

Impact of global financial crisis on syndicated loan terms in China

Monomita Nandy¹

University of Surrey

Surrey Business School

Guildford

GU2 7XH

UK

Email: m.nandy@surrey.ac.uk

Phone: +44(0)1483829975

Suman Lodh

Middlesex University Business School

The Burroughs, Henden

London NW4 4BT

UK

Email: s.lodh@mdx.ac.uk

Phone: +44(0)2084115584

Please do not quote

¹ Corresponding Author: Address: University of Surrey, Surrey Business School, Guildford, GU2 7XH, UK. Email: m.nandy@surrey.ac.uk Phone: +44(0)1483829975

Abstract

In this paper we study the impact of the recent financial crisis on the cost of syndicated loan in China. We examine 644 non-financial Chinese firms during 2007-2012 and find that foreign lead arrangers offered a lower spread than the domestic lead arrangers. During the crisis the amount of foreign syndicated loans decreased and maturity period was shorten in China. The findings will contribute to the syndicated loan literature related to emerging market. Other developing and emerging economies and their policy makers at national and regional level can prepare a better strategy to survive during any future global financial crisis.

Keywords: Loan Spread, Loan Amount, Loan Maturity, China, Crisis

EFM Classification: 620 - Emerging Markets

1. Introduction

During the last two decades there is a considerable expansion of the volume of syndicated loan throughout the world. In a syndicated loan at least two lenders together lend funds to the borrowing firm. The lead arrangers look for participant lender and develop relationship with the firms, finalize the contract (Sufi, 2007). In the developed economies the total amount raised by firms by public debt and equity issuance is quite far behind the loan amount (Drucker and Puri, 2007) and particularly the syndicated loan amount increased at a very rapid rate (Ferreira and Matos, 2012). Almost a same trend of rising volume of syndicated loan is observed in the emerging markets (Godlewski and Weill, 2008). But following the Lehman bankruptcy, during the second half of 2008 there was a sharp decline (by 67%) of gross syndicated lending in developed markets and also in many emerging markets (Chui et al., 2010). The financial crisis started mainly during the third quarter of 2007. In the literature, for the poor performance of the banks different factors such as bank-level governance, country-level governance, previous profitability position etc. are identified by the researchers (e.g. Beltratti and Stulz, 2009; Ivashina and Scharfstein, 2010). The performance of the bank dependent borrowers gets affected by the recent crisis (Chava and Purnanandam, 2011). Other researchers tried to explain part of the crisis associated with syndicated loan by a 'flight home effect' (Giannetti and Laeven, 2012). Moreover, as there exist a clear borrower-lender and arranger-participant relationship in syndicated loans (Esty, 2001) the shocks get transmitted from one country to other through cross-border syndicated lending (De Haas and Van Horen, 2012). In most of the syndicated loan as the lead arrangers are international banks and financial institutions (Chui et al., 2010) the crisis that generated in developed market affected the emerging markets. In China a different situation is observed during the financial crisis that started in 2007. The issuance of syndicated loan grows continuously during the crisis as the lead arrangers belong to China (Chui et al.,

2010). But how the financial crisis affected the cost of debt (syndicated loan) is not yet examined in the existing literature. Major corporate loans are syndicated loans in China and it is the most popular source of corporate finance (Pessarossi and Weill, 2011). Because of this immense importance of syndicated loan and its growth throughout the crisis period motivates us to explore the changes in the cost of syndicated loan during the crisis in China. We want to test how do the syndicated loan terms with foreign arrangers vary compared to the syndicated loans fully arranged by the domestic arrangers?

Banks usually can diversify their portfolio, avoid single name exposure, diversify the income source by incorporating fee income as lead arranger and can overcome the problem associated with origination capabilities (Godlewski and Weill, 2008) when they take part in syndicated loans. Borrowers are also benefited from less costly (Altunbas and Gadanecz, 2004) syndicated loan as it can be arranged very quickly and most of the time the total amount of debt is also quite larger than other sources of debt like bonds (Godlewski and Weill, 2008). Because of the above mentioned benefits for the financial and non-financial firms there is a high preference for the syndicated loan in China even at the time of crisis. The development in the bond market (Pessarossi and Weill, 2011) remains suppressed by syndicated loan market in China. Firm performance is highly associated with debt market (Bharath et al., 2011) which affects the health of the banks and overall stabilizes the economy of the country. So, it is always important to learn the cost of debt which is a determinant of the economic and financial policy of the country. From the existing literature we know that in the syndicated loan market there is an agency problem as lead arrangers always have some information advantage over the participants (Strahan, 1999; Godlewski and Weill, 2008) and also there is a moral hazard problem as more participants in a loan reduce the monitoring initiative by the banks (Pennacchi, 1988). Based on

these literature we argue that during crisis the agency problem still remains in China as most of the lead arrangers and participants of syndicated loans become very competitive because of high information asymmetry and poor accounting disclosure system. Moreover, we also argue that through the lead arrangers and the participants belong to the same country but because of involvement of many banks in a syndicate loan there exists the ignorance for monitoring the firms. However, more foreign participants reduced the firm opacity to a great extent in China as the firms are required to disclose more information when any foreign arrangers take part in any syndicated loan. So, if we consider only the volume of syndicated loans in China we cannot capture the complete impact of crisis on syndicated loan market. We can find evidence that total volume of syndicated loans grown constantly but it can be the case that this situation is possible because of remarkable change in loan contract terms. There is a far reaching impact of the cost of debt on economy. So, in our paper we extend the existing literature (Chui et al., 2010) related to syndicated loan in emerging market and theoretically as well as empirically identify the changes in the terms of loan contract to find the impact of crisis. We selected China as it is one of the leading emerging markets and as the literature explains the negative impact of crisis on the volume of syndicated loan market in China.

