國立政治大學會計學系

碩士學位論文

併購與聯貸借款條件

M&As and Syndicated Loan Terms

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二年來面對研究所的課業壓力，在落實 COVID-19 防疫措施之際，能如期順利完成碩士論文，內心除了喜悅，更滿懷無限的感激，感謝這一路以來，不吝給我指導與打氣的教授們，還有我摯愛的家人與好朋友。

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摘要

本研究利用 2000-2016 年的美國聯貸案作為樣本，探討併購活動與借貸成本的關係。本研究主要發現從事併購活動的公司可以獲得較佳的聯貸條件，包括較低的利率、較高的借款金額與較長的還款期間，而且併購活動會吸引更多參貸銀行參與。本研究使用語言與殖民歷史作為文化背景的代用指標，發現當被併購方之所在國家的官方語言與殖民歷史與美國(併購方所在國家)較相似，借款人(即併購方)能享受到更低的借款利率，此結果顯示相似的國家背景資訊不對稱程度較低，有利併購整合與價值創造，進而使借款人願意提供較低的借貸利率。最後，研究發現當被併購方之所在國家的 GDP 較高，借款人(即併購方)能享受到更低的借款利率與較高的借款金額。

關鍵詞: 併購活動、聯貸案、價值創造、資訊不對稱

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Abstract

This paper investigates the relation between merger and acquisition activities and bank loan financing in the syndicated loan market. I utilize syndicated loans in the US from 2000 to 2016 as the research setting. My key finding is that firms with M&A experience within two years obtain lower loan spreads, larger loan amounts and longer maturities. I also examine how country characteristics of the target companies affect the cost of bank loans, and find evidence supporting the information asymmetry hypothesis. I use language and colonial history as proxies for cultural background. I document that when acquirers and acquirees domiciled in counties with similar official language and colonial history, the effect of M&A experience on loan spreads is more pronounced. I further report that firms engaging M&A deals attract more participant lenders. Lastly, I point out that when the target companies domiciled in countries with higher GDP, the effect of M&A experience on loan spreads and amounts is more pronounced.

Keywords: Mergers and acquisitions, Syndicated loan, Value creation, Information asymmetry

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1. Introduction

Mergers and acquisitions (M&As) have been pretty common nowadays. Companies often pursue strategic or financial goals through M&As. M&As are attractive because they usually accompany value creation, which perhaps derived from synergetic effect or coinsurance effect. Combined firms benefit from the resource exchanging, including both tangible and intangible assets (Rahman et al., 2016; Guardo et al., 2019; Chalençon et al., 2016; Bielstein et al., 2018). Yet mergers and acquisitions also bring out risks regarding how information barrier affects integration and expected synergy (Lim et al., 2016).

Prior studies mainly focus on the M&As' operating performances, including reputation, market efficiency, customer resources, etc. (Chalençon et al., 2016; Rahman et al.,2016; Guardo et al., 2019). Relatively few studies investigate the impact of the M&A activities on cost of debts. Knowledge is still scant concerning how lenders perceive M&A engagement. Nonetheless, it is crucial to understand how lenders consider the economic meaning of M&As. In this paper, I aim to fill the gap in the literature. The key point of this study is to examine whether and to what extent companies' M&A experiences affect their bank financing.

In this study, I utilize a sample of the United States public firms that take out syndicated loans during 2000 to 2016 from the Dealscan database. I collect data regarding M&A activities from SDC platinum to see whether the borrowing firms had involved in any M&A deals within two years preceding the loan initiations. I construct several measures to test the relationship between M&A deals and cost of bank loans.

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My main finding is that firms with M&A experiences obtain better loan terms, including lower loan spreads, larger loan amounts, and longer maturities. The results remain robust when I perform regressions using propensity score matching (PSM) method. In addition, I find that cross-border M&As are mainly associated with lower loan spreads.

I further explore the interplay between M&As and different country characteristics of target companies and its effect on loan terms. I use language and colonial history as proxies for cultural background. I find that more M&A deals result in lower loan spreads when acquirers and acquirees domiciled in countries with more similar official language and colonial history, compared to the group with lower similarity of official language and colonial history. I posit that similar cultural background lowers the information cost for firms to integrate and create value, which would in turn result in lower cost of debt.

I extend my investigation by examining the effect of M&A frequency on syndicate structure. I find that number of M&As increases the total number of lenders, especially for participant lenders. In addition, I examine how country GDP in which target companies domiciled influence the effect of M&As on loan terms. My finding indicates that when the GDP of the target company is higher than the sample average, the effect of M&As on loan spreads and amounts is more pronounced.

My study contributes to the existing literature in various ways. First, my findings provide evidence on the relationship between M&A activities and syndicated bank loan terms while existing literature has mostly been focused on how companies perform after M&As. Second, I give insights on how banks respond to companies' M&A deals. Third, complementing the existing research, I provide further evidence of the extent to which

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target companies' country features affect loan pricings. Lastly, my results document that M&A activities also affect syndicate structures.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and the development of hypotheses. Section 3 describes research design and sample selection. Section 4 presents the descriptive statistics and empirical findings. Section 5 is the conclusion.

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2. Literature review and hypothesis development

2.1. Mergers and acquisitions

Mergers and acquisitions have been a notable way for the companies to enlarge their scales, increase competitiveness, as well as enhancing their efficiencies of capital allotment (Xie et al., 2020) and increase firms' visibility in the meanwhile (Fang et al., 2012). Moreover, Koerniadi et al. (2015) document that international M&As lessen the default risk of the acquiring firms. However, Furfine and Rosen (2011) demonstrate that domestic mergers in the United States raise the default risk.

Mergers and acquisitions cover a wide range of topics. Literature discusses in different aspects including finance, accounting, marketing, etc. Post-merger conditions also capture many attentions from researchers. Mergers and acquisitions performance usually affected by numerous effects (Rahman et al.,2016).

Value creation is derived from the synergetic effect and coinsurance effect of the combined firm. Accessing strategic resources from another firm and economies of scale help the firm be differentiated and cost efficient. After the M&A, acquirer's originality and generality rise. From marketing perspective, M&A deals also enhance marketing efficiency by cross-selling products to partner's customers (Rahman et al.,2016; Guardo et al., 2019). Aside from physical resource sharing, intangible resource (e.g., reputation) has positive impacts on value creation in M&A activities (Chalençon et al., 2016). Bielstein et al. (2018) also document that coinsurance effect decreases systematic risk of the diversified firm. However, there's also a diversification discount that dampen the valuation of the diversified firm caused by the inefficient cross-subsidization.

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Accounting plays a significant role in M&A transactions. Marquardt and Zur (2015) find that accounting quality influences the deal structure, speed of M&A, and the likelihood of the deal completion. Besides, it affects the allocation efficiency of the capital resources. Furthermore, M&As, especially cross-border M&As, have more aspect to consider due to the information asymmetry. Prior researches find that information costs play a crucial role in cross-border activities. Owen and Yawson (2013) indicate that cross-border strategic alliances are more desirable while facing lower information costs. Transparency of accounting information is a prerequisite for M&As. For example, differences in accounting standards between two countries generate information costs. M&A transactions are more active between countries with similar Generally Accepted Accounting Principles (GAAP) (Francis et al., 2016). Zhu (2014) also documents that mandatory IFRS adoption decreases related information processing cost, and thus fosters the bilateral M&As. Furthermore, Jeanjean et al. (2015) report that companies who voluntarily disclose annual reports with English version may lessen information asymmetry, which would in turn increase foreign ownership.

Background differences also build obstacles for cross-country activities (Lim et al., 2016). Lin (2009) demonstrates that foreign investors work better in countries with similar legal system and culture because of information asymmetry. Dow et al. (2016) show that linguistic and religious difference between countries and diversity within the acquiree's country have a negative influence on corporate ownership structure. Due to uncertainty and information asymmetry, firms prefer lower equity share or find local partners to compensate for the obstacles. Kedia and Reddy (2016) argue that linguistic distance between the countries of acquirer and target companies lowers the acquisition performance, whereas more cross-border acquisition experience may moderate such effects.

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According to these findings, M&As are usually affected by synergetic effect and coinsurance effect, where combined firms benefit from physical resource sharing or reputation. On the other side, M&As bare some risks, including information barrier in certain circumstances (Rahman et al.,2016, Guardo et al., 2019., Chalençon et al., 2016, Marquardt and Zur, 2015, Francis et al. ,2016, Bielstein et al.,2018).

2.2. Cost of debts

Debt is one of the methods for companies to obtain capital. Previous studies document that loan contract terms are associated with lender and borrower's characteristics, loan participation, and country-level institutional factors, etc. (e.g., Godlewski et al., 2012; Strahan, 1999; Graham et al.,2008; Bae and Goyal, 2009; Ivashina, 2009)

Godlewski et al. (2012) indicate that the reputation and experience lenders possess may bring down loan spreads. As for borrower's characteristics, banks use both the price and non-price terms of loans to compensate while dealing with borrower risk. Riskier borrowers (i.e., borrowers with smaller size, less cash, and hard for outsider to value) tend to pay more for the loans. In addition, they will face non-price terms of loans with small amounts, secured, and with shorter maturities (Strahan, 1999; Graham et al.,2008). Drago and Carnevale (2020) then prove CSR-ratings the firms hold affect the loan spreads. Firms with low CSR-ratings bear higher costs, while firms with high CSR-ratings not necessarily benefit from lower cost of debts.

In addition to the present situation, potential future value will be taken into account, too. Plumlee et al. (2015) indicate that private information concerning forthcoming patent lowers borrowing cost because of the expected value of impending patent. Moreover, institutional factor is one of the points when banks consider the risks. Bae

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and Goyal (2009) argue that property rights protection leads to more efficient contracting. While borrowers situated in countries where property rights are well protected, banks tend to lend more, ask for lower spreads and provide longer maturities. Prior studies show that corporate borrowers benefit from lower loan spreads and greater non-pricing loan contract terms when borrowers are situated in the countries that adopt International Financial Reporting Standards (IFRS) or voluntarily adopt IFRS (Kim et al., 2011; Chan et al.,2015). The comparability of financial statement diminishes the information drawback for foreign banks and stimulates cross-border lending. The studies also give a glimpse of the information asymmetry problem.

Information asymmetry plays a crucial role when it comes to the cost of debts (Dennis and Mullineaux,2000; Giannetti and Yafeh, 2012). If firms cannot credibly tell their future prospects, lenders must spend costly in due diligence and information production to identify the creditworthiness of potential borrowers or to pick out abnormally poor quality borrowers (Bharath et al., 2011). Mazumdar and Sengupta (2005) prove that firms with high ratings for voluntary disclosures may benefit from lower cost of debts. It implies that lower information asymmetry lessens loan cost, vice versa. Banks will use stricter loan contract terms to defeat the information problems (Graham et al., 2008). Ortiz-Molina and Penas (2008) argue that firm owners with poor credit records and firms that are more informationally opaque will get shorter maturities. A firm with poor accounting quality tends to face stricter debt covenant design (Spiceland et al., 2016).

Therefore, firms may use various approaches to alleviate information asymmetry. Anderson et al. (2004) show that boards and audit committees significantly influence the reliability of financial reports. Firm with completely independent audit committees is correlated with low cost of debts. Chen and King (2014) find that corporate hedging

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is related to lower cost of debt which mainly derived from the decrease in agency cost, bankruptcy risk, and information asymmetry.

Dennis and Mullineaux (2000) argue that increase of borrower's transparency, reputation of syndicate's lead manager, and maturity length enhance the chance of a loan to be syndicated. Still, the information asymmetry problem exists in syndicated loan contracts.

In the market of syndicated loans, when information asymmetry between the lenders and borrower is severe, lead arrangers tend to choose participant lenders who are more familiar with the borrower, i.e., they have prior lending relationships and geographically closer to the borrower (Sufi, 2007). On the other hand, since lead bank is the one who performs due diligence, it often grasps more information than the participant lenders. This leads to the information asymmetry problem between lead lender and participant banks. Nevertheless, an increase in the lead lender's share may alleviate this problem, which reduce the amount of loans retained by the participant lenders. Evidence shows that a 9% more share retained by the lead bank decreases the loan spreads required by participants by around 4% (Ivashina, 2009).

