180
		(1.28e-11)	(0.195)
SECTRE	65.671 **		−25.814***
	(0.034)		(9.51e-07)
MEZZA	−15.421		−25.444**
	(0.704)		(0.039)
PROJFIN	−747.983 ***		
	(3.25e-07)		
DEBTOR	523.692 ***		
	(3.93e-15)		
LBO	−30.814	−70.334 *	26.468 ***
	(0.401)	(0.058)	(2.92^{e}-07)

2 When there is no heteroskedasticity and no autocorrelation, the 2SLS estimator is the most efficient instrumental variable estimator (Greene 2008).

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TAKEOVER	89.796 ** (0.049)	454.777 *** (2.42e-36)	72.006 3.14e-06 ***
EXIT	118.980 * (0.087)		58.593 *** (0.006)
DEBTREP		−195.631 *** (0.005)	
Information asymmetry			
COTE		107.981 *** (2.34e-06)	11.224 ** (0.031)
CLAUSEFI	−65.984 *** (1.93e-06)	−47.900 * (0.053)	−12.539 *** (0.007)
LEAGUE	103.564 *** (1.09e-06)		
Control Variables			
TRANCHES	−12.575 (0.123)		6.911 *** (1.37e-09)
NAT	−277.630 *** (1.42e-18)	64.871 * (0.073)	
Sample size	*4044*	*4044*	*4044*

Our results show the link between the terms of the loan. A longer maturity leads to a higher spread (attributable particularly to the higher risk involved), and a higher amount leads to a lower spread (chiefly due to economies of scale on the bank's fixed costs). We thus confirm the majority findings in the literature (Angbazo et al. 1998, Casolaro et al. 2003 and Altunbas and Gadanecz 2004)[3]. Logically, a large spread (which is a sign of a high default risk) tends to reduce the amount loaned and the loan's maturity, presumably for reasons of prudence. Similarly, a higher facility shortens the maturity, also for reasons of risk reduction.

In keeping with the theoretical framework, the firm's past financing record influences its loan terms. The greater the number of loans it had between 2003 and 2007, the greater the amount a firm could borrow in 2008 and the longer the maturity of the loan. NBDEAL, in contrast, has a positive influence on the spread. There are several possible explanations for this finding: the banks may perceive overuse of syndicated loans, instead of diversifying financing through traditional forms of credit and capital-raising on the markets, as a negative signal; issuing syndicated loans to the same firms may reduce the gain on risk diversification for the banks;

3 Harjoto et al. (1998), however, find a negative link between maturity and spread, and Bosch (2007) finds a positive link between facility and spread.

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consistent with Sharpe (1990) and Pichler & Wilhelm (2001), the banks' knowledge of the firm can generate a hold-up effect; frequent calls on the syndicated loan market increase firms' leverage, and therefore their default risk, and this widens the spread. Finally, the fact of receiving several loans in 2008 reduces the amount loaned. Firms spread their credit needs across the year, presumably in order to take advantage of any reversal of trends in the crisis environment.

We also test the influence of the syndicate structure on financing terms. As hypothesised, the larger the syndicate size, the higher the amount loaned and the longer the loan maturity. Yet we find no significant impact on the risk premium demanded, in contrast to authors such as Altunbas and Gadanez (2004), who confirm a negative impact. The proportion of arrangers//portion of the loan financed by the arrangers ??portion of arranging banks, or portion of loan financed by the arrangers ?? (estimated as the percentage of arrangers in the total number of banks) is confirmed to have a positive effect on the amount loaned and the loan maturity, in line with the hypotheses tested. However, the proportion of arrangers//portion of the loan financed by the arrangers meme question increases the spread rather than reducing it, contrary to the theoretical framework of Leland and Pye (1977) and other empirical studies (e.g. Casolaro et al., 2003 and Bosch, 2007). Having a larger portion of the loan financed by the arranging banks implies a larger borrower risk, even though the arrangers signal their confidence in the project to other banks in such a case. The arrangers will thus charge for their risk-taking through a higher spread, reflected in a higher cost of credit for the borrower. Another possible reason for this result is the risk of free riding in the monitoring activity that arises when the number of arranging banks is too high. This is the argument put forward by Corwin and Schlutz (2005) to explain the positive association they find between syndicate size and spread.

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The default rating has a negative influence on the amount of the loan. We find no significant link with the spread, contrary to the results reported by Angbazo et al. (1998), Harjoto et al. (1998) and Bosch (2007). Another interesting finding is the role of belonging to the real estate sector: as expected, the impact on the spread is positive, while the impact on maturity is negative. This sector was the first to be hit by the current crisis, and real estate firms saw their cost of credit rise and the duration of loans fall as creditors lost confidence in this type of borrower.

The purpose of the loan also plays a role in determining the loan design. These contrasting results essentially show that loans with a risky purpose, such as financing takeovers or business recovery, are charged a higher spread, but also involve higher amounts and longer maturities. Conversely, low-risk loans such as those to be used to finance projects have a lower spread.

Our results also show that informational problems play a decisive role.

The fact that a firm is listed, and therefore better-known and subject to transparency obligations, enables it to borrow higher amounts over longer periods. In contrast to the findings of Harjoto et al. (1998) and Bosch (2007) among others, the spread is unaffected by listing. Inclusion of financial covenant clauses to protect creditors reduces the spread, but also results in lower amounts and shorter maturities. Lastly, the lead bank's presence in the Dealscan "league tables" increases the spread. This cannot be explained by internal information asymmetries in the syndicate: the lead bank's reputation is supposed to reduce the spread by reassuring the participating banks. But our finding is attributable to the information asymmetries between the firm and the banking syndicate: the borrower is prepared to pay a high spread in order to secure the services of a reputable investment bank.