We use differences-in-differences method on 644 non-financial Chinese firms during 2007-2012 to empirically test our hypotheses in relation to our above mentioned research question.

We find that the foreign lead arrangers to overcome the financial difficulties in their home country preferred to attract more lead arrangers in a single syndicated loan and to maintain their existence in the Chinese market they offered a lower spread than the domestic lead

arrangers. Moreover, the amount of foreign syndicated loans decrease during the crisis and the loans carry a shorter maturity period.

To the best of our knowledge this is the first study where the impact of financial crisis on price and non-price contract terms of syndicated loan in China are discussed in detail. The findings of our study contribute to the syndicated loan literature related to emerging market. It indicates the way an emerging market like China mitigates the impact of crisis by framing a proper syndicated loan contract terms with domestic arrangers. It documents a good example for the other developing and emerging economies and their policy makers at national and regional level. Findings of this study will guide the loan markets associates to prepare a better survival strategy if required during any future global financial crisis.

The remainder of the paper proceeds as follows. Section 2 summarizes the existing literature and explain the testable hypotheses of our paper. Section 3 explains the sample and the methodology followed in the paper. Section 4 represents the model and the empirical results. Section 5 concludes.

2. Literature Review and Hypotheses Development

2.1 Changes in syndicated loan before and during the crisis

Demandable debt liabilities of banks give them an incentive advantage over other intermediaries. In the debt market the last two decades have witnessed accelerated growth of the syndicated loan market (Focarelli et al., 2008) for its various special features (for details please see Dennis and Mullineaux, 2000). In the developed market the syndicated loan is the most popular source of corporate debt finance (Sufi, 2007). A same growth trend is also observable in the emerging markets (Godlewski and Weill, 2008). But the recent financial crisis that started in 2008 changed

the well-established growing trend of syndicated loans. In most of the syndicated loans the syndication organizing, monitoring and due diligence are the responsibility of one or more lead arrangers (Dennis and Mullineaux, 2000). In the emerging market as in many cases the lead arrangers are international banks (Chui et al., 2010), the contraction in the bank's foreign claims affected the syndicated loan markets (De Haas and Van Horen, 2012). A difference in the bank capital before and during the crisis (Demirguc-Kunt et al., 2010) gives a hard time to the bank dependent borrowers (Chava and Purnanandam, 2011). The volume of syndicated loans fall sharply (Ivashina and Scharfstein, 2010). The spread remains quite high and the amounts prominently low for the loans borrowed from Lehman associated banks or other failed banks (Santos, 2011). But when the shock get transmitted to the emerging countries (De Haas and Van Horen, 2012) the above mentioned research concludes that except few countries, in most of them the volume of syndicated loans remain substantially low. China, one of the world's fastest growing economies (Okazaki, 2007) is an exception to this declining phenomenon.

Through the time period of global financial crisis the issuance of syndicated loan in China maintained a well balanced growth. Chui et al (2010) explained that ample supply of credit by local banks is an important reason behind the opposite movement in the Chinese syndicated loan market during the crisis time. This is partially true as before the crisis China passed through a series of banking sector reforms (For details please refer Okazaki, 2007) and from 2002 onwards they tried to become a leading market based economy. From December 2006 foreign banks' started their local currency business. Along with other initiatives from the government (like, tax exemptions, strict disclosure rules, acceptance of international accounting rules, enhancing corporate governance norms etc.) the foreign bank participation expanded the syndicated loan market in China. Moreover, in China the most of the loans are state-owned and

issued by joint stock commercial banks (Okazaki, 2007). As China started becoming more globalized and the country grown at a rapid rate the need of domestic capital also increased. To compete with foreign banks the capital injection by domestic banks started rising from 2007. It is quite easy for the domestic banks to expand their activities as they possess good networks within the country and the borrower also prefer them as government acts as a guarantor in most cases. The volume of syndicated loan arranged by domestic banks remains quite high before crisis (Chui et al., 2010). So, in 2008 onwards when the foreign banks started withdrawing from Chinese market because of the global crisis, still the volume of syndicated loan remains stable and was rising.

In the literature it is well established that the volume of non-performing loans in China is quite high which also determine a poor profitability position of the banks. The government is quite concerned about this issue and so most of the banks prefer to give loan to the profitable business. The situation remains same before and during crisis. Consistently there exists a weak quality of loan and absence of a formula for risk pricing (Okazaki, 2007) in China. Moreover, more participation by the domestic banks increased the competition among them and lack of proper accounting information disclosure by firms restricted the monitoring capabilities of the banks. In the developed markets the information asymmetry shaped the syndicated loan because of less transparent borrowers (Dennis and Mullineaux, 2000), their reputation (Lee and Mullineaux, 2004) and their relation with lead arrangers and it also determines the lead arrangers share (Jones et al., 2005). The number of lenders also determines the stock price of the borrowers (Preece and Mullineaux, 1996). So, from the extant literature we can observe the impact of information asymmetry on syndicated loan market in China, both before and during crisis just like that of a developed market. In addition, there is a correlation between borrower

opaqueness and concentration in credit syndicate which leads to the problem of moral hazard (Sufi, 2007). The syndication affects the loan spread, maturity along with the loan amount (Focarelli et al., 2008) and it also changes during the crisis time (Ivashina and Scharfstein, 2010; Santos, 2011). The importance of covenants is admitted in the existing literature (Strahan, 1999), which plays a crucial role at the time of crisis. In the literature related to China it is only proved that the volume of syndicated loan increased during crisis (Chui et al., 2010) but how the other terms changed from the pre-crisis period is yet to be tested. Only total loan amount cannot determine the nature of syndicated loan during crisis. So to fill the gaps in the literature we analyse the changes in the spread, maturity and collateral of syndicated loans to capture the impact of crisis on syndicated loan market in China.