2.3. Hypothesis development

2.3.1. The effect of M&As on the terms of loan contracts

In this fast-changing world, M&A has been one of the ways for companies to transform, enlarge their market shares, or implement any other strategic or financial policies. M&A activities help integrate resources and reputation, and thus enhance the market positions of the firms (Xie et al., 2020). While the synergy effect of M&As seems to be attractive, the cost of M&A transactions is often tremendous. Therefore, it

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is crucial to learn how stakeholders (e.g., banks) view these transactions.

Prior literature indicates that cost of debts may vary according to different features of borrowers. Lenders will consider borrowers' size, cash flow, information asymmetry, ratings, and the expected future value (Strahan, 1999; Anderson et al., 2004; Mazumdar and Sengupta, 2005; Chen and King, 2014; Plumlee et al., 2015; Spiceland et al., 2016; Drago and Carnevale, 2020). Based on the aforementioned literature, I expect that low information asymmetry, together with optimism of the future value and profitability will lower the cost of debts.

Corporate alliances raise firms' transparency and visibility, and notify potential lenders about their future outlooks and riskiness via significant information spillover (Fang et al., 2012). For mergers and acquisitions, although the synergetic effects derived from M&As vary across different circumstances, they usually enhance the efficiency in marketing and resource usage (Rahman et al., 2016; Guardo et al., 2019; Chalençon et al., 2016; Bielstein et al., 2018). M&A transactions enlarge firms' scales and increase competitiveness (Xie et al., 2020).

Bielstein et al. (2018) observe the M&A deals in the US from 1985 to 2014, and document the coinsurance effect lessens the cost of capital by 36 basis points on average, while inefficient capital market increases the cost of capital by only 7 basis points. Thus, I expect M&As (as well as cross-border M&As) will increase the firm's size, cash flow, and future value. They also decrease information asymmetry which consequently lead to lower loan spreads. Therefore, I bring out my hypothesis as follows:

H1: Borrowers with M&A experience are associated with lower loan spreads.

Apart from the loan pricings, banks also use non-price terms of loans as a repay for baring borrower risks. For borrowers with poor rating or profitability, or even hard

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to see through the risk, they face non-price terms of loans with smaller amounts and shorter maturities (Strahan, 1999).

M&As produce synergy and create value by scale economies or cross-selling products, and corporate alliances raise the transparency of firms and give more chances for potential lenders to know more about firms' risks (Rahman et al., 2016; Guardo et al., 2019; Chalençon et al., 2016; Fang et al., 2012). I expect firms with M&A (as well as cross-border M&A) experience not only get lower spreads, but also get more favorable contract terms including larger loan amounts and longer maturities. It leads to my following testable hypothesis:

H2: Borrowers with M&A experience are associated with larger loan amounts and longer loan maturities.

2.3.2. The effect of different country-pairs where acquirers and acquirees domiciled on the terms of loan contracts

Uncertainties related to M&A synergy (e.g. information costs during integration) may have an impact of the relation between M&A experiences and loan contract terms. From the lender's perspective, information asymmetry is an enormous problem (Mazumdar and Sengupta, 2005; Anderson et al., 2004; Spiceland et al., 2016; Ivashina, 2009).

Information asymmetry derived from cultural differences between the two countries has been an important issue. Cultural difference exacerbates information asymmetry which affects companies' intentions of doing cross-border business (Hitt et al., 2006). Prior studies imply different country factor like language produce information costs (Lin, 2009; Dow et al., 2016). Rose (2004) documents countries sharing a language or colonial history tend to trade more. In a similar vein, Giannetti

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and Yafeh (2012) demonstrate that sharing the same culture encourages social interaction, while cultural conflicts may cause failures in cross-border mergers. Giannetti and Yafeh (2012) also exhibit cultural distant between borrower and lender results in higher bank loan costs, including higher spreads and the size restrictions.

National cultural differences indicate distances of organizational features, which lead to more management costs (Kogut and Singh, 1988). Cultural differences impose an extra integration cost, and lead to erosion of synergy and deal value (Lim et al., 2016). Thus, I posit that cultural differences between M&A parties affect how lenders evaluate firms' outlooks. When U.S. firms get involved in M&As where target firms located in countries with cultural background more similar to USA, they face better loan contracts. Formally stated, my third testable hypothesis is as follows:

H3：Evidence of H1 and H2 is more pronounced among M&As with the acquirers and acquirees domiciled in countries with similar cultural background.

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3. Research design

3.1. Regression Analyses

To test my hypotheses, I examine the relation between M&A/Cross-border M&A and bank loan using the following models:

$$LoanFeature = \alpha_0 + \alpha_1 M\&A + \alpha_2 Borrower\_Characteristics_{t-1} + \alpha_3 Loan\_Features_t + Controls + \varepsilon_t \quad (1)$$

$$LoanFeature = \alpha_0 + \alpha_1 Cross\text{-}border\_M\&A + \alpha_2 Borrower\_Characteristics_{t-1} + \alpha_3 Loan\_Features_t + Controls + \varepsilon_t \quad (2)$$

All variables are defined in Appendix A. *LoanFeature* denotes one of these loan contracting features: (1) loan spread (*SPREAD*), which defined as the natural log of all-in spread drawn. It stands for the annual spread paid over the benchmark rate (e.g., LIBOR, TIBOR, or other equivalents) for each dollar drawn down from the loan (2) loan size (AMOUNT), which is the natural logarithm of loan amount measured in millions of dollars. (3) loan maturity (*MATURITY*), which is the natural logarithm of loan period measured in months.

Independent variable in equation (1), *M&A*, represents mergers and acquisitions. I construct three measures: (1) M&A dummy (*DMA*), which takes the value one if a borrower has involved in at least one M&A deal within 2 years before a particular loan origination, and zero otherwise. (2) Number of M&As (*MA*), which denotes the number of merger and acquisition deals a borrower involved in 2 years preceding the loan initiations. (3) a ratio of number of M&As divided by the maximum number of M&As in my sample 2 years before the loan initiations (*MAMAX*).

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I construct three explanatory variables in equation (2): (1) cross-border M&A dummy (*DCROSS*), which equals one if a borrower has involved in at least one cross-border M&A deal within 2 years before a specific loan origination, and zero otherwise. (2) Number of cross-border M&A (*CROSS*), which denotes the number of cross-border merger and acquisition deals a borrower involved in 2 years before loan initiations. (3) a ratio of number of cross-border M&As scaled by the maximum number of cross-border M&As in my sample 2 years before the loan originations (*CROSSMAX*).

Following prior studies (e.g., Kim et al., 2011; Fang et al., 2012), I control for variables including borrower characteristics and loan features. B$orrower_Characteristics_{t-1}$ includes size, asset opaqueness, leverage, profitability, market-to-book, and rating in year t-1. *SIZE* is defined as company's total assets in logs. For asset opaque measurement, I use ratio of fixed assets to total assets (*TFA*) as a proxy. Leverage (*LEV*) is measured as ratio of liabilities to total assets. Return on total assets (*ROA*), ratio of market to book (*PBK*), and S&P Domestic Issuer Credit Rating (*RATING*) are also included.

$Loan\_Features_t$ denotes the price and non-price terms of loan contracts in the year t. They contain loan spread (*SPREAD*), loan amount (*AMOUNT*), loan maturity (*MATURITY*), loan covenant dummy (*COV*), term loan dummy (*TERMLOAN*), revolver dummy (*REVOLVER*), secured loan dummy (*SECURED*), and general corporate purpose dummy (*GENERAL*). However, *SPREAD*, *AMOUNT*, and *MATURITY* will not be included when they are used as the dependent variable in equation (1) or (2). Moreover, I include the fixed effects of year and industry as control variables.

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To test H1, I estimate Eq. (1) and (2) using SPREAD as the dependent variable. SPREAD denotes the annual spread paid over the benchmark rate (e.g., LIBOR or other equivalents) for each dollar drawn down from the loan. Lenders generally evaluate the risk of a loan according to the business nature and performance of borrowers, and then set a mark-up over a benchmark rate as a reimbursement for credit risk. SPREAD reflects a risk level lender perceived on a loan facility provided to a particular borrower. As I expect M&As (as well as cross-border M&As) will increase a firm's value and lower the default risk, α_1 is predicted to be negative in the regression of loan spreads.

To test H2, I use Eq. (1) and (2) using AMOUNT and MATURITY as dependent variables. AMOUNT is the natural logarithm of loan amount measured in millions of dollars and MATURITY is the natural log of the loan period measured in months. Lenders use these two terms to balance their risk exposures. The coefficient α_1 is predicted to be positive in the regression of AMOUNT and MATURITY.

For H3, following prior literature (e.g., de Groot et al., 2003), I use language and colonial history as proxies for cultural background. To test H3, I divide my sample into two subsamples by different country-level variables including language and colonial history, and run equation (1) using number of M&As (*MA*) as an independent variable. Sample is split into two groups based on sample mean value of 3 characteristics: (1) official language similarity (*SIMLANOFF*), which takes the value of one if M&A targets domiciled in countries with official language similar to United States (i.e., English), and zero otherwise. (2) language similarity (*SIMLAN20*), equals one if M&A targets situated in countries with language spoken by at least 20% of the population similar to United States (i.e., English), and zero otherwise. (3) colonial history similarity (*SIMCOL*), which takes the value of one if M&A targets located in countries with colonizer (long period and substantial participation in governance) similar to

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United States (i.e., Great Britain), and zero otherwise. I posit that parties with similar country characteristics, firms encounter lower information costs to integrate, and thus easier to unleash the potential of synergy. Considering it, banks are willing to provide favorable loan contracts.

I estimate alpha 1 to be negative when I use SPREAD as the dependent variable. On the other hand, I predict alpha 1 to be positive when using AMOUNT and MATURITY as the dependent variables. Moreover, I expect alpha 1 to be more evident among the group with higher similarity of language and colonial history.

3.2. Sample

Panel A of Table 1 shows my sample selection procedure. The sample size is limited by the availability of the variables used in the regressions. My main databases include SDC, DealScan and Compustat. In this study, I only consider M&A activities in the US (i.e., the acquirer is domiciled in the US). Syndicated loans for each deal and facility is collected from Dealscan database from 2000 to 2016.

Mergers and acquisitions data are compiled from SDC during 1998 to 2015 to capture the M&A data within 2 years before the specific loan origination. Information regarding borrower characteristics is selected from Compustat. Language and colonial history information comes from CEPII. Besides, GDP data in the additional test are collected from World Bank. I capture the data from 1998 to 2015, which is consistent with the M&A data time period.

After matching all of the data and excluding missing information of loan, M&A, and company's accounting data, my final sample comprises 16,307 facilities as presented in the panel A of table 1. However, the final sample may vary in different tests due to

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data completion of various tested variables.

Panel B of table 1 displays the distribution of the sample by industry. Expect for “other” category, manufacturing has the highest proportion in the sample and business equipment has the highest proportion in the sample on the firm level.

Panel C of table 1 shows the year distribution. Year 2001 has the highest proportion in the sample. Among the sample, year 2016 has the highest proportion of having M&A and cross-border M&A.

