

Foreign Exchange Rate Volatility, Financial Crisis, and Price Determination of International Syndicated Corporate Loans: Analysis of US Lenders

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ABSTRACT

This paper investigates the determinants of the price of syndicated loans granted to firms in 24 selected countries by US lenders. By using syndicate deal data from Dealcan database from January 2000 to December 2008, including the period of global financial crisis 2008, this paper does not only examine the macroeconomic and microeconomic determinants of loan price but also inspects how the crisis affected the loan price. The key target of this paper is to examine whether foreign exchange rate volatility affects the syndicated loan price. Based on the empirical results, the findings of this paper are as following: (i) a significant and positive relationship between the volatility of foreign exchange rate and the syndicated loan price, (ii) the financial crisis indeed had an effect on loan price and increased the price, (iii), macroeconomic characteristics affect the loan spreads, and (iv) the loan spreads depend on loan characteristics including loan size, loan maturity, loan purposes, and borrower's business sector. This paper utilizes extensive international syndicate deal database, Dealscan, to provide a unique empirical analysis on pricing of international syndicated loans and its key determinants. Especially, the empirical analysis of this paper emphasizes with the effect of exchange rate risk and global financial crisis on loan pricing as these are key factors of uncertainty and risk in international lending.

JEL Classification: F31, F34, G15, G21

Key Words: International Lending, Syndicated Corporate Loan, Loan Pricing, Foreign Exchange Rate Volatility, Financial Crisis

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1. Introduction

International corporate lending is made mainly in the form of syndicated loan. A syndicated loan is offered by a group of financial institutions jointly agreeing to provide a financing to a particular borrower. The structure of syndicated loans is composed of lead arranger(s) and participating banks. The price of syndicated loan is the interest plus a variety of fees (arrangement fee, legal fee, underwriting fee, etc.). The interest rate is composed of common reference rate such as LIBOR and the spread (margin) which reflects the risk premium, and is reset periodically.

The syndicated lending now has become the biggest corporate financing source in international financial market. The world financial market quickly enjoys the syndicated lending for several reasons. First, syndicated loans represent an important source of external finance in both the developed countries and in emerging market countries. Second, syndicated lending is hybrid of direct financing, e.g., issuing bond, and traditional bank lending. Third, syndicated lending provides benefits for both lenders and borrowers. To the lenders, syndication allows the diversification of credit risk, thus, it contributes to financial stability. Besides, it also helps them cope with the banking regulation which forbids excessive single-name exposure based on the maintenance of the commercial relationship with borrowers. To the borrowers, syndicated loans are cheaper than bilateral loan agreements in terms of spread (Altunbas and Gadanecz, 2003). International lending is made under the risks that normal lending suffers such as credit risk, interest rate risk, and, funding risk and while it also involves more aspects of risks. For instance, foreign exchange risk even becomes more important issue in international lending. Furthermore, macroeconomic conditions, political and legal systems may become factors for

riskiness of international lending. .

Recently, in the studies on syndicated lending, the analysis of determination of loan pricing has been the key issue. Previous research often deals with macroeconomic and microeconomic variables and these two different kinds of determinants are mostly separately employed to explore the effect on loan price. Edwards (1983) provides evidence that lending institutions consider the economic characteristics of countries when determining the spread they charge. Peria and Schumukler (2001) examine the loan interest rate charged to borrowing banks according to bank features and macroeconomic variables. Kleimeiger and Megginson (2000) explored the effect of maturity, loan size, the borrower's business sectors and loan purpose on the loan price. Following the existing literature, Altunbas and Gadanez (2003) made the simultaneous combination of these two streams of literature relying on the developing country data, and found out the effect of purely microeconomic price determinants was in several instances weaker when macroeconomic conditions in borrowers' countries were also controlled for.

This paper utilizes extensive international syndicate deal data, Dealscan, to provide a unique empirical analysis on pricing of international syndicated loan and its key determinants. Given very few studies on the effect of the foreign exchange rate volatility on the price of international syndicated corporate loan, this paper analyzes whether the foreign exchange rate volatility and financial crisis affect international lending. Especially, the empirical analysis of this paper emphasizes with the effect of exchange rate risk and global financial crisis on loan pricing as these are key factors of uncertainty and risk in international lending. This paper examines the impacts of both macroeconomic and microeconomic determinants on pricing international syndicated corporate loans.

The remainder of this paper is organized as follows. Section II introduces possible determinants of pricing of international syndicated corporate loans and suggest associated hypotheses for empirical tests. Section 3 extends the equilibrium characterized in section 2 by assuming that all firms require financing to purchase the inputs for business projects. Section III provides description of data and specifies estimation model. Section IV provides extensive results of empirical analysis and the associated interpretation. Section V summarizes and concludes.