2.2 Hypotheses Development

In the studies related to US, Santos (2011) proved that during the crisis the cost of bank credit remains quite higher than the pre-crisis period. This mainly happened with the bank dependent borrowers. Through different channels (like cross border lending, direct foreign bank participation etc.) the shocks get transmitted in the emerging markets (Cetorelli and Goldberg, 2010). As the financial crisis started transmitting from developed market to emerging markets like China, the information asymmetry keeps on rising. Arrangers find it difficult in assessing the credit worthiness of the firms and it became severe for the foreign arrangers. So we assume that the spread will be higher for the syndicated loan where one of the lead arrangers belongs to foreign country.

In China, we find that from 2007 onwards the domestic banks are becoming the lead arrangers in many syndicated loans. Still we believe that the spread during the crisis time will be

higher for the syndicated loans. Usually the firms prefer to establish relation with well capitalized banks for the future security (Berger et al., 2008). So we assume that the banks with higher capital ratio possess more information from the related firms over the others and charge a spread premium. Information asymmetry rise between the lead domestic arrangers and the domestic participants in China. Moreover, firms become more opaque during the crisis and at the time of global imbalances (Acharya and Schnabl, 2010). Following Rajan (1992), we argue that because of information asymmetry and less transparency the spread for the syndicated loans will be higher in the crisis period compared to the pre-crisis period. But the domestic arrangers are always in an advantageous position than the foreign arrangers because of their past relationships and as the borrowers belong to the same economic environment. On the other side, during crisis, the foreign arrangers find China as financially stable target market than their own imbalanced domestic market. So, to offset the losses arising from non-performing loans in their home country the foreign arrangers would prefer to offer less interest to the financially strong Chinese borrowers. Based on the above discussion we test the following hypothesis.

H1: Compared to domestic syndicated loan, during the crisis period the loan spread remains lower for the foreign syndicated loans in China.

Syndicated loans contribute towards the financial development and stability in any emerging market (Godlewski and Weill, 2008). China is also not an exception to this. The size or total amount of the loan is an important component of any syndicated loan. In the developed market there is a clear fall in the total amount of loan as the major banks playing the role of lead arrangers was affected by crisis (Santos, 2011). But as China remains quite steady from financial aspect before crisis, and as they passed through the reforms to strengthen the financial position (Okazaki, 2007) of the financial sector, so, we assume that the supply of credit remains steady

even in the period of crisis for the domestic arrangers. Withdrawal of foreign arrangers from the Chinese syndicated loan market may affect the total amount of syndicated loan but as the liquidity position of the domestic lead arrangers are same as before the crisis, we hypothesize

H2: Compared to domestic syndicated loan, during the crisis period the foreign syndicated loan amount decreases in China.

In a syndicated loan when there is a need of intense due diligence and monitoring by the borrowing firm then the lead arrangers usually prefer concentrated syndicate and retains a larger portion of the loan (Sufi, 2007). If there is less information asymmetry the lead arrangers prefer to hold fewer amounts (Focarelli et al., 2008). If the lead arrangers hold lesser amount then the syndicate will require more arrangers along with the participants. Information asymmetry is very hard to completely off-set with reputation (Sufi, 2007) or any other factors. Many banks get the opportunity to diversify their risks by becoming a member of the syndicate. Banks are always regarded as a monitor of the borrowing firms. But if there are too many lenders then one may think the other will perform the necessary monitoring which very often leads to the non-performing loan. Loan maturity reflects the borrower risk (Nandy and Lodh, 2012) which is associated with the loan spread. On the basis of credit quality hypothesis the lenders prefer to set short maturity for any loan as it gives them the opportunity to regularly assess the credit position of the firms (Diamond, 2004). On the other hand the trade-off hypothesis states that loans with longer maturity usually have high spread (Gottesman and Roberts, 2004). The “savings glut” in China and other countries contributed towards global imbalances and planted the real risk in the financial sector (Acharya and Schnabl, 2010). This global imbalances widen the information asymmetry between the syndicated lenders and the borrowers. So, we assume that in China more domestic banks participation and poor accounting disclosure will not allow the arrangers (mainly

the foreign leads) to assess the credit worthiness of the firms as before. In the pre-crisis period when foreign banks entered the China market they usually go through lots of details of the borrowers which reduce the firms' opacity to some extent. Even liquidity shocks could act as a constraint of domestic lending (Khwaja and Mian, 2008). In total, during the crisis period information asymmetry was widen in China. So, on the basis of above argument we test the following hypothesis.

H3: Compared to domestic syndicated loan, during the crisis period the loan maturity remains longer for the foreign syndicated loans in China.

In the syndicated loan the lead arrangers takes the responsibility of originating a loan and share the portion of the loan with other financial institutions (Ivashina and Scharfstein, 2010a).

According to literature the lead arrangers usually keep one third of the syndicate loan and sell the rest to the other syndicate investors. There is an information asymmetry between the lead arranger and the others as the lead arranges possess more information. But if they are not satisfied with the information about the firm then the lead may want to share the risk with other lead arrangers. In such situation the lead arranger may hold less than one third of the syndicated loan. Again on the other hand lenders are always interested to give more loans to the firms with high profitability (Berger & Udell, 1990; Saidenberg & Strahan, 1999). When such firms are high risky then it may be easy for the lead arranger to attract more lenders as lead. All together the lead arrangers may charge less interest and may arrange loan with longer maturity.