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Table 1: Sample selection and Descriptive statistics

Panel A: Sample selection	
Initial sample of syndicated loans (sample period: 2000-2016) from Dealscan database merged with M&A sample from SDC	32,808
Remove observations missing loan contracting information	(10,421)
Remove observations without sufficient accounting information	(6,080)
Final sample	16,307
For H1-3, H2-3, H2-4 remove observations without MAMAX, CROSSMAX	(6,689)=9,618
For H3, remove observations without language and colonial history information	(6,692)= 9,615
For additional test 2, remove observations missing number of lender information.	(197)= 16,110
For additional test 3, remove observations missing GDP information	(6,695)= 9,612

Panel B: Industry distribution		
Industry	Number of Firms	Number of Observations
Consumer Non-Durables	188	1,097
Consumer Durables	89	547
Manufacturing	377	2,337
Oil, Gas, and Coal Extraction and Products	205	1,104
Chemicals and Allied Products	86	606
Business Equipment	517	2,026
Telephone and Television Transmission	109	699
Utilities	120	981
Wholesale, Retail, and Some Services	414	2,180
Healthcare, Medical Equipment, and Drugs	258	1,185
Finance	241	1,179
Other	449	2,366
Total	3,053	16,307

(Continued)

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Table 1: Sample selection and Descriptive statistics (Cont.)

Panel C: Year distribution			
Year of loan	Observations	DMA=1	DCROSS=1
2000	1,339	892(67%)	326(24%)
2001	1,394	861(62%)	338(24%)
2002	1,383	716(52%)	287(21%)
2003	1,336	689(52%)	232(17%)
2004	1,383	720(52%)	235(17%)
2005	1,337	744(56%)	248(19%)
2006	1,202	695(58%)	221(18%)
2007	1,125	679(60%)	231(21%)
2008	711	428(60%)	160(23%)
2009	426	254(60%)	77(18%)
2010	582	293(50%)	90(15%)
2011	691	381(55%)	146(21%)
2012	615	406(66%)	163(27%)
2013	680	454(67%)	163(24%)
2014	715	464(65%)	189(26%)
2015	775	507(65%)	194(25%)
2016	613	435(71%)	185(30%)
Total	16,307	9,618(59%)	3,485(21%)

Panel A describes my sample selection based on borrowers in the United States.

Panel B outlines the sample composition of industries. Industries are sorted into 12 classifications following Fama and French.

Panel C presents the year distribution of the sample.

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4. Empirical findings

4.1. Summary statistics and correlation analysis

Table 2 presents the descriptive statistics of the variables used in my main and additional analyses. To prevent the potential impact of outliers, I winsorize the top and bottom one percent of all variables, except dummy variables. As shown in Panel A of table 2, the mean value of DMA indicates that 59% of the observations have at least one M&A experience. The mean value of DCROSS reveals 21% of the observations have at least one cross-border M&A experience. As for the frequency of M&A and cross-border M&A, the mean (median) level of MA in my sample is 1.92 (1.00) with a standard deviation of about 2.75. Mean (median) level of CROSS in my sample is 0.42 (0.00) with a standard deviation of about 1.03.

In Panel B (Table 2), the mean and median of the natural logarithm of drawn all-in spread over the benchmark rate (SPREAD) are around 5.06 and 5.17, respectively, with a standard deviation of about 0.82. The mean (median) of natural logarithm of loan amount (AMOUNT) is about 5.11 (5.30), while the mean (median) of natural logarithm of loan maturity (MATURITY) is around 3.63 (3.93). In addition, 71% of my sample have covenants, and 52% are secured by collateral. The mean value of REVOLVER (TERMLOAN) indicates that 56% (30%) of loan facilities are revolver loans (term loans). The mean value of GENERAL shows 50% of loan facilities are for general corporate purposes. Furthermore, the mean of the NUMLENDER, NUMLEADARR, and NUMPARTLEND are 1.9 (8.4 lenders), 0.9 (1.7 lead arrangers), 1.6 (6.6 participant banks), respectively.

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With regard to firm characteristics in Panel C (Table 2), the mean (median) level of natural logarithm of total assets in my sample is 7.32 (7.30) with a standard deviation of about 1.84. My sample have an average fixed assets ratio of 0.56, an average debts ratio of 0.61, an average return on assets of 0.02, average market-to-book ratio of 2.78, and average rating of 0.51.

With respect to country characteristics in Panel D (Table 2), The mean value of two measures of language similarity (i.e., official language and language spoken by at least 20% of the population) are both around 0.78. The mean value of colonial history similarity is 0.73.

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Table 2: Descriptive statistics

	N	mean	Median	25th Pctl	75th Pctl	Std Dev
Panel A: M&A measures						
DMA	16,307	0.590	1.000	0.000	1.000	0.492
MA	16,307	1.921	1.000	0.000	3.000	2.747
MAMAX	9,618	0.073	0.051	0.029	0.088	0.072
DCROSS	16,307	0.214	0.000	0.000	0.000	0.410
CROSS	16,307	0.417	0.000	0.000	0.000	1.030
CROSSMAX	9,618	0.154	0.100	0.053	0.188	0.165
Panel B: Loan characteristics						
SPREAD	16,307	5.058	5.165	4.605	5.617	0.818
AMOUNT	16,307	5.114	5.298	4.174	6.215	1.559
MATURITY	16,307	3.630	3.932	3.296	4.094	0.682
COV	16,307	0.705	1.000	0.000	1.000	0.456
TERMLOAN	16,307	0.297	0.000	0.000	1.000	0.457
REVOLVER	16,307	0.557	1.000	0.000	1.000	0.497
SECURED	16,307	0.524	1.000	0.000	1.000	0.499
GENERAL	16,307	0.501	1.000	0.000	1.000	0.500
NUMLENDER	16,110	1.944	1.946	1.386	2.485	0.787
NUMLEADARR	16,110	0.917	0.693	0.693	1.099	0.373
NUMPARTLEND	16,110	1.593	1.792	0.693	2.398	0.996
Panel C: Firm characteristics						
SIZE	16,307	7.318	7.298	6.032	8.594	1.842
TFA	16,307	0.558	0.483	0.229	0.831	0.399
LEV	16,307	0.613	0.605	0.455	0.747	0.243
ROA	16,307	0.020	0.037	0.004	0.071	0.113
PBK	16,307	2.777	1.996	1.216	3.395	4.292
RATING	16,307	0.510	0.000	0.000	0.000	1.806
Panel D: Country characteristics						
SIMLANOFF	9,615	0.776	1.000	1.000	1.000	0.417
SIMLAN20	9,615	0.780	1.000	1.000	1.000	0.414
SIMCOL	9,615	0.734	1.000	0.000	1.000	0.442
HIGHGDP	9,612	0.675	1.000	0.000	1.000	0.469

Variables are defined in Appendix A.

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Table 3 shows descriptive statistics for firms with and without M&A (Panel A) or cross-border M&A (Panel B) experience and reports the results of univariate tests for mean differences between the two subsamples. The results in Panel A of Table 3 are quite consistent with the notion that borrowing firms with M&A experience are associated with better price and non-price loan terms. The mean value of SPREAD of the sample with M&A is significantly lower than that of without M&A by 47 bps (t-value =18.69). The mean values of the loan amount and maturity of the sample with M&A are significantly higher than that of without M&A by 165 million dollars (t-value = -10.35) and 0.8 month (t-value = -2.37), respectively.

The result of the difference in means between borrowers with and without cross-border M&A experience is computed in Panel B of table 3. The mean value of SPREAD of the sample with cross-border M&A is significantly lower than that of without cross-border M&A by 56 bps (t-value =20.71). The mean value of the loan amount of the sample cross-border M&A is significantly higher than that of without cross-border M&A by 396 million dollars (t-value = -13.77). However, the mean value of the loan maturity of the sample cross-border M&A is significantly lower than that of without cross-border M&A by 1.6 months (t-value =3.73).

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Table 3: Difference in means between borrowers with or without (cross-border) M&A experience

Panel A: Difference in means between borrowers with or without M&A experience				
	DMA=0 (obs= 6,689)	DMA=1 (obs= 9,618)	Difference in means	t- statistic
SPREAD	5.210	4.952	0.259***	(20.44)
	[236.686 bps]	[190.045 bps]	[46.640 bps]***	(18.69)
AMOUNT	4.844	5.303	-0.459***	(-18.48)
	[381.607 MMUSD]	[546.934 MMUSD]	[-165.327 MMUSD]***	(-10.35)
MATURITY	3.624	3.635	-0.012	(-1.09)
	[44.886 months]	[45.735 months]	[-0.849 month] **	(-2.37)
COV	0.720	0.694	0.025***	(3.50)
TERMLOAN	0.306	0.291	0.015**	(2.01)
REVOLVER	0.575	0.544	0.030***	(3.86)
SECURED	0.597	0.473	0.124***	(15.73)
GENERAL	0.493	0.507	-0.014*	(-1.80)
SIZE	7.010	7.533	-0.522***	(-17.78)
TFA	0.619	0.516	0.103***	(16.13)
LEV	0.642	0.593	0.049***	(12.25)
ROA	0.003	0.032	-0.029***	(-15.48)
PBK	2.564	2.925	-0.361***	(-5.26)
RATING	0.477	0.534	-0.056**	(-1.99)
Panel B: Difference in means between borrowers with or without cross-border M&A experience				
	DCROSS=0 (obs=12,822)	DCROSS=1 (obs=3,485)	Difference in means	t- statistic
SPREAD	5.143	4.745	0.398***	(23.41)
	[221.153 bps]	[165.115 bps]	[56.038 bps] ***	(20.71)
AMOUNT	4.952	5.712	-0.761***	(-27.05)
	[394.524 MMUSD]	[790.361 MMUSD]	[-395.837 MMUSD] ***	(-13.77)
MATURITY	3.645	3.578	0.067***	(4.91)
	[45.734 months]	[44.109 months]	[1.625 months] ***	(3.73)
COV	0.720	0.650	0.070***	(7.76)
TERMLOAN	0.304	0.272	0.033***	(3.81
REVOLVER	0.570	0.506	0.065***	(6.80)
SECURED	0.563	0.378	0.186***	(19.93)

(Continued)

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Table 3: Difference in means between borrowers with or without (cross-border) M&A experience (Cont.)

	DCROSS=0 (obs=12,822)	DCROSS=1 (obs=3,485)	Difference in means	t- statistic
GENERAL	0.496	0.519	-0.023**	(-2.44)
SIZE	7.084	8.182	-1.098***	(-33.02)
TFA	0.583	0.467	0.115***	(16.68)
LEV	0.616	0.603	0.013***	(3.05)
ROA	0.016	0.033	-0.017***	(-8.99)
PBK	2.633	3.307	-0.674***	(-8.05)
RATING	0.492	0.577	-0.085**	(-2.31)

Variables are defined in Appendix A. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

Table 4 reports a Pearson correlation matrix for the variables included in my main regression analyses. M&A dummy (DMA) is negatively correlated with SPREAD and positively correlated with AMOUNT at the 10% level, which is consistent with H1 and H2. However, the relation between DMA and MATURITY is insignificant. Cross-border M&A dummy (DCROSS) is negatively associated with SPREAD and positively associated with AMOUNT at the 10% level. However, the relation between DCROSS and MATURITY is significantly negative.

Our variable of interest rate, SPREAD, is negatively correlated with AMOUNT, REVOLVER, SIZE, ROA and PBK at the 10% level. These results suggest that banks charge lower interest rates on loans with larger amount, revolver loans, and borrowers with larger size, profitability, and higher market-to-book ratio. However, the correlation between SPREAD and GENERAL is insignificant.