One last finding is very interesting: North American firms were charged higher spreads than European firms, and their facilities were lower. The crisis seems to have affected Canada and

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the US most strongly, unless this difference in rates and loans is a permanent feature of the markets. The literature does show that international differences exist in rates on syndicated loans (see for example Christodoulakis and Olupeka, 2009).

4.2. Analysis of previous banking relationship

We now wish to see whether previous relationships developed by the firm with the banks in the 2008 syndicate improve the terms of the loan received in 2008. We study the determinants of loan features (spread, facility and maturity) for syndicated loans issued in 2008 to firms that had previously had a loan between 2003 and 2007. We restrict the sample to the 1,733 tranches received by these firms for which the relevant information is available. The dependent and independent variables are the same as previously, but more variables for banking relationships are more detailed//the banking relationship variables yield more information. The econometric model is unchanged.

Table 7.
Simultaneous regressions – Model 2

*The estimated coefficient is shown in the table. Numbers in brackets show the associated critical probability (i.e. the probability of error under a non-null hypothesis for the coefficient). *Significant at 10% ** Significant at 5% *** Significant at 1%. Where no coefficient is shown, that variable has no significant impact on the dependent variable.*

Variable	SPREAD	FACILITY	MATURITY
CONSTANT	-90.187** (0.015)	215.478 ** (0.013)	34.068 *** (1.31e-22)
Loan design			
FACILITY	-0.079*** (3.00e-04)	-	2.541e-4 (0.5696)
SPREAD	-	0.616 ** (0.042)	-0.040 *** (0.001)
MATURITY	2.521 *** (0.008)	-0.654722 (0.630)	-
Banking relationship 1			
SEVDEAL08	65.585 *** (1.19e-09)	-110.690 *** (0.006)	9.052 *** (2.28e-05)
NBDEAL		18.2317 * (0.051)	-2.108*** (1.64e-08)
SAMENAT			-3.184 ** (0.017)

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Banking relationship 2			
BPTOT	-12.540 *** (0.001)	3.189 (0.809)	-0.368 (0.534)
STABTOT	-48.41 *** (2.27e-05)	-36.308 (0.328)	1.916 (0.228)
AMOUNT	0.004 *** (0.006)	0.049*** (1.13e-56)	-2.89e-04 (0.189)
Syndicate Structure			
NBBQ		23.843 *** (4.94e-14)	
SHARETTA	151.474 *** (2.69e-09)		
Default Risk			
NOTESD	1.571 *** (3.18 e-11)	-3.309 ** (0.003)	0.183 *** (3.61e-06)
SECTRE			
MEZZA			
PROJFIN			
DEBTOR			
LBO	84.249 *** (0.010)		40.220*** (1.34e-53)
TAKEOVER		475.088 *** (9.04e-18)	
EXIT			
DEBTREP			
Information asymmetry			
COTE			
CLAUSEFI			
LEAGUE		122.797 ** (0.012)	
Control Variables			
TRANCHES			
NAT	-149.762 *** (4.16e-13)		
Sample size	*1733*	*1733*	*1733*

The most striking result is that a past relationship between the 2008 syndicate and the borrowing firm has a negative impact on the spread. Temporal stability in the syndicate

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(measured by STABTOT, the number of times between 2003 and 2007 that the syndicate had the same members as in 2008) reduces the spread. A previously-established relationship with the lead bank (captured by BPTOT, the number of times the lead bank of 2008 was bookrunner for previous loans) also reduces the spread. This shows that better knowledge of the borrower and the existing trust outweigh the hold-up effect, contradicting the findings of Steffen (2008). However, the previous relationship had no significant impact on the amount loaned or the maturity. The total amount borrowed in 2003-2007 had a positive effect on the spread in 2008. A high amount might be expected to indicate high leverage, which would lead to a high risk premium, but AMOUNT in fact has a positive influence on the amount loaned in 2008 – maybe quite simply due to a firm size effect.

The other results are basically the same as in model 1, but certain new results are worth noting. The fact that the bank is in the league tables increases the amount loaned, presumably due to the bank's reputation. Having several syndicated loans in 2008 increases the spread. This is in line with our previous result: the more loans the firm had between 2003 and 2007, the higher its spread (see above). Finally, incorporating a more detailed firm credit record, the number of loans it had between 2003 and 2007 not only increases the spread, but reduces maturity. This suggests that extensive operation on the syndicated bank loans market is not favourable for a firm.

5. Conclusion

In the crisis of 2007 and 2008, the banks reduced the amount of credit granted and tightened up their terms on the syndicated loans market. Following an approach taken in the literature on bank credit in the 1980s and 1990s, we looked to see whether a previous relationship between the firm and the banking syndicate, and more generally the firm's past credit record and therefore its reputation on the syndicated loans market, would cushion the firm somewhat against this trend towards stricter terms.

Constructing original variables concerning the firm's syndicated loan record between 2003 and 2007, we show that frequent calls on the syndicated loans market are unfavourable for the firm in terms of spread, facility and maturity. Borrowing frequently or in large amounts on this market does not enable the firm to build up a positive reputation that would improve its credit terms, especially in a time of crisis.

We also show that a relationship between the firm and its syndicate, particularly with the lead bank, improves its credit terms. More precisely, this relationship reduces the spread but does not affect the amount or the maturity. We thus show that if there is a hold-up effect, it is smaller than the positive effect arising from better knowledge of the firm and reduction of the moral hazard. We also show that contrary to the majority of 1990s findings on Small business lending, a banking relationship does not protect the firm from a reduction in its credit facilities.

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