During financial crisis as China remain quite stable the foreign lead arrangers get more attracted towards this country. As the capital position of the foreign arrangers in their home country remains quite weak, so, to organize a syndicate in China one lead arranger cannot

provide the required syndicated loan amount. In such situation, the lead arranger may want to share the risk and capital inadequacy with other lead arrangers from domestic or foreign markets. Following the above discussion we test the following hypothesis.

H4: Compared to domestic syndicated loan, during the crisis period number of lead arrangers increases for the foreign syndicated loans in China.

3. Sample and Methodology

3.1 Sample and Variable Description

To empirically test the effect of crisis on the price and non-price terms of the syndicated loan we collected all loan information related to China from ThomsonOne deal database. The firm characteristics are collected from the Worldscope database. We hand matched few companies with Worldscope database to increase the number of observations. We started with all borrowers in the database and then identified only the non-financial firms. We find 644 non-financial borrowers in China in our sample period. In our sample there are 1018 firm-bank pairs of which 749 have at least two loans.

Our sample period is from 2007-2012². Because of less data availability we started our sample from year 2000. Following the literature (Santos, 2011; De Haas and Van Horen, 2012) we defined crisis period as 2007-2009. We argue that the recent financial crisis started during the fourth quarter of 2007. Because of the banking sector reforms many foreign banks started participating in China as a lead arranger in the syndicated loan market and changed the

² In an extended sample from 2000-2012 (consists of 809 non-financial firms) we have also checked the loan contract terms in pre-crisis, during crisis and post-crisis period.

dominance of domestic firms (McCaule et al., 2002). But again during the crisis more domestic banks played the role of lead arranger. So to capture the impact of crisis we defined pre-crisis period from 2000-2006. To capture the effect of financial crisis in the follow up period we defined first quarter of 2010 to fourth quarter of 2012 as post-crisis period.

Any loan contract consists of both price and non-price terms and it is hard to be differentiated and traded separately (Melnik & Plaut, 1986). When the non-price terms become more restrictive the firms pay a higher interest rate (Strahan, 1999). So, in our study we considered the major price and non-price terms of the syndicated loan terms which are described as follows. We take *Loan Spread* which is All-in-drawn spread. It displays all spreads at multiple levels based on the margin in basis points and includes the base rate spread and facility, upfront, utilization or fronting fee in the database. The next loan term considered in the study is the *Loan Amount*. According to the ThomsonOne database it is the full loan package amount for the target market for all tranches and displayed in millions. *Loan Maturity* is the other important loan contract term and it is determined in years. It is calculated as a difference between the maturity date and the issue date of the loans. Where the maturity date means the latest possible maturity date of the loan and if the loan is extendable, that number of years is added to the maturity to become the final maturity. The issue date for syndicated loans is the announcement date of the transaction. The last loan term considered in the model is the *Lead Arranger*. The Mandated Arrangers are the lead agent banks named in a mandate letter for a particular loan. The Mandated Arranger title has been in use since January 2000. In Asia, Mandated Arrangers are those named lead agents in a mandate letter for a particular syndicate and may not be restricted to the Administration, Syndication or Documentation Agents.

Before deciding any loan contract term the banks assess the creditworthiness of the firms and focus on many firm characteristics. So we follow the literature (Santos, 2011; Strahan, 1999) and control the following firm characteristics. Big firms are assumed to have less probability of default and have better chances to increase their future so we control *Firm Size*, which is defined as log of total assets. Big firms may need more loans with longer maturity for their high growth activities but the spread could be lower than the smaller firms because of less probability of default. *Profitability* is measured as net income divided by sales. More profitable firms may require more loans but may pay less spread as they are considered as a less risky firm by banks. Older firms are more established and so they are considered as a less risky firm by banks. We capture this by *Firm Age*, which is defined as log of age. Older firms may get higher loan amount with long term maturity and may also pay less interest. *Financial Leverage* is the long term debt over total equity. There is a higher probability of default if the firm is highly debt dependent. Especially it is important during the crisis period. These types of firms may get higher loan amount with short maturity and the spread may be quite high. We control *ROA* which is the return on assets. It is defined as the net income after tax divided by total assets. Higher the return the bank considers the firm as less risky. To see the growth of the firm we control *PE Ratio*, which is defined as the current price divided by earnings. High growth firms may get higher loan amount with less maturity and high spread. In the model we control *EBIT* i.e. earnings before interest and tax. Higher earnings indicate less default probability. Most of the time banks see the credit ratings done by the leading rating agencies. We collected the Moody's rating and termed the variable as *Credit Rating*. According to Moody's generic rating any firms have minimal default risk if they belongs to Aaa and the risk keeps on growing for category B and C. Moody append numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through

Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. NR is the non-rated firms. Different industry may be associated with different level of risk so we control *Industry*.

3.2 Data Summary

In this section we provide the summary of major variables used in our study. The detailed summary statistics is depicted in Table 1.

Insert Table 1 about here

In Table 1 we report the summary statistics of *domestic syndicated loans* (all lead arrangers in a syndicated loan are from China), *foreign syndicated loans* (at least one lead arranger of a syndicated loan is from foreign country) and the full sample. The full sample consists maximum loan amount of 39,000 (US\$, mil) which belongs to the domestic syndicated loan group. The maximum of foreign syndicated loan is 6,000 (US\$, mil). The foreign syndicated loan is arranged by maximum of 23 lead arrangers, whereas the domestic syndicated loan is arranged by maximum 8 lead arrangers. The average all-in-drawn spread for domestic syndicated loan is higher than that of foreign syndicated loan. However, the average maturity period (years) is higher for domestic than that of foreign syndicated loan.

Insert Table 2 about here

Table 2 reports the two-sample t test, where all the differences between the mean of treatment group and control group are shown. Here, *treatment group* is associated with loans where one or

more foreign arrangers acted as lead arranger. In the *control group* all the lead arrangers are from China.