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Table 4: Pearson correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	DMA	1.000															
2	DCROSS	**0.435**	1.000														
3	SPREAD	**-0.156**	**-0.199**	1.000													
4	AMOUNT	**0.145**	**0.200**	**-0.394**	1.000												
5	MATURITY	0.009	**-0.040**	**0.205**	**0.061**	1.000											
6	COV	**-0.027**	**-0.063**	**0.147**	**-0.125**	**0.092**	1.000										
7	TERMLOAN	**-0.016**	**-0.029**	**0.355**	**-0.096**	**0.277**	**0.043**	1.000									
8	REVOLVER	**-0.030**	**-0.053**	**-0.074**	**-0.041**	**0.211**	**0.092**	**-0.718**	1.000								
9	SECURED	**-0.122**	**-0.152**	**0.562**	**-0.320**	**0.238**	**0.331**	**0.260**	-0.002	1.000							
10	GENERAL	**0.014**	**0.019**	0.004	**0.031**	**0.096**	**-0.155**	-0.000	**0.085**	**-0.084**	1.000						
11	SIZE	**0.139**	**0.244**	**-0.444**	**0.774**	**-0.082**	**-0.211**	**-0.086**	**-0.125**	**-0.417**	**0.101**	1.000					
12	TFA	**-0.127**	**-0.119**	**0.019**	**0.034**	**-0.025**	**-0.016**	**-0.019**	**0.021**	**-0.022**	**-0.014**	**0.017**	1.000				
13	LEV	**-0.099**	**-0.022**	**0.131**	**0.163**	**-0.034**	**-0.055**	**0.106**	**-0.127**	**0.079**	**0.080**	**0.257**	**0.168**	1.000			
14	ROA	**0.125**	**0.062**	**-0.341**	**0.240**	**0.081**	**-0.054**	**-0.083**	**0.025**	**-0.239**	**-0.027**	**0.170**	**-0.069**	**-0.271**	1.000		
15	PBK	**0.041**	**0.064**	**-0.139**	**0.079**	**-0.015**	-0.008	-0.005	**-0.045**	**-0.075**	-0.012	**0.050**	**-0.070**	**-0.065**	**0.182**	1.000	
16	RATING	**0.015**	**0.019**	**0.068**	**0.124**	**0.119**	**-0.024**	**0.074**	**-0.030**	**0.035**	**0.042**	**0.107**	**0.021**	**0.081**	**-0.014**	**0.026**	1.000

All variables are defined in Appendix A. Bold text indicates significant at 10% level.

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4.2. Main analysis

4.2.1. Test of hypothesis H1

Although univariate tests contribute preliminary evidence that borrowing companies benefit from prior M&A experience with regard to lower cost of debt financing, these results do not consider the potential influence of borrower characteristics and loan feature. I use regression analysis to explore the effect of M&A experience on loan spreads after controlling for various loan-specific and borrower-specific variables. I reveal the results in column 1 of Table 5 to Table 10. I estimate Eq. (1) and Eq. (2) using SPREAD as the dependent variable, and also control for both year and industry fixed effects. Throughout the regressions in this paper, standard errors are clustered by the facility level. Column 1 of Table 5 to 7 exhibit the results of estimating equation (1), and column 1 of Table 8 to 10 show the results of estimating equation (2).

The explanatory variable in column 1 (Table 5) is the M&A dummy. I find that borrowing firms with M&A experience within 2 years before the loan initiations are associated with significantly lower loan prices at the 1% level (-0.063, t-value = -7.15). The coefficient of M&A dummy is -0.063, which means, on average, M&A experience decreases loan spreads by 6.3%, all else being equal.

As for the control variables (column 1 of Table 5), we find most of the results are consistent with the prior literature (Strahan, 1999; Fang et al., 2012). For instance, the coefficients of SIZE, TFA, ROA, PBK are significantly negative, while the coefficient of LEV is significantly positive. They indicate that borrowers with larger size, more tangible asset, greater profitability, or higher market-to-book ratio tend to pay less for the loan. On the contrary, borrowing firms with higher leverage ratio suffer from higher interest rate because higher leverage ratio implies higher default risk. Regarding the

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loan characteristic variables, we find AMOUNT and GENERAL significantly and negatively affect the loan prices at the 1% level, which indicates that larger loans and loans with general purpose carry lower interest rate. TERMLOAN, REVOLVER, and SECURED are significantly and positively correlated with loan spreads at the 1% level. However, the relations between SPREAD and MATURITY and COV are insignificant.

I additionally explore the relation between the frequency of firm's M&A engagement and its cost of bank loans (column 1 of Table 6 and 7). I use two measures - the number of M&A deals two years prior to a particular loan origination (MA) and number of M&As scaled by the maximum number of M&As in the sample two years before loan initiations (MAMAX). I report a significantly negative relation between the MA and MAMAX, and loan spreads at the 1% and 5% level (-0.012, t-value= -6.82; -0.205, t-value= -2.24), respectively.

I also examine whether cross-border M&A experience has the same effect on the loan pricing. Column 1 of Tables 8 to 10 present the same set of tests using cross-border M&A. Cross-border M&A dummy (DCROSS), number of cross-border M&A (CROSS), and number of cross-border M&As scaled by the maximum number of cross-border M&As in the sample two years before loan initiations (CROSSMAX) are significantly and negatively associated with loan spreads (-0.086, t-value= -7.56; -0.036, t-value=-7.03; -0.112, t-value= -2.85), respectively. Taken together, the results in column 1 of Tables 5 to 10 indicate that, ceteris paribus, both M&A and cross-border M&As enjoy the lower price of bank loans.

4.2.2. Test of hypothesis H2

Since banks determine the price and non-price terms of loans jointly, I investigate whether firms with previous M&A experience also benefit from larger amounts and

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longer maturities when pledging for bank lending. To test my H2, I estimate Eq. (1) and Eq. (2) using AMOUNT and MATURITY as the dependent variables. Results are revealed in column 2 and 3 of Table 5 to 10.

Column 2 and 3 of Table 5 show that the coefficient of M&A dummy is significantly positive in the regression of AMOUNT and MATURITY (0.053, t-value=3.38; 0.018, t-value=2.27). The coefficients of AMOUNT and MATURITY are 0.053 and 0.018, respectively, which indicate that M&A experience increases loan amounts by 5.3% and loan maturities by 1.8%, all else being equal. These results are consistent with H2, indicating that banks are more willing to extend the loan sizes and maturities to borrowing firms who have M&A experience within 2 years.

Turning to the borrower-specific variables in column 2 and 3 of Table 5. SIZE, TFA, ROA, PBK, and RATING are positively correlated with AMOUNT. ROA and RATING are positively correlated with MATURITY, while LEV are negatively associated with MATURITY. The results suggest that firms with greater profitability and rating are offered larger loan amounts and longer maturities.

I further investigate whether frequency of firm's M&A engagement makes any difference in terms of the loan amounts and maturities (columns 2 and 3 of Tables 6 and 7). The results show that the coefficients for the number of M&A deals (MA) and number of M&As scaled by the maximum number of M&As in the sample two years before loan initiations (MAMAX) are both positively correlated with AMOUNT at the 1% level (0.02, t-value= 7.04; 0.823, t-value= 5.55). However, they are insignificantly correlated with MATURITY. They suggest that frequency of M&A engagement has positive impact on the loan amounts, whereas it does not incur longer loan maturities.

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I specifically examine the relation between cross-border M&As and the loan amounts and maturities by using DCROSS, CROSS, and CROSSMAX as independent variables. Columns 2 and 3 of Tables 8 to 10 present the results. The coefficients of DCROSS and CROSS are insignificant for AMOUNT and MATURITY, whereas the CROSSMAX is positively associated with AMOUNT (0.313, t-value=4.65) and MATURITY (0.056, t-value=1.67).

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Table 5: The effect of M&A dummy variable on price and non-price loan terms

	SPREAD	AMOUNT	MATURITY
Intercept	5.575***	0.255*	2.417***
	(79.56)	(1.90)	(32.92)
DMA	-0.063***	0.053***	0.018**
	(-7.15)	(3.38)	(2.27)
SPREAD	-	-0.146***	-0.000
	-	(-9.72)	(-0.03)
AMOUNT	-0.048***	-	0.080***
	(-9.96)	-	(16.46)
MATURITY	-0.000	0.293***	-
	(-0.03)	(16.82)	-
COV	-0.008	0.127***	-0.028***
	(-0.81)	(7.03)	(-2.98)
TERMLOAN	0.440***	-0.369***	1.205***
	(19.98)	(-9.81)	(67.31)
REVOLVER	0.145***	-0.206***	1.073***
	(7.06)	(-6.17)	(72.29)
SECURED	0.494***	0.025	0.105***
	(46.29)	(1.30)	(10.13)
GENERAL	-0.033***	-0.187***	0.023***
	(-3.75)	(-12.58)	(2.80)
$SIZE_{t-1}$	-0.117***	0.610***	-0.022***
	(-25.82)	(100.43)	(-5.09)
TFA_{t-1}	-0.107***	0.047*	-0.032**
	(-7.65)	(1.85)	(-2.51)
LEV_{t-1}	0.432***	0.180***	-0.076***
	(19.90)	(4.75)	(-3.57)
ROA_{t-1}	-0.925***	0.921***	0.496***
	(-19.70)	(12.08)	(10.91)
PBK_{t-1}	-0.010***	0.004**	-0.001
	(-9.10)	(2.18)	(-1.42)
$RATING_{t-1}$	0.013***	0.020***	0.015***
	(6.31)	(4.68)	(8.48)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.591	0.657	0.512
Observations	16,307	16,307	16,307

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 6: The effect of number of M&As on price and non-price loan terms

	SPREAD	AMOUNT	MATURITY
Intercept	5.551***	0.262*	2.427***
	(79.07)	(1.96)	(33.11)
MA	-0.012***	0.020***	0.001
	(-6.82)	(7.04)	(0.87)
SPREAD	-	-0.143***	-0.001
	-	(-9.50)	(-0.09)
AMOUNT	-0.047***	-	0.080***
	(-9.73)	-	(16.42)
MATURITY	-0.001	0.293***	-
	(-0.09)	(16.82)	-
COV	-0.010	0.128***	-0.027***
	(-0.98)	(7.12)	(-2.93)
TERMLOAN	0.438***	-0.366***	1.206***
	(19.91)	(-9.74)	(67.33)
REVOLVER	0.144***	-0.202***	1.073***
	(6.99)	(-6.05)	(72.24)
SECURED	0.496***	0.025	0.104***
	(46.43)	(1.29)	(10.08)
GENERAL	-0.033***	-0.186***	0.023***
	(-3.77)	(-12.57)	(2.80)
$SIZE_{t-1}$	-0.116***	0.604***	-0.022***
	(-25.38)	(97.65)	(-5.08)
TFA_{t-1}	-0.110***	0.056**	-0.033**
	(-7.82)	(2.21)	(-2.56)
LEV_{t-1}	0.432***	0.187***	-0.078***
	(19.93)	(4.93)	(-3.66)
ROA_{t-1}	-0.933***	0.923***	0.499***
	(-19.91)	(12.13)	(10.98)
PBK_{t-1}	-0.010***	0.004**	-0.001
	(-9.01)	(2.10)	(-1.44)
$RATING_{t-1}$	0.013***	0.019***	0.015***
	(6.33)	(4.60)	(8.50)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.591	0.658	0.511
Observations	16,307	16,307	16,307

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 7: The effect of number of M&As scaled by the maximum number of M&As over two years on price and non-price loan terms

	SPREAD	AMOUNT	MATURITY
Intercept	5.583***	0.476**	2.295***
	(57.15)	(2.39)	(24.28)
MAMAX	-0.205**	0.823***	0.089
	(-2.24)	(5.55)	(1.16)
SPREAD	-	-0.132***	0.014
	-	(-6.60)	(1.31)
AMOUNT	-0.045***	-	0.070***
	(-6.77)	-	(11.06)
MATURITY	0.018	0.275***	-
	(1.32)	(11.40)	-
COV	0.008	0.163***	-0.025**
	(0.58)	(7.05)	(-2.25)
TERMLOAN	0.403***	-0.382***	1.250***
	(13.50)	(-7.62)	(56.35)
REVOLVER	0.108***	-0.233***	1.132***
	(3.92)	(-5.22)	(62.96)
SECURED	0.459***	0.052**	0.085***
	(33.36)	(2.07)	(6.66)
GENERAL	-0.041***	-0.201***	0.016
	(-3.50)	(-10.50)	(1.57)
$SIZE_{t-1}$	-0.144***	0.594***	-0.022***
	(-22.73)	(70.05)	(-3.78)
TFA_{t-1}	-0.133***	0.075**	-0.022
	(-6.71)	(2.14)	(-1.29)
LEV_{t-1}	0.485***	0.168***	-0.045
	(15.10)	(3.07)	(-1.57)
ROA_{t-1}	-1.057***	1.220***	0.401***
	(-13.86)	(10.59)	(6.25)
PBK_{t-1}	-0.012***	0.006**	-0.000
	(-7.05)	(2.55)	(-0.13)
$RATING_{t-1}$	0.012***	0.019***	0.016***
	(4.31)	(3.74)	(7.03)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.600	0.637	0.560
Observations	9,618	9,618	9,618