II. Determinants Loan Pricing and Hypotheses

1. Volatility of Foreign Exchange Rate

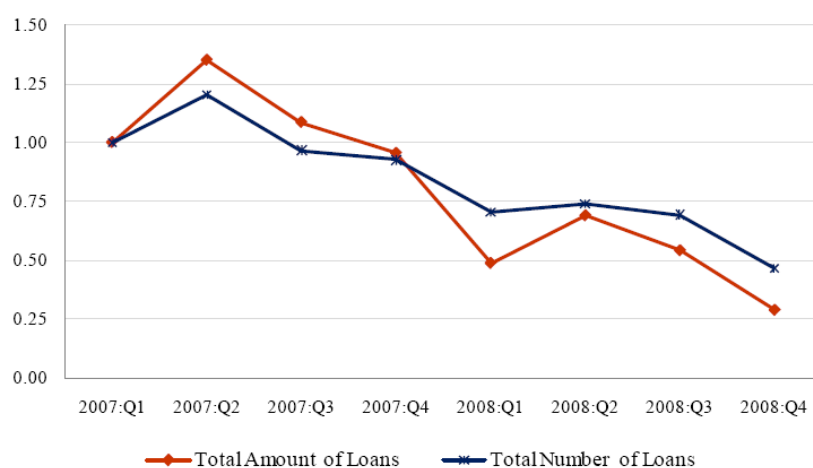
The fluctuation including appreciation and depreciation without warning of currency exchange rate makes the market participants face several difficulties in operating business, even suffered a loss from adverse change. The more fluctuant the exchange rate is, the harder market participants can predict and control, which results the foreign exchange currency risk becomes larger.

In international lending, lenders should not ignore the volatility of exchange rate because it reflects borrower country's economic or political health at that time and it also is the fundamental issue of international finance. Syndicated lending is one of the main international lending activities, thus syndicated loan issuers also should not omit the exchange rate volatility when giving out the lending decision. In accordance, this paper hypothesizes that volatility of exchange rate has an effect on the syndicated loan price, and it is a positive relationship.

2. Financial Crisis

In August 2007, the subprime mortgage crisis broke out as an obvious ending with a dramatic rise in mortgage default and foreclosures in the United States. This event resulted in major adverse consequences for financial institutions and markets around the world. Because of the tougher market conditions, the bankers became more restrained in deal structures and covenants, thus, global lending volume significantly dropped. The decline in new lending was not only proved when statistically calculating period by period or year by year but, furthermore, accelerated during the banking panic also (Ivashina and Scharfstein, 2008).

Total Amount and Number of Loans during Financial Crisis 2007-2008
(Indexed, 2007: Q1=1)



Although the international syndicated loan market has not suffered from the credit crunch to the same extent as stocks, bonds, and derivatives market, it cannot help being unaffected. According to *The Banker, November 2008*, global syndicated loans reached US\$1.5 trillion in the first half of 2008, representing a 42% decrease

over total volume from the same period in 2007 (about US\$2.6 trillion). The number of deals signed fell too. In the first half of 2007, more than 5,000 deals were signed, whereas just 3,500 were signed in the first six months of 2008.

The subprime mortgage crisis in the summer of 2007 led to a violent banking panic, and resulted in a significant decline in global lending volume in general. The syndicated loan market, of course, was under the influence of the credit crisis. Appendix 1 shows global syndicated loan volume extracted from Thomson Reuters's financial report on global syndicated loan market till the fourth quarter of 2008. Following the report, total lending volume in 2008 decreased 44% to US\$2.6 trillion compared to last year's volume of US\$4.6 trillion. The lending institutions indeed became more restrained in offering loans and also in deal structures and covenants. It is because issuing a loan in the period of crisis means accepting more risks than normal. Lending institutions would respond to riskier environments by adjusting loan characteristics. Shortening loan maturity, increasing loan covenants, and most frequently, raising loan price would be such response of lending institutions to financial crisis. This suggests a hypothesis that financial crisis has an effect on the syndicated loan price, and it increases the price.

3. Country Characteristics

1) Macroeconomic Determinants of Price of International Syndicated Loan

Prior studies such as Edwards (1983), Boehmer and Megginson (1990), and Altunbas and Gadanecz (2003) examine the effects of the solvency and liquidity of borrower's country on the prices of syndicated loans. These studies report that the

higher indebtedness of the economy increases the loan price. The more benefit inhabitants may gain because it is unlikely that market participants come from that country will be associated with a lower perceived probability of default due to a kind of sovereign risk.

Edwards (1983) shows that, when analyzing the effect of macroeconomic factors on the price of syndicated loan, key indicators are ratio of external debt to GDP, ratio of international reserves to GDP, growth of per capita GDP, GDP per capita. Loser (2004) also suggests that several macroeconomic indicators such as net international reserves, real effective exchange rate, inflation, and output growth have effects on loan price in international lending. Eichengreen and Moody (2000) and Altunbas and Gadanecz (2003) show that the growth of GDP is negatively related to the loan price. Altunbas and Gadanecz (2003) shows that