4. Empirical Model and Estimations

In this section we first explain the model used in our study to answer our research question and then we explain the estimation results.

4.1 Model

To find out the impact of crisis on the price and non-price terms of syndicated loan terms in China we use the following model.

$$Y_{it} = \alpha + \beta_1 \text{Treat} + \beta_2 \text{Crisis} + \beta_3 \text{Treat} * \text{Crisis} + \gamma X_{it} + \varepsilon_{it}$$

Here, Y_{it} indicates the Loan Spread, Loan Amount, Loan Maturity and Lead Arranger respectively for i th loan in year t . Treat is a dummy equal to 1 for treatment group and 0 otherwise. Treatment group is associated with loans where one or more foreign arrangers acted as lead arranger. In the control group all the lead arrangers are from China. Crisis is a dummy equal to zero if the loan is issued during fourth quarter of 2007 to fourth quarter of 2009 and first quarter of 2010 to fourth quarter of 2012 is equals to one (post-crisis or follow-up period). X_{it} is the vector of control variables (firm size, profitability, firm age, financial leverage, PE ratio, EBIT, credit rating, industry) explained in details in section 3.1. ε_{it} is the usual error term. The α , β s and γ are parameters to be estimated with β_3 indentifying the causal effects of global financial market meltdown on different loan contract terms, i.e the change in Y before and after the treatment for the treated with respect to controls.

The above model implies the following:

Domestic (pre-crisis): α , that is the estimated mean of loan contract terms for the control group on the base line.

Domestic (post-crisis): $\alpha + \beta_2$, that is the estimated mean of loan contract terms for the control groups in the follow-up.

Treatment (pre-crisis): $\alpha + \beta_1$, that is the estimated mean of loan contract terms for the treatment group on the base line.

Treatment (post-crisis): $\alpha + \beta_1 + \beta_2 + \beta_3$, that is the estimated mean of loan contract terms for the treatment group in the follow-up.

Differences-in-differences estimate: $(\text{Treatment post} - \text{Treatment pre}) - (\text{Domestic post} - \text{Domestic pre}) = \beta_3$

The above model is estimated by differences-in-differences method. The underlying assumption of this method is that the outcome in treatment and control group will follow the same time trend in the absence of the treatment. This assumption is difficult to verify. However, in robustness check we use pre-treatment data to show the trends are the same.

4.2 Results

We present our result in Table 3 and Table 4.

Insert Table 3 about here

In Table 3 we estimate the model by difference-in-differences without the control variables. The R^2 in all the four models are very small. In addition, the results in Column 7 are not consistent

with our expectation that is supported by literature. So, in Table 4 we included all the relevant firm-level control variables and syndicated loan terms related variables.

Insert Table 4 about here

Table 4 shows that the coefficient for the interaction term in the model is negative and significant at 10 percent significance level. This supports the Hypothesis 1 indicating that Chinese firms are offered lower interest rate by the syndicate with foreign lead arrangers. The results for the loan amount show that the loan amount by the foreign arrangers decreases by half of the loan amount of domestic arrangers. As we find similar result both in the follow-up period and the difference between pre and post period, we interpret this result as the total amount of loans remains unchanged. In other words, financial crisis seems to have no effect on the loan amount in Chinese market. So this finding indirectly supports Hypothesis 2. This is also consistent with literature (Chui et al., 2010). In Table 4 the coefficient of diff-in-diff is positive and significant, although the differences between treatment and control group in the follow-up period remains negative and statistically significant. This implies that in spite of longer loan maturity for the foreign syndicated loans existed in China before the crisis, in the follow-up period the domestic syndicated loans enjoy longer maturity period. This supports our Hypothesis 3. Hypothesis 4 states that during the crisis the number of lead arrangers increases for the foreign syndicated loans to diversify risk and to compensate for the capital inadequacy in their home country. Our findings show that in the follow-up period the number of lead arrangers increases and so the coefficient of diff-in-diff is positive and statistically significant at 5 percent level. This supports the Hypothesis 4.

4.3 Robustness Test

We test the robustness of our findings with alternative model specifications. This section reports the results of the robustness tests.

As loan spread can be determined jointly with other loan contract terms like the loan amount, loan maturity and number of lead arrangers, in the robustness test we determine the spread without the loan controls. The results remain qualitatively same (not reported).

Following the literature (Santos, 2011), in our original test we defined the crisis period as fourth quarter of 2007 to fourth quarter of 2009. But the sign of crisis can also be seen during third quarter of 2007. So in the alternative estimation we define Crisis as a dummy equal to zero if the loan is issued during third quarter of 2007 to fourth quarter of 2009 and first quarter of 2010 to fourth quarter of 2012 is equals to one (post-crisis or follow-up period). Though the number of loans increased because of expanding the crisis period but the original findings remain almost same in the revised set-up.

Moreover, we included the average share held by the arranger and the average market share of the arranger at time $t-1$ and tested our hypotheses. The findings remain qualitatively similar (results not reported).

To show whether both foreign and domestic syndicated loans have similar time trend in the absence of financial market meltdown we also estimate the model by taking the pre-treatment data by firm fixed effect. Bertrand et al (2004) show that the conventional standard errors often understate the standard deviation of the diff-in-diff estimators. So, we use block bootstrapping standard errors. In block bootstrapping, we draw a whole block as represented by groups together. This helps us to keep any correlation between errors within the block intact with the

block bootstrap sampling. Thus block bootstrapping can provide us reliable standard errors than heteroskedasticity and autocorrelation consistent (HAC) covariance matrices (see Goncalves and White, 2005).