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 8: The effect of cross-border M&A dummy variable on price and non-price loan terms

	SPREAD	AMOUNT	MATURITY
Intercept	5.540***	0.285**	2.427***
	(79.22)	(2.13)	(33.14)
DCROSS	-0.086***	0.023	0.013
	(-7.56)	(1.18)	(1.35)
SPREAD	-	-0.148***	-0.001
	-	(-9.86)	(-0.07)
AMOUNT	-0.048***	-	0.080***
	(-10.09)	-	(16.51)
MATURITY	-0.001	0.294***	-
	(-0.07)	(16.88)	-
COV	-0.009	0.128***	-0.027***
	(-0.89)	(7.11)	(-2.95)
TERMLOAN	0.439***	-0.370***	1.206***
	(19.93)	(-9.81)	(67.34)
REVOLVER	0.145***	-0.207***	1.073***
	(7.04)	(-6.21)	(72.30)
SECURED	0.495***	0.024	0.105***
	(46.34)	(1.22)	(10.09)
GENERAL	-0.033***	-0.187***	0.023***
	(-3.75)	(-12.58)	(2.80)
$SIZE_{t-1}$	-0.114***	0.610***	-0.023***
	(-24.97)	(98.55)	(-5.12)
TFA_{t-1}	-0.107***	0.043*	-0.033**
	(-7.65)	(1.72)	(-2.57)
LEV_{t-1}	0.437***	0.173***	-0.078***
	(20.25)	(4.57)	(-3.69)
ROA_{t-1}	-0.944***	0.934***	0.501***
	(-20.08)	(12.25)	(11.01)
PBK_{t-1}	-0.010***	0.004**	-0.001
	(-8.90)	(2.14)	(-1.46)
$RATING_{t-1}$	0.013***	0.020***	0.015***
	(6.31)	(4.70)	(8.49)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.591	0.657	0.511
Observations	16,307	16,307	16,307

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 9: The effect of number of cross-border M&A on price and non-price loan terms

	SPREAD	AMOUNT	MATURITY
Intercept	5.532***	0.287**	2.428***
	(78.90)	(2.14)	(33.16)
CROSS	-0.036***	0.006	0.000
	(-7.03)	(0.88)	(0.11)
SPREAD	-	-0.148***	-0.001
	-	(-9.87)	(-0.13)
AMOUNT	-0.049***	-	0.080***
	(-10.09)	-	(16.52)
MATURITY	-0.001	0.294***	-
	(-0.13)	(16.89)	-
COV	-0.011	0.128***	-0.027***
	(-1.02)	(7.12)	(-2.93)
TERMLOAN	0.438***	-0.369***	1.206***
	(19.86)	(-9.81)	(67.32)
REVOLVER	0.144***	-0.207***	1.073***
	(6.99)	(-6.21)	(72.20)
SECURED	0.496***	0.024	0.104***
	(46.42)	(1.21)	(10.07)
GENERAL	-0.034***	-0.186***	0.023***
	(-3.85)	(-12.56)	(2.81)
$SIZE_{t-1}$	-0.113***	0.610***	-0.022***
	(-24.88)	(98.26)	(-4.98)
TFA_{t-1}	-0.106***	0.043*	-0.034***
	(-7.60)	(1.69)	(-2.64)
LEV_{t-1}	0.437***	0.172***	-0.079***
	(20.26)	(4.56)	(-3.71)
ROA_{t-1}	-0.942***	0.933***	0.500***
	(-20.03)	(12.24)	(10.98)
PBK_{t-1}	-0.010***	0.004**	-0.001
	(-8.94)	(2.15)	(-1.44)
$RATING_{t-1}$	0.013***	0.020***	0.015***
	(6.21)	(4.71)	(8.50)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.591	0.657	0.511
Observations	16,307	16,307	16,307

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 10: The effect of number of cross-border M&As scaled by the maximum number of cross-border M&As over two years on price and non-price loan terms

	SPREAD	AMOUNT	MATURITY
Intercept	5.579***	0.480**	2.296***
	(57.10)	(2.41)	(24.31)
CROSSMAX	-0.112***	0.313***	0.056*
	(-2.85)	(4.65)	(1.67)
SPREAD	-	-0.132***	0.014
	-	(-6.59)	(1.33)
AMOUNT	-0.045***	-	0.070***
	(-6.77)	-	(11.06)
MATURITY	0.018	0.275***	-
	(1.33)	(11.40)	-
COV	0.008	0.163***	-0.025**
	(0.56)	(7.04)	(-2.23)
TERMLOAN	0.402***	-0.382***	1.250***
	(13.48)	(-7.63)	(56.37)
REVOLVER	0.107***	-0.234***	1.133***
	(3.90)	(-5.23)	(63.00)
SECURED	0.459***	0.053**	0.085***
	(33.35)	(2.09)	(6.66)
GENERAL	-0.041***	-0.201***	0.016
	(-3.50)	(-10.51)	(1.57)
$SIZE_{t-1}$	-0.144***	0.596***	-0.022***
	(-22.68)	(70.71)	(-3.82)
TFA_{t-1}	-0.134***	0.072**	-0.022
	(-6.74)	(2.06)	(-1.26)
LEV_{t-1}	0.484***	0.164***	-0.044
	(15.07)	(3.01)	(-1.54)
ROA_{t-1}	-1.056***	1.221***	0.401***
	(-13.85)	(10.60)	(6.24)
PBK_{t-1}	-0.012***	0.006***	-0.000
	(-7.06)	(2.59)	(-0.12)
$RATING_{t-1}$	0.012***	0.019***	0.016***
	(4.35)	(3.71)	(7.00)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.600	0.637	0.560
Observations	9,618	9,618	9,618

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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4.2.3. Test of hypothesis H3

Tables 11 and 12 present results relating bank loan terms to firms' M&A activities, using subsamples of acquirers and acquirees situated in countries with more similar language or less similar language. Sample is divided based on sample mean value of language similarity. I use official language and language spoken by at least 20% of the population as two proxies for language. I enter the number of M&A along with variables controlling for firm features and loan characteristics.

Table 11 shows that effect of M&A activities on loan terms in more similar and less similar official language groups, respectively. I partition my sample into two subsamples based on whether acquirer and target firms domiciled in countries with more similar official language (SIMLANOFF=1) or less similar official language(SIMLANOFF=0). When using SPREAD as the dependent variable, the coefficient of MA is significantly negative in the group with a higher level of similar language (-0.004, t-value= -1.65), while it is insignificant among the group with a lower level of similar language. When using MATURITY as the dependent variable, the coefficient of MA is significantly positive in the group with a higher level of similar language (0.004, t-value=1.68), while it is insignificant among the group with a lower level of similar language. Untabulated results show that the difference of the MA coefficients is significant between "SIMLANOFF=1" and "SIMLANOFF=0" groups when using SPREAD as the dependent variable ($p<0.1$). It indicates that the effect of M&A on loan price is more pronounced when the target firms situated in countries with more similar official language. Furthermore, I find a consistent result that number of M&As is positively associated with loan amounts.

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Table 12 presents the results effect of M&A activities on loan terms, using subsamples where acquirers and acquirees located in countries with more similar (SIMLAN20=1) and less similar (SIMLAN20=0) language spoken by at least 20% of the population. When using SPREAD as the dependent variable, the coefficient of MA is significantly negative in the group with a higher level of similar language (-0.004, t-value= -1.67), while it is insignificant among the group with a lower level of similar language. When using MATURITY as the dependent variable, the coefficient of MA is significantly positive in the group with a higher level of similar language (0.004, t-value=1.86), while it is insignificant among the group with a lower level of similar language. I find a consistent result that number of M&As is positively associated with loan amounts. However, the differences of the MA coefficients are insignificant between “SIMLAN20=1” and “SIMLAN20=0” in an untabulated analysis.

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Table 11: Acquirer and target firms domiciled in countries with more and less similar official language

	SPREAD		AMOUNT		MATURITY	
	SIMLANO	SIMLANO	SIMLANO	SIMLANO	SIMLANO	SIMLANO
	FF=1	FF=0	FF=1	FF=0	FF=1	FF=0
Intercept	5.582***	5.666***	0.284	1.070***	2.256***	2.418***
	(42.68)	(36.57)	(1.17)	(2.70)	(20.26)	(12.53)
MA	-0.004*	0.004	0.029***	0.016**	0.004*	0.000
	(-1.65)	(1.04)	(6.44)	(2.38)	(1.68)	(0.14)
SPREAD	-	-	-0.124***	-0.154***	0.015	0.007
	-	-	(-5.56)	(-3.42)	(1.19)	(0.31)
AMOUNT	-0.039***	-0.061***	-	-	0.075***	0.049***
	(-5.69)	(-3.59)	-	-	(10.75)	(3.28)
MATURITY	0.018	0.010	0.294***	0.194***	-	-
	(1.20)	(0.31)	(11.06)	(3.38)	-	-
COV	-0.050***	0.154***	0.120***	0.281***	-0.028**	-0.011
	(-3.29)	(5.31)	(4.41)	(6.27)	(-2.02)	(-0.53)
TERMLOAN	0.365***	0.457***	-0.356***	-0.392***	1.213***	1.342***
	(10.87)	(7.06)	(-6.38)	(-3.45)	(46.00)	(32.20)
REVOLVER	0.086***	0.117*	-0.206***	-0.250**	1.086***	1.258***
	(2.78)	(1.95)	(-4.08)	(-2.51)	(49.59)	(40.63)
SECURED	0.434***	0.523***	0.091***	-0.074	0.089***	0.073***
	(28.87)	(15.79)	(3.19)	(-1.32)	(6.08)	(2.61)
GENERAL	-0.060***	0.011	-0.192***	-0.216***	0.010	0.027
	(-4.66)	(0.45)	(-8.72)	(-5.53)	(0.85)	(1.32)
$SIZE_{t-1}$	-0.142***	-0.154***	0.603***	0.572***	-0.020***	-0.022*
	(-20.78)	(-9.72)	(62.71)	(28.12)	(-3.05)	(-1.65)
TFA_{t-1}	-0.127***	-0.092*	0.104***	-0.033	-0.011	-0.074*
	(-5.86)	(-1.96)	(2.65)	(-0.39)	(-0.58)	(-1.88)
LEV_{t-1}	0.471***	0.491***	0.188***	0.043	-0.066**	0.032
	(13.72)	(5.54)	(3.10)	(0.32)	(-2.07)	(0.46)
ROA_{t-1}	-1.005***	-1.457***	1.242***	0.897***	0.364***	0.628***
	(-12.63)	(-6.18)	(9.71)	(3.34)	(5.21)	(3.70)
PBK_{t-1}	-0.009***	-0.017***	0.011***	-0.006	-0.001	0.000
	(-4.89)	(-5.48)	(4.01)	(-1.23)	(-0.46)	(0.09)
$RATING_{t-1}$	0.012***	-0.003	0.021***	0.012	0.016***	0.013**
	(3.89)	(-0.43)	(3.45)	(1.17)	(7.01)	(2.40)

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Table 11: Acquirer and target firms domiciled in countries with more and less similar official language (Cont.)