5. Conclusion

The importance of syndicated loan in the corporate debt market is well explained in details in the existing literature (e.g., Sufi, 2007). But lack of studies on cost of syndicated loan in emerging market, especially during crisis motivated us to do this research. Because of the globalization of the banking sector the emerging markets experienced a large number of foreign banks penetration in their economy. By taking part in the syndicated loan the foreign banks increased their participation in the foreign loan market. More global banks in the world banking sector also spread the global imbalances during the crisis period (Acharya and Schnabl, 2010). In the literature there are evidences of cross-border transmission of crisis by foreign banks (Cetorelli and Goldberg, 2011; De Haas and Van Horne, 2013). But how the foreign banks participation in a syndicated loan would affect the cost of loan in an emerging country is yet to be examined.

The studies related to syndicated loan during the crisis identified that in most of the countries the volume of syndicated loan get squeezed (Ivashina and Scharfstein, 2010). In most cases the banks from developed country quit from emerging markets and affected the bank dependent borrowers (Chava and Purnanandam, 2011). China is not an exception to that. But as quite some time before the crisis China went through a series of reforms, it allows the domestic banks and financial institutions to participate more in the syndicated loan market during the crisis. As a result the volume of syndicated loan in China revealed a constant growth rate at the time of crisis (Chui et al., 2010). It raises two questions: what happened to the cost of syndicated loan during the crisis and how it differ for syndicated loan with foreign banks in the syndication? We

considered the price and non-price terms of the syndicated loan and find that the foreign syndicated loans offer less interest to attract more Chinese borrowers. Moreover, the loan amount decreases with shorter maturity period for the foreign syndicated loan in China. Although, these syndicated loans has been arranged by larger number of lead arrangers from foreign markets than that of domestic syndicated loan. So we conclude that the domestic syndicate loan arrangers offer a better non-price terms of the loan contract term than the price-terms to maintain a constant credit supply in China, even .during the time of crisis. It is important to know the cost of debt that allows framing a strategy to isolate the bank driven effect.

Our findings contribute to the existing cross-border syndicated loan literature and also towards the syndicated loan literature during the global crisis and its impact on emerging economies. Only identifying bank lending volume is not enough to deal with any future crisis. We fill the gap in the literature by considering amount and cost of debt of one of the leading emerging country, China. . The findings give a clear indication that how an emerging market like China can mitigate the impact of crisis by framing a proper syndicated loan contract terms and can stabilize the economy. This detail study will assist the policy makers and the decision makers of other emerging countries to frame a proper debt market strategy to survive during any future global crisis. Like any other papers this paper suffers from certain limitations. Usually the percentage of shares of the lead arranger depends on the local relationship. Lack of data didn't allow us to test this. More information on bank characteristics will be one of our future projects. Bank credit exerts an important effect on the firms' activities and also on the country level economy (Campello et al., 2010). So, we want to extend our study in future to find the impact of bank credit on the post crisis performance of the firms.

References:

- Acharya, V.V., and Schnabl, P., 2010. Do global banks spread global imbalances? Asset-Backed Commercial paper during the financial crisis of 2007-09. *IMF Economic Review* 58(1), 37-73.
- Altunbas, Y., and Gadanez, B., 2004. Developing country economic structure and the pricing of syndicated credits. *Journal of Development Studies* 40, 143–173.
- Beltratti, A., and Stulz, R.M., 2009. Why did some banks perform better during the credit crisis? A cross-country study of the impact of governance and regulation. NBER Working Paper 15180.
- Berger, A. N., DeYoung, R., Flannery, M. J., Lee, D., and Oztekin, O., 2008. How do large banking organizations manage their capital ratios? *Journal of Financial Services Research* 34 (2-3), 123-149.
- Bertrand, M., Duflo, E and Mullainathan, S., 2004. How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics* 119(1), 249-275.
- Bharath, S. T., Dahiya, S., Saunders, A., and Srinivasan, A., 2011. Lending relationships and loan contract terms. *Review of Financial Studies* 24(4), 1141-1203.
- Campello, M., . Graham, J. R and Harvey, C. R., 2010. The real effects of financial constraints: Evidence from a financial crisis. *Journal of Financial Economics* 97, 470-487.
- Cetorelli, N., and Goldberg, L.S., 2011. Global banks and international shock transmission: Evidence from the crisis. *IMF Economic Review* 59 (1), 41-76.
- Chava, S., and Purnanandam, A., 2011. The effect of banking crisis on bank-dependent borrowers. *Journal of Financial Economics* 99, 116–35.
- Chui, M., Domanski, D., Kugler, P., and Shek, J., 2010. The collapse of international bank finance during the crisis: Evidence from syndicated loan markets. *BIS Quarterly Review* Sep, 39-49.
- De Haas, R., and Van Horen, N., 2012. International shock transmission after the Lehman Brothers collapse: Evidence from syndicated lending. *American Economic Review* 102(3), 231-237.
- De Haas, R., and Van Horen, N., 2013. Running for the exit: international banks and crisis transmission. *Review of Financial Studies* 26(1), 244-285.
- Demirguc-Kunt, A., Detragiache E., and Merrouche, O., 2010. Bank capital: Lessons from the financial crisis. *The World Bank Policy Research Working Paper Series* 5473.

- Dennis, S., and Mullineaux, D.J., 2000. Syndicated loans. *Journal of Financial Intermediation* 9, 404–426.
- Diamond, D. W., 2004. Committing to commit: Short-term debt when enforcement is costly. AFA Presidential Address. *Journal of Finance* 59, 1447–1480.
- Drucker, S., and M. Puri., 2007. Banks in capital markets: A survey. In *Empirical Corporate Finance*, edited by E. Eckbo. *Handbooks in Finance*, 189–232. Amsterdam: Elsevier/North-Holland Publishers.
- Esty, B., 2001. Structuring loan syndicates: a case study of the Hong Kong Disneyland project loan. *Journal of Applied Corporate Finance* 14.3, 80–95.
- Ferreira, M. A., and Matos, P., 2012. Universal banks and corporate control: Evidence from the global syndicated loan market. *Review of Financial Studies* 25(9), 2703-2744.
- Focarelli, D., Pozzolo, A. F., and Casolaro, L., 2008. The pricing effect of certification on syndicated loans. *Journal of Monetary Economics* 55, 335–349.
- Giannetti, M., and Laeven, L., 2012. The flight home effect: Evidence from the syndicated loan market during financial crises. *Journal of Financial Economics* 104(1), 23-43.
- Godlewski, C. J., and Weill. L., 2008. Syndicated loans in emerging markets. *Emerging Market Review* 9, 206-219.
- Goncalves, S., and White, H., 2005. Bootstrap standard error estimates for linear regression. *Journal of American Statistics Association* 100(471), 970-979.
- Gottesman, A. A., and Roberts, G. S., 2004. Maturity and corporate loan pricing. *Financial Review* 38, 55–77.
- Ivashina, V., and Scharfstein, D. S., 2010. Bank lending during the financial crisis of 2008. *Journal of Financial Economics* 97, 319–338.
- Ivashina, V., and Scharfstein, D. S., 2010a. Loan syndication and credit cycles. *American Economic Review Papers and Proceedings* 100(2), 1–8.
- Jensen, M. C., and Meckling, W. H., 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305–360.
- Jones, J., Lang, W.W., and Nigro, P., 2005. Recent trend in bank loan syndication: evidence for 1996 to 2000. *Journal of Financial Services* 28, 385–402.
- Khwaja, A.I., and Mian, A., 2008. Tracing the impact of bank liquidity shocks: evidence from an emerging market. *American Economic Review* 98(4), 1413-1442.

- Lee, S.W., and Mullineaux, D.J., 2004. Monitoring, financial distress, and the structure of commercial lending syndicates. *Financial Management*, 107–130.
- McCauley, R., Fung S. and B. Gadanecz, 2002. Integrating the finances of East Asia,. *BIS Quarterly Review*, December.
- Melnik, A., and Plaut, S., 1986. Loan commitment contracts, terms of lending, and credit allocation. *Journal of Finance* 41, 425–435.
- Nandy, M., and Lodh, S., 2012. Do banks value the eco-friendliness of firms in their corporate lending decision? Some empirical evidence. *International Review of Financial Analysis* 25, 83–93.
- Okazaki, K., 2007. Banking system reform in China the challenges of moving toward a market-oriented economy. *RAND/OP-194-CAPP*.
- Pennacchi, G., 1988. Loan sales and the cost of bank capital. *Journal of Finance* 43(2), 375–396.
- Pessarossi, P., and Weill, L., 2011. Choice of corporate debt in China: The role of state ownership. *BOFIT Discussion Papers* 29.
- Preece, D., and Mullineaux, D.J., 1996. Monitoring, loan renegotiability, and firm value: The role of lending syndicates. *Journal of Banking and Finance* 20, 577–593.
- Rajan, R. G., 1992. Insiders and outsiders: The choice between Informed and arm’s-length debt. *Journal of Finance* 47, 1367–1400.
- Santos, J.A.C., 2011. Bank corporate loan pricing following the subprime crisis. *Review of Financial Studies* 24(6), 1916-1943.
- Strahan, P. E., 1999. Borrower risk and the price and non-price terms of bank loans. *Working Paper*.
- Sufi, A., 2007. Information asymmetry and financing arrangements: Evidence from syndicated loans. *Journal of Finance* 62, 629–668.

Table 1:
Descriptive statistics

Variables	Domestic					Foreign					Full				
	Obs	Mean	Std. Dev.	Min.	Max.	Obs	Mean	Std. Dev.	Min.	Max.	Obs	Mean	Std. Dev.	Min.	Max.
Loan Spread	81	160.8	157.54	25	798	294	200.06	151.93	17	1350	375	191.58	153.8	17	1350
Loan Amount	377	895.1	3142.09	0.63	39000	641	243.49	520.28	1.23	6000	1018	484.8	1979.79	0.63	39000
Loan Maturity	353	7.7	6.84	0.53	35.08	613	4.36	3.4	0.19	26	966	5.58	5.2	0.19	35.08
Lead Arranger	377	1.31	0.84	1	8	641	2.98	2.76	1	23	1018	2.36	2.39	1	23
Firm Size	15	9.94	1.41	8.04	12.18	106	10.51	1.37	6.11	12.06	121	10.44	1.39	6.11	12.18
Profitability	15	0.02	0.02	0	0.07	93	0.01	0.02	-0.03	0.18	108	0.01	0.02	-0.03	0.18
Firm Age	94	2.57	0.91	2	4.54	263	2.76	0.56	2.1	4.5	357	2.71	0.68	2	4.54
Financial Leverage	15	0.12	0.11	0	0.37	94	0.1	0.08	0.01	0.52	109	0.1	0.08	0	0.52
ROA	22	7.49	4.84	0.35	19.58	118	8.05	5.67	0.07	27.38	140	7.96	5.53	0.07	27.38
PE Ratio	15	5.37	75.74	-180	137	107	7.48	26.65	-111.1	137	122	7.22	35.87	-180	137
EBIT	15	2481.57	3823.5	-81.2	12606.2	108	5197.45	19373.37	-634.7	192317	123	4866.25	18211.38	-634.7	192317
Credit Rating	377	9.95	0.66	1	10	641	9.82	1.09	1	10	1018	9.87	0.95	1	10

Notes: domestic refers to the domestic syndicated loan defined as those loans when all lead arrangers of a syndicated loan are from China. Foreign refers to the foreign syndicated loan defined as those loans when at least one lead arranger of a syndicated loan is from foreign country.