	SPREAD		AMOUNT		MATURITY	
	SIMLANOFF=1	SIMLANOFF=0	SIMLANOFF=1	SIMLANOFF=0	SIMLANOFF=1	SIMLANOFF=0
Year fixed effect	Included	Included	Included	Included	Included	Included
Industry fixed effect	Included	Included	Included	Included	Included	Included
Adjusted R^2	0.567	0.684	0.626	0.621	0.526	0.665
Observations	7,461	2,154	7,461	2,154	7,461	2,154

The sample is divided into two groups based on the sample mean value of official language similarity. Subsample "SIMLANOFF=1" indicates that the firm's M&A target companies are domiciled in countries with official language similar to United States, "SIMLANOFF=0" otherwise. Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 12: Acquirer and target firms domiciled in countries with more and less similar language spoken by at least 20% of the population

	SPREAD		AMOUNT		MATURITY	
	SIMLAN20 =1	SIMLAN2 0=0	SIMLAN20 =1	SIMLAN20 =0	SIMLAN20 =1	SIMLAN20 =0
Intercept	5.579***	5.660***	0.264	1.143***	2.255***	2.403***
	(42.64)	(36.27)	(1.09)	(2.88)	(20.29)	(12.36)
MA	-0.004*	0.003	0.028***	0.016**	0.004*	0.000
	(-1.67)	(0.81)	(6.22)	(2.43)	(1.86)	(0.03)
SPREAD	-	-	-0.118***	-0.172***	0.014	0.007
	-	-	(-5.28)	(-3.76)	(1.16)	(0.33)
AMOUNT	-0.037***	-0.068***	-	-	0.074***	0.053***
	(-5.40)	(-3.96)	-	-	(10.60)	(3.47)
MATURITY	0.018	0.011	0.289***	0.207***	-	-
	(1.16)	(0.33)	(10.91)	(3.58)	-	-
COV	-0.048***	0.158***	0.123***	0.283***	-0.028**	-0.008
	(-3.13)	(5.44)	(4.51)	(6.28)	(-2.09)	(-0.39)
TERMLOAN	0.373***	0.434***	-0.352***	-0.409***	1.216***	1.335***
	(11.13)	(6.71)	(-6.32)	(-3.60)	(46.31)	(31.62)
REVOLVER	0.092***	0.103*	-0.203***	-0.261***	1.089***	1.252***
	(2.96)	(1.72)	(-4.02)	(-2.62)	(50.00)	(39.76)
SECURED	0.434***	0.524***	0.089***	-0.066	0.088***	0.075***
	(28.89)	(15.73)	(3.14)	(-1.17)	(6.06)	(2.69)
GENERAL	-0.061***	0.018	-0.191***	-0.216***	0.010	0.029
	(-4.69)	(0.71)	(-8.71)	(-5.51)	(0.84)	(1.40)
$SIZE_{t-1}$	-0.144***	-0.149***	0.603***	0.571***	-0.019***	-0.024*
	(-21.07)	(-9.33)	(62.89)	(27.91)	(-2.90)	(-1.78)
TFA_{t-1}	-0.132***	-0.083*	0.093**	0.013	-0.009	-0.078*
	(-6.09)	(-1.73)	(2.36)	(0.15)	(-0.49)	(-1.92)
LEV_{t-1}	0.471***	0.481***	0.194***	0.024	-0.068**	0.040
	(13.71)	(5.40)	(3.20)	(0.18)	(-2.15)	(0.57)
ROA_{t-1}	-1.013***	-1.456***	1.244***	0.864***	0.373***	0.596***
	(-12.71)	(-6.15)	(9.71)	(3.22)	(5.34)	(3.48)
PBK_{t-1}	-0.010***	-0.016***	0.011***	-0.005	-0.001	0.000
	(-5.24)	(-5.21)	(3.91)	(-1.13)	(-0.43)	(0.03)
$RATING_{t-1}$	0.013***	-0.004	0.022***	0.010	0.016***	0.013**
	(4.01)	(-0.61)	(3.61)	(0.94)	(7.02)	(2.34)

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Table 12: Acquirer and target firms domiciled in countries with more and less similar language spoken by at least 20% of the population

	SPREAD		AMOUNT		MATURITY	
	SIMLAN20=1	SIMLAN20=0	SIMLAN20=1	SIMLAN20=0	SIMLAN20=1	SIMLAN20=0
Year fixed effect	Included	Included	Included	Included	Included	Included
Industry fixed effect	Included	Included	Included	Included	Included	Included
Adjusted R^2	0.569	0.683	0.625	0.627	0.527	0.664
Observations	7,500	2,115	7,500	2,115	7,500	2,115

Sample is divided into two groups based on the sample mean value of language similarity. Subsample "SIMLAN20=1" indicates that the firm's M&A target companies are domiciled in countries with language spoken by at least 20% of the population similar to United States, "SIMLAN20=0" otherwise. Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 13 provides results of the extent to which M&As with colonial history similarity affect bank loan terms. I use similarity of colonizers as a proxy for colonial history. I retrieve data from CEPII and separate my sample into two subgroups based on the sample mean value of colonial history similarity. I define a dummy variable, SIMCOL, which equals one if sample borrowers (i.e., acquirers) have more similar colonial history with acquired firms than the sample mean, and zero otherwise. I enter the number of M&A together with variables controlling for firm characteristics and loan features.

Table 13 shows that the coefficient of M&A numbers is only significant in "SIMCOL=1" group when examining the effect of M&A on loan spreads and loan maturities. When using SPREAD as the dependent variable, the coefficient of MA is significantly negative in the group with a higher level of similar colonial history (-0.005, t-value= -1.87), while it is insignificant among the group with a lower level of similar colonial history. When using MATURITY as the dependent variable, the coefficient of MA is significantly positive in the group with a higher level of similar colonial history (0.004, t-value= 1.84), while it is insignificant among the group with a lower level of similar colonial history. Untabulated results indicate that the difference of the MA coefficients is significant between "SIMCOL=1" and "SIMCOL=0" when SPREAD is a dependent variable ($p<0.05$). It indicates that the effect of M&A on loan price is more pronounced when the acquirers and acquirees domiciled in countries with more similar colonial history. I also find that the number of M&As is positively associated with loan amounts when the acquirers and acquirees share similar colonial history.

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Table 13: Acquirer and target firms domiciled in countries with more and less similar colonial history

	SPREAD		AMOUNT		MATURITY	
	SIMCOL=1	SIMCOL=0	SIMCOL=1	SIMCOL=0	SIMCOL=1	SIMCOL=0
Intercept	5.548***	5.723***	0.354	0.784**	2.241***	2.387***
	(40.92)	(41.24)	(1.41)	(2.13)	(19.08)	(14.05)
MA	-0.005*	0.005	0.027***	0.018***	0.004*	-0.000
	(-1.87)	(1.27)	(5.95)	(2.87)	(1.84)	(-0.12)
SPREAD	-	-	-0.141***	-0.124***	0.021	-0.004
	-	-	(-6.08)	(-3.01)	(1.62)	(-0.20)
AMOUNT	-0.044***	-0.048***	-	-	0.077***	0.048***
	(-6.25)	(-3.12)	-	-	(10.74)	(3.62)
MATURITY	0.026	-0.006	0.302***	0.190***	-	-
	(1.63)	(-0.20)	(11.02)	(3.73)	-	-
COV	-0.065***	0.145***	0.107***	0.281***	-0.021	-0.027
	(-4.14)	(5.61)	(3.81)	(6.80)	(-1.50)	(-1.37)
TERMLOAN	0.357***	0.461***	-0.351***	-0.399***	1.210***	1.316***
	(10.27)	(8.22)	(-6.08)	(-3.95)	(44.77)	(33.85)
REVOLVER	0.082**	0.129**	-0.197***	-0.239***	1.075***	1.254***
	(2.55)	(2.48)	(-3.80)	(-2.66)	(47.45)	(43.36)
SECURED	0.434***	0.515***	0.100***	-0.075	0.076***	0.113***
	(28.02)	(17.31)	(3.45)	(-1.47)	(5.04)	(4.57)
GENERAL	-0.071***	0.019	-0.197***	-0.211***	0.013	0.015
	(-5.39)	(0.81)	(-8.68)	(-5.83)	(1.09)	(0.76)
$SIZE_{t-1}$	-0.133***	-0.168***	0.606***	0.575***	-0.022***	-0.016
	(-18.95)	(-11.77)	(61.68)	(30.53)	(-3.26)	(-1.36)
TFA_{t-1}	-0.130***	-0.094**	0.096**	0.001	-0.005	-0.086**
	(-5.92)	(-2.18)	(2.41)	(0.02)	(-0.25)	(-2.32)
LEV_{t-1}	0.453***	0.535***	0.164***	0.155	-0.093***	0.110*
	(12.98)	(6.77)	(2.64)	(1.30)	(-2.89)	(1.74)
ROA_{t-1}	-0.998***	-1.430***	1.167***	1.197***	0.341***	0.717***
	(-12.35)	(-6.98)	(8.90)	(4.88)	(4.78)	(4.75)
PBK_{t-1}	-0.009***	-0.017***	0.012***	-0.004	-0.001	-0.000
	(-4.53)	(-5.83)	(4.07)	(-0.89)	(-0.47)	(-0.17)
$RATING_{t-1}$	0.011***	0.002	0.019***	0.015	0.017***	0.012**
	(3.46)	(0.31)	(3.05)	(1.56)	(7.01)	(2.40)
Year fixed effect	Included	Included	Included	Included	Included	Included

(Continued)

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Table 13: Acquirer and target firms domiciled in countries with more and less similar colonial history (Cont.)

	SPREAD		AMOUNT		MATURITY	
	SIMCOL=1	SIMCOL=0	SIMCOL=1	SIMCOL=0	SIMCOL=1	SIMCOL=0
Industry fixed effect	Included	Included	Included	Included	Included	Included
Adjusted R^2	0.561	0.684	0.625	0.632	0.526	0.651
Observations	7,058	2,557	7,058	2,557	7,058	2,557

Sample is divided into two groups based on the sample mean value of colonial history similarity. Subsample "SIMCOL =1" indicates that the firm's M&A target companies are domiciled in countries with colonizer similar to United States, "SIMCOL =0" otherwise. Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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4.3. Additional analyses

4.3.1 Testing H1 and H2 using the propensity score matching method

Firms that are active in M&As may need more external financing by taking loans. Therefore, firms may self-select into M&A and have certain features related to low cost of debt.[1] I employ the propensity score matching approach to address the endogenous problem. I match the treatment group (i.e., borrowers with M&A experience) and non-treatment groups (i.e., borrowers without M&A experience) based on a set of observable features. Following prior literature (e.g., Fang et al., 2012), I evaluate the propensity score, the conditional treatment likelihood of having M&A experiences, via a probit model based on observed attributes. I estimate the propensity score using a set of covariates, including assets tangibility, leverage, profitability, market-to-book ratio, rating and year fixed effects in the probit model. I employ the nearest-neighbor matching to construct the non-treatment group. I perform one-to-one matching without replacement.

Table 14 shows the descriptive statistics for both the full and propensity-score matched samples. Panel A of Table 14 presents the sample with and without M&A experience. There are 16,307 observations in the full sample, of which 6,689 (41%) are firms without M&A experience and 9,618 (59%) are firms with M&A experience. I then have a propensity-score matched sample of 13,378, of which firms with and without M&A experience have both 6,689 observations. The propensity-score model is reasonably effective in constructing a balanced sample. Some control variables regarding borrower characteristics (e.g., TFA, PBK, and RATING) become insignificantly different at the 1% level between the two groups.

[1] Although I apply a lead-lag relation in the regression, the results still suffer from endogenous problem.

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Panel B of Table 14 reveals the sample with and without cross-border M&A experience. There are 16,307 observations in the full sample, of which 12,822 (79%) and 3,485 (21%) are firms without and with M&A experience, respectively. I then use a propensity-score matched sample of 6,970, of which firms with and without M&A experience have both 3,485 observations. Most of the control variables related to borrower features are insignificantly different at the 1% level between the two groups.

I report the regression results of propensity score matching in Tables 15 and 16. Table 15 shows that the results remain consistent after adjusting for covariate differences between the two groups. Firms with M&A experience two years preceding the loan origination enjoy better price and non-price loan terms. The M&A dummy variable is negatively associated with loan spreads (-0.074, t-value= -7.77) and positively associated with loan amounts (0.039, t-value=2.35) and maturities (0.02, t-value=2.29). Table 16 reports that cross-border M&A dummy is negatively correlated with loan spreads (-0.039, t-value= -2.75) and positively correlated with loan maturities (0.026, t-value=2.09). However, I find no significant relationship between cross-border M&A experiences and loan amounts.