Table 2:
Two-sample t-test (at period =0)

Variable(s)	Control Group (Mean)	Treatment Group (Mean)	Difference
Loan Spread	242.00	197.52	-44.49*** (0.89)
Loan Amount	2404.06	194.91	-2209.16*** (4.32)
Loan Maturity	8.35	4.38	-3.97*** (5.68)
Lead Arranger	1.29	2.66	1.37*** (5.21)
Firm Size	11.79	10.56	-1.23 (1.34)
Profitability	0.00	0.00	0.00 (0.15)
Firm Age	3.08	2.89	-0.19 (1.48)
Financial Leverage	0.10	0.09	0.00 (0.03)
ROA	11.86	7.61	-4.25 (1.63)
PE Ratio	93.80	3.55	-90.25*** (5.52)
EBIT	6297.27	2933.16	-3464.11* (1.79)
Credit Rating	9.74	9.91	0.16 (1.11)

Notes: *** p<0.01; ** p<0.05; * p<0.1. t-statistics is in parentheses. Treatment group is associated with loans where one (or more) foreign arranger(s) acted as lead arranger(s). In the control group all the lead arrangers are from China.

Table 3:**Impact of financial crisis on loan contract terms (Coefficients are for both base line and follow-up period)**

Outcome Variables	Base Line Period			Follow-Up period			7	Obs.	R ²
	1	2	3	4	5	6			
	Control	Treated	Difference	Control	Treated	Difference	Diff-in-Diff		
Loan Spread	242.00 (39.37)	197.52 (15.25)	-44.49 (42.22)	142.35 (18.77)	201.38 (10.95)	59.03*** (21.73)	103.51** (47.49)	375	0.03
Loan Amount	2404.06 (227.98)	194.91 (141.39)	-2200.00 (268.26)	551.03 (108.86)	262.75 (89.03)	-288.28** (140.63)	1920.87*** (302.89)	1018	0.07
Loan Maturity	8.35 (0.62)	4.38 (0.38)	-3.97 (0.73)	7.55 (0.29)	4.35 (0.24)	-3.21*** (0.37)	0.76 (0.82)	966	0.10
Lean Arrangers	1.29 (0.27)	2.66 (0.17)	1.37 (0.32)	1.31 (0.13)	3.11 (0.11)	1.80*** (0.17)	0.43 (0.36)	1018	0.12

Notes: All the models are estimated by Diff-in-Diff technique. All the models are estimated without the control variables.

The standard errors are in parentheses. *** p<0.01; ** p<0.05; * p<0.1.

The estimated coefficients imply:

Column 1: β_0 is the estimated mean of loan contract term for the control groups on the baseline

Column 2: $(\alpha + \beta_1)$ is the estimated mean of loan contract term for the treatment groups on the baseline

Column 3: β_2 is the difference between treatment and control groups on the baseline

Column 4: $(\alpha + \beta_2)$ is the estimated mean of loan contract term for the control groups in the follow-up

Column 5: $(\alpha + \beta_1 + \beta_2 + \beta_3)$ is the estimated mean of loan contract terms for the treatment group in the follow up

Column 6: $(\beta_2 + \beta_3)$ is the difference between treatment and control groups in the follow up

Column 7: β_3 is the effect of financial crisis on the loan-contract terms.

Table 4:**Impact of financial crisis on loan contract terms (coefficients are for follow up period)**

Outcome Variables	Loan Spread	Loan Amount	Loan Maturity	Lead Arrangers
Control Group				
$(\alpha + \beta_1)$	575.14 (966.40)			
$(\alpha + \beta_1)$		-465.68 (1494.44)		
$(\alpha + \beta_1)$			24.21 (2.62)	
$(\alpha + \beta_1)$				-34.05 (15.16)
Treatment Group				
$(\alpha + \beta_1 + \beta_2 + \beta_3)$	154.74 (402.26)			
$(\alpha + \beta_1 + \beta_2 + \beta_3)$		-852.72 (572.61)		
$(\alpha + \beta_1 + \beta_2 + \beta_3)$			2.44 (2.90)	
$(\alpha + \beta_1 + \beta_2 + \beta_3)$				2.96 (7.33)
<i>Diff(FU):</i> $(\beta_2 + \beta_3)$	-420.39** (844.69)	-387.04* (1301.45)	-21.77*** (1.71)	37.01** (11.68)
Diff-in-Diff (β_3)	-420.39** (844.69)	-387.04** (1301.45)	20.00* (47.00)	37.01** (11.68)
Controls				
Firm Level Controls	Yes	Yes	Yes	Yes
Loan Amount	-0.08 (0.18)		0.00 (0.00)	0.00 (0.00)
Loan Maturity	-20.18 (37.27)	21.40 (57.42)		1.26 (0.59)
Lead arrangers	14.55 (14.67)	30.37 (21.72)	0.21 (0.10)	
Loan Spread		-0.19 (0.42)	0.00 (0.00)	0.01 (0.01)
Observations	375	1018	966	1018
R ²	0.46	0.68	0.98	0.82

Notes: All the models are estimated by Diff-in-Diff technique. The standard errors are in parentheses. *** p<0.01; ** p<0.05; * p<0.1. The estimated coefficients imply: $(\alpha + \beta_1)$ are the mean loan-contract terms for the control group in the follow up. $(\beta_2 + \beta_3)$ is the difference between treatment and control groups in the follow up (FU). $(\alpha + \beta_1 + \beta_2 + \beta_3)$ is the mean loan outcome for the treatment group in the follow up. **β_3 is the effect of financial crisis on the loan-contract terms.** Industry dummy is included in all the model but not shown.