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Table 14: Descriptive statistics for full and propensity-score matched samples

Panel A: Sample with and without M&A experience

	Full Sample				Propensity-Score Matched Sample			
	DMA=0 (obs= 6,689)	DMA=1 (obs= 9,618)	Difference in means	t- statistic	DMA=0 (obs= 6,689)	DMA=1 (obs= 6,689)	Difference in means	t- statistic
SPREAD	5.21 [236.686 bps]	4.952 [190.045 bps]	0.259*** [46.640 bps]***	(-20.44) (-18.69)	5.210 [236.686 bps]	4.949 [193.572 bps]	0.261*** [43.114 bps]***	(18.52) (15.80)
AMOUNT	4.844 [381.607 MMUSD]	5.303 [546.934 MMUSD]	-0.459*** [-165.327 MMUSD]***	(-18.48) (-10.35)	4.844 [381.607 MMUSD]	5.277 [521.813 MMUSD]	-0.434*** [-140.206 MMUSD]***	(-16.19) (-8.09)
MATURITY	3.624 [44.886 months]	3.635 [45.735 months]	-0.012 [-0.849 month] **	(-1.09) (-2.37)	3.624 [44.886 months]	3.615 45.070 months]	0.008 [-0.184 month]	(0.69) (-0.47)
COV	0.72	0.694	0.025***	(-3.5)	0.720	0.703	0.016**	(2.06)
TERMLOAN	0.306	0.291	0.015**	(-2.01)	0.306	0.279	0.028***	(3.50)
REVOLVER	0.575	0.544	0.030***	(-3.86)	0.575	0.556	0.019**	(2.18)
SECURED	0.597	0.473	0.124***	(-15.73)	0.597	0.496	0.100***	(11.69)
GENERAL	0.493	0.507	-0.014*	(-1.80)	0.493	0.496	-0.004	(-0.45)
SIZE	7.01	7.533	-0.522***	(-17.78)	7.010	7.555	-0.545***	(-17.15)
TFA	0.619	0.516	0.103***	(-16.13)	0.619	0.623	-0.004	(-0.59)
LEV	0.642	0.593	0.049***	(-12.25)	0.642	0.628	0.013***	(3.15)
ROA	0.003	0.032	-0.029***	(-15.48)	0.003	0.014	-0.011***	(-5.39)
PBK	2.564	2.925	-0.361***	(-5.26)	2.564	2.591	-0.027	(-0.37)
RATING	0.477	0.534	-0.056**	(-1.99)	0.477	0.461	0.016	(0.55)

(Continued)

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Table 14: Descriptive statistics for full and propensity-score matched samples (Cont.)

Panel B: Sample with and without cross-border M&A experience

	Full Sample				Propensity-Score Matched Sample			
	DCROSS=0 (obs=12,822)	DCROSS=1 (obs=3,485)	Difference in means	t- statistic	DCROSS=0 (obs=3,485)	DCROSS=1 (obs=3,485)	Difference in means	t- statistic
SPREAD	5.143 [221.153 bps]	4.745 [165.115 bps]	0.398*** [56.038 bps]***	(-23.41) (-20.71)	5.075 [208.372 bps]	4.745 [165.115 bps]	0.330*** [43.257 bps]***	(16.09) (12.66)
AMOUNT	4.952 [394.524 MMUSD]	5.712 [790.361 MMUSD]	-0.761*** [-395.837 MMUSD]***	(-27.05) (-13.77)	5.008 [395.830 MMUSD]	5.712 [790.361 MMUSD]	-0.704*** [-394.531 MMUSD]***	(-19.86) (-13.04)
MATURITY	3.645 [45.734 months]	3.578 [44.109 months]	0.067*** [1.625 months] ***	(-4.91) (-3.73)	3.633 [44.873 months]	3.578 [44.109 months]	0.055*** [0.765 month]	(3.34) (1.43)
COV	0.72	0.65	0.070***	(-7.76)	0.710	0.650	0.061***	(5.45)
TERMLOAN	0.304	0.272	0.033***	(3.81)	0.263	0.272	-0.009	(-0.84)
REVOLVER	0.57	0.506	0.065***	(-6.8)	0.611	0.506	0.106***	(8.93)
SECURED	0.563	0.378	0.186***	(-19.93)	0.531	0.378	0.153***	(13.00)
GENERAL	0.496	0.519	-0.023**	(-2.44)	0.523	0.519	0.004	(0.31)
SIZE	7.084	8.182	-1.098***	(-33.02)	7.102	8.182	-1.080***	(-25.65)
TFA	0.583	0.467	0.115***	(-16.68)	0.457	0.467	-0.010	(-1.20)
LEV	0.616	0.603	0.013***	(-3.05)	0.593	0.603	-0.010*	(-1.93)
ROA	0.016	0.033	-0.017***	(-8.99)	0.035	0.033	0.001	(0.57)
PBK	2.633	3.307	-0.674***	(-8.05)	3.194	3.307	-0.112	(-1.03)
RATING	0.492	0.577	-0.085**	(-2.31)	0.512	0.577	-0.065	(-1.45)

Variables are defined in Appendix A. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 15: The effect of M&As on loan terms after matching samples

	SPREAD	AMOUNT	MATURITY
Intercept	5.553***	0.286**	2.482***
	(74.70)	(1.97)	(30.66)
DMA	-0.074***	0.039**	0.020**
	(-7.77)	(2.35)	(2.29)
SPREAD	-	-0.163***	-0.011
	-	(-9.81)	(-1.21)
AMOUNT	-0.054***	-	0.082***
	(-10.08)	-	(14.99)
MATURITY	-0.013	0.287***	-
	(-1.21)	(15.30)	-
COV	-0.011	0.142***	-0.022**
	(-0.90)	(7.13)	(-2.03)
TERMLOAN	0.461***	-0.335***	1.187***
	(19.20)	(-8.11)	(59.09)
REVOLVER	0.162***	-0.165***	1.053***
	(7.26)	(-4.56)	(63.90)
SECURED	0.512***	0.014	0.109***
	(42.64)	(0.64)	(9.18)
GENERAL	-0.024**	-0.177***	0.024***
	(-2.53)	(-10.79)	(2.59)
$SIZE_{t-1}$	-0.108***	0.605***	-0.023***
	(-21.45)	(91.43)	(-4.80)
TFA_{t-1}	-0.072***	0.045*	-0.035**
	(-4.82)	(1.67)	(-2.50)
LEV_{t-1}	0.436***	0.209***	-0.074***
	(18.71)	(5.16)	(-3.17)
ROA_{t-1}	-0.877***	0.877***	0.532***
	(-17.92)	(10.99)	(11.19)
PBK_{t-1}	-0.010***	0.004*	-0.002**
	(-7.70)	(1.80)	(-2.34)
$RATING_{t-1}$	0.013***	0.024***	0.017***
	(5.36)	(4.90)	(8.70)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.595	0.662	0.496
Observations	13,378	13,378	13,378

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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Table 16: The effect of cross-border M&As on loan terms after matching samples

	SPREAD	AMOUNT	MATURITY
Intercept	5.504***	0.475**	2.287***
	(53.15)	(2.30)	(21.24)
DCROSS	-0.039***	-0.009	0.026**
	(-2.75)	(-0.38)	(2.09)
SPREAD	-	-0.125***	0.003
	-	(-5.43)	(0.27)
AMOUNT	-0.044***	-	0.060***
	(-5.61)	-	(7.98)
MATURITY	0.004	0.228***	-
	(0.27)	(8.16)	-
COV	0.038**	0.170***	-0.033**
	(2.45)	(6.45)	(-2.56)
TERMLOAN	0.472***	-0.336***	1.251***
	(13.72)	(-5.75)	(48.51)
REVOLVER	0.165***	-0.185***	1.139***
	(5.22)	(-3.64)	(56.26)
SECURED	0.505***	-0.010	0.102***
	(30.00)	(-0.33)	(6.59)
GENERAL	-0.014	-0.191***	0.005
	(-1.04)	(-8.53)	(0.42)
$SIZE_{t-1}$	-0.136***	0.603***	-0.007
	(-18.26)	(61.66)	(-1.04)
TFA_{t-1}	-0.142***	0.012	-0.046**
	(-5.65)	(0.28)	(-2.25)
LEV_{t-1}	0.478***	0.132**	-0.076**
	(12.41)	(2.11)	(-2.27)
ROA_{t-1}	-1.197***	1.177***	0.395***
	(-13.51)	(8.95)	(5.17)
PBK_{t-1}	-0.011***	0.001	0.000
	(-6.86)	(0.20)	(0.19)
$RATING_{t-1}$	0.012***	0.015**	0.014***
	(3.86)	(2.42)	(5.28)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.627	0.655	0.560
Observations	6,970	6,970	6,970

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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4.3.2 Test of lender participation

Syndicated loan is composed of at least two lenders. Lead arranger plays the main role of building relationships with the borrowers, negotiating the loan term, along with making a promise regarding an amount for a price range. And participant lenders fund part of the loan (Sufi, 2007). Dennis and Mullineaux (2000) indicate that loan has more probability to be syndicated while borrower information is more transparent.

Previous studies find that information asymmetry influences the formation of syndicate members and the structure of syndicated loans (e.g. Lee and Mullineaux, 2004; Bosch, 2007). Lee and Mullineaux (2004) document that syndicates are more concentrated when the quality of information on borrowing firms is worse. Sufi (2007) argues that reputation of borrowers and lead bank diminish the information asymmetry problems. Borrowers with tiny credit reputation receive syndicated loan with fewer participant lenders.

Fang et al. (2012) document that corporate alliances increase the transparency of borrowing firms through significant information spillover. A well-connected company in the network can raise its visibility, and thus decrease the information asymmetry with potential lenders. I test the relation between M&A activities and composition of syndicate members. Table 17 reports how frequency of M&A deals affects the lenders' participations. I use a count measure of the number of lenders, lead arrangers and participant lenders, and take natural logarithm of the count plus one as dependent variables. I use number of M&A activities for borrowing firms engaged in within the 2-year period prior to the loan initiations (MA) as an independent variable. As shown in column 1 of Table 16, the number of M&A deals is positively correlated with number of lenders (0,006, t-value=2.86). It indicates that the more M&A deals firms engaged

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in within 2 years, the more lenders are willing to lend. This result is consistent with the prior literature (Lee and Mullineaux, 2004).

Column 2 and 3 in Table 17 reveal the results when I perform regression using number of lead arrangers and participant lenders as the dependent variables. The relationship between number of lead arrangers and number of M&A deals is insignificant. However, the number of M&A deals is positively correlated with number of participant lenders at the 1% level (0.007, t-value= 2.73). The results indicate firms involved in more M&A deals may attract more participant lenders on the syndicate.

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Table 17: The effect of number of M&As on lenders' participations

	NUMLENDER	NUMLEADARR	NUMPARTLEND
Intercept	-0.253***	-0.132***	-0.655***
	(-2.88)	(-2.84)	(-5.68)
MA	0.006***	-0.000	0.007***
	(2.86)	(-0.36)	(2.73)
SPREAD	-0.054***	0.031***	-0.092***
	(-6.01)	(7.41)	(-7.74)
AMOUNT	0.210***	0.038***	0.253***
	(37.84)	(14.15)	(35.06)
MATURITY	0.196***	0.034***	0.248***
	(18.10)	(6.96)	(17.27)
COV	0.205***	0.034***	0.248***
	(19.31)	(5.83)	(17.33)
TERMLOAN	-0.053**	0.029***	-0.087***
	(-2.31)	(2.77)	(-2.89)
REVOLVER	-0.020	0.018**	-0.008
	(-1.03)	(2.06)	(-0.33)
SECURED	-0.101***	-0.009	-0.159***
	(-8.29)	(-1.46)	(-9.68)
GENERAL	-0.029***	-0.002	-0.034***
	(-3.07)	(-0.32)	(-2.70)
$SIZE_{t-1}$	0.110***	0.045***	0.112***
	(21.87)	(17.86)	(17.01)
TFA_{t-1}	-0.054***	-0.046***	-0.044**
	(-3.55)	(-5.99)	(-2.16)
LEV_{t-1}	0.048**	0.033***	0.026
	(2.21)	(2.99)	(0.89)
ROA_{t-1}	0.212***	0.056**	0.300***
	(5.05)	(2.56)	(5.22)
PBK_{t-1}	-0.001	0.000	-0.002
	(-1.01)	(0.07)	(-1.01)
$RATING_{t-1}$	0.007**	0.010***	-0.001
	(2.45)	(5.86)	(-0.23)
Year fixed effect	Included	Included	Included
Industry fixed effect	Included	Included	Included
Adjusted R^2	0.496	0.417	0.437
Observations	16,110	16,110	16,110

Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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4.3.3 Subsample analyses based on GDP

Prior studies argue that the better economic environment the target firm operates, the cross-border merger has more possibility to incur (Pablo, 2009). Moreover, the influence of information opaqueness may vary in different economy countries. Hitt et al. (2006) document that when it comes to cross-border M&A, problems concerning information asymmetry and information availability become more severe if target company is situated in an emerging economy country. Therefore, I further examine whether countries' GDP of target companies influence the relation between M&A activities and loan contracting.

To investigate it, I partition my sample into two subsamples based on sample mean value of GDP from 1998 to 2015, which is consistent with the time period of the M&A sample. "HIGHGDP =1" group denotes observations above the sample average, while "HIGHGDP =0" group indicates observations below the average. I run the equation (1) using MA as an independent variable. Results are shown in Table 17.

Columns 1 and 2 of Table 18 reveal that when using SPREAD as the dependent variable, the coefficient of MA is significantly negative in the group with a higher GDP (-0.006, t-value= -2.16), while it is insignificant among the group with a lower GDP. Columns 3 and 4 of Table 18 show the relation between M&A activities and loan amounts. It indicates consistent results that MA terms have significant and positive signs. Untabulated results show that the difference of the MA coefficients between two groups is significant when SPREAD and AMOUNT are dependent variables ($p<0.1$). It implies that the effect of M&As on loan spreads and amounts is more pronounced when the target firms are situated in countries with greater GDP. Columns 5 and 6 of Table 18 indicate when using MATURITY as the dependent variable, the coefficient

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of MA is significantly positive in the group with a higher GDP (0.004, t-value=1.86), while it is insignificant among the group with a lower GDP. However, the difference of the MA coefficients between two groups is insignificant when MATURITY is a dependent variable in an untabulated analysis.

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Table 18: Target firms domiciled in countries with high/low GDP subsamples

	SPREAD		AMOUNT		MATURITY	
	HIGHGDP =1	HIGHGDP =0	HIGHGDP =1	HIGHGDP =0	HIGHGDP =1	HIGHGDP =0
Intercept	5.717***	5.496***	0.239	0.880***	2.232***	2.394***
	(39.85)	(39.26)	(0.83)	(2.90)	(16.91)	(16.37)
MA	-0.006**	0.002	0.028***	0.015***	0.004*	-0.001
	(-2.16)	(0.60)	(5.95)	(2.59)	(1.86)	(-0.50)
SPREAD	-	-	-0.143***	-0.124***	0.023*	0.001
	-	-	(-5.85)	(-3.53)	(1.73)	(0.05)
AMOUNT	-0.045***	-0.047***	-	-	0.084***	0.043***
	(-6.03)	(-3.63)	-	-	(11.07)	(3.69)
MATURITY	0.029*	0.001	0.335***	0.158***	-	-
	(1.75)	(0.05)	(11.55)	(3.75)	-	-
COV	-0.058***	0.100***	0.116***	0.257***	-0.026*	-0.015
	(-3.51)	(4.25)	(3.89)	(6.96)	(-1.80)	(-0.82)
TERMLOAN	0.340***	0.461***	-0.400***	-0.335***	1.218***	1.299***
	(9.39)	(9.23)	(-6.49)	(-3.98)	(43.51)	(35.93)
REVOLVER	0.067**	0.137***	-0.255***	-0.168**	1.081***	1.222***
	(2.03)	(2.93)	(-4.60)	(-2.25)	(45.92)	(44.53)
SECURED	0.425***	0.516***	0.092***	-0.037	0.082***	0.083***
	(26.07)	(20.43)	(3.03)	(-0.81)	(5.34)	(3.62)
GENERAL	-0.077***	0.015	-0.188***	-0.224***	0.013	0.016
	(-5.60)	(0.73)	(-7.95)	(-6.85)	(1.07)	(0.87)
$SIZE_{t-1}$	-0.136***	-0.157***	0.604***	0.577***	-0.029***	-0.006
	(-18.50)	(-12.67)	(58.82)	(35.18)	(-4.09)	(-0.55)
TFA_{t-1}	-0.118***	-0.158***	0.104**	0.040	-0.006	-0.059*
	(-5.16)	(-4.20)	(2.53)	(0.59)	(-0.30)	(-1.81)
LEV_{t-1}	0.431***	0.571***	0.105	0.264***	-0.055*	-0.019
	(11.50)	(9.07)	(1.62)	(2.62)	(-1.67)	(-0.33)
ROA_{t-1}	-1.005***	-1.178***	0.923***	1.808***	0.386***	0.483***
	(-11.31)	(-7.84)	(6.92)	(8.40)	(5.19)	(3.80)
PBK_{t-1}	-0.008***	-0.016***	0.013***	-0.004	-0.002	0.003
	(-4.01)	(-5.81)	(4.20)	(-0.95)	(-1.46)	(1.21)
$RATING_{t-1}$	0.012***	0.005	0.014**	0.022**	0.016***	0.013***
	(3.46)	(1.05)	(2.10)	(2.55)	(5.91)	(3.18)
Year fixed effect	Included	Included	Included	Included	Included	Included
Industry fixed effect	Included	Included	Included	Included	Included	Included
Adjusted R^2	0.559	0.671	0.619	0.658	0.532	0.622
Observations	6,484	3,128	6,484	3,128	6,484	3,128

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The sample is divided into two groups based on the sample mean value of GDP in 1998-2015 from World Bank. One if a M&A target domiciled in countries with higher GDP, and zero otherwise. Variables are defined in Appendix A. Standard errors are clustered by the facility level. t-values are in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent level (two-tailed), respectively.

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5. Conclusion

A successful M&A deal can enhance firms' visibility via scale enhancement, value creation, and increase of marketing efficiency (Rahman et al.,2016; Guardo et al., 2019; Xie et al., 2020). It lessens the information asymmetry between borrowers and lenders. This paper adds new empirical evidence regarding the economic consequence of mergers and acquisitions.

In this study, I explore whether borrowing firms' M&A deals affect the bank loan terms for the time period from 2000 to 2016. I document that a borrowing firm that engaged in M&A deals enjoys low cost of bank loans, greater loan amounts and longer maturities. My finding is robust using the propensity score matching method. In addition, the frequency of M&A activities affects loan spreads and amounts. Cross-border M&A experience is associated with lower cost of debts.

I also link the country characteristics where target companies are located to the loan terms. I use language and colonial history as proxies for cultural background. I report that when acquirers and target companies are domiciled in countries with more similar official language and colonial history (i.e., some colonizer in the past), borrowing firms (i.e., acquirer) tend to get lower loan spreads compared to those with lower similarity of official language and colonial history. The results indicate that similar cultural background implies smaller information cost during integration, which would in turn reduce cost of debts.

Moreover, I perform several additional analyses. I examine whether firms with previous M&A experiences affect syndicate structures. I report that M&A activities attract more lenders by increasing the number of participant lenders, instead of lead lenders. I also investigate the relation between country GDP of the target companies

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and loan terms. The results indicate that borrowing firms enjoy lower loan spreads and larger loan amounts when their M&A target firms domiciled in countries with higher GDP. Overall, this study shows that better loan contract terms may be one of the benefits accompanying M&A activities. Future research could take into consideration of post-M&A performance and how this may influence lenders in setting loan contracts.

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Appendix A: Variable definitions

Variable	Description
DMA	One if a firm has at least one merger and acquisition deal 2 years before the loan initiations, and zero otherwise.
MA	Number of merger and acquisition deals 2 years before the loan initiations.
MAMAX	Number of M&As scaled by the maximum number of M&As in the sample 2 years before the loan initiations
DCROSS	One if a firm has at least one cross-border M&A deal 2 years before the loan initiations, and zero otherwise.
CROSS	Number of cross-border M&A deals 2 years before the loan initiations.
CROSSMAX	Number of cross-border M&As scaled by the maximum number of cross-border M&As in the sample 2 years before loan initiations
SIMLANOFF	Sample is divided into two groups based on sample mean value of official language similarity. One if M&A targets domiciled in countries with official language similar to United States, that is English, and zero otherwise.
SIMLAN20	Sample is divided into two groups based on sample mean value of language similarity. One if M&A targets domiciled in countries with language spoken by at least 20% of the population similar to United States, that is English, and zero otherwise.
SIMCOL	Sample is divided into two groups based on sample mean value of colonial history similarity. One if M&A targets domiciled in countries with colonizer (long period and substantial participation in governance) similar to United States, that is Great Britain, and zero otherwise.
NUMLENDER	Natural logarithm of number of lenders plus one.
NUMLEADARR	Natural logarithm of number of lead arrangers plus one.
NUMPARTLEND	Natural logarithm of number of participant lenders plus one.
HIGHGDP	Sample is divided into two groups based on sample mean value of GDP in 1998-2015 from World Bank. One if M&A targets domiciled in countries with higher GDP, and zero otherwise.

(Continued)

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Appendix A: Variable definitions (Cont.)

Variable	Description
SPREAD	Natural logarithm of all-in spread drawn, which is the amount the borrower pays in basis points over LIBOR or its equivalent for each dollar drawn down from the loan.
AMOUNT	Natural logarithm of loan amount measured in millions of dollars
MATURITY	Natural logarithm of loan maturity measured in months.
COV	One if a loan has at least one financial or general covenant, and zero otherwise.
TERMLOAN	One if the specific tranche type is a term loan, zero otherwise.
REVOLVER	One if the specific tranche type is a revolver loan, zero otherwise.
SECURED	One if the loan is secured, zero otherwise.
GENERAL	One if the loan is for general purpose, zero otherwise.
SIZE	Natural logarithm of total assets.
TFA	Ratio of fixed assets to total assets.
LEV	Ratio of liabilities to total assets.
ROA	Return on total assets.
PBK	Ratio of market to book.
RATING	For loan maturity within 365 days, I use S&P Domestic Short Term Issuer Credit Rating, and for loan maturity exceeds 365 days, I use S&P Domestic Long Term Issuer Credit Rating. For S&P Domestic Long Term Issuer Credit Rating, I assign an AAA rating a value of 11, AA or AA+ or AA- rating a value of 10, A or A+ or A- rating a value of 9, BBB or BBB+ or BBB- rating a value of 8, BB or BB+ or BB- rating a value of 7, B or B+ or B- rating a value of 6, CCC or CCC+ or CCC- rating a value of 5, a CC rating a value of 4, a C rating a value of 3, a SD rating a value of 2, a D rating a value of 1, and 0 for not-rated firms or not meaningful data. For S&P Domestic Short Term Issuer Credit Rating, I assign A-1+ or A-1 rating a value of 10, an A-2 rating a value of 9, an A-3 rating a value of 8, a B rating a value of 7, a B-1 rating a value of 6, a B-2 rating a value of 5, a B-3 rating a value of 4, a C rating a value of 3, a SD rating a value of 2, a D rating a value of 1, and 0 for not-rated firms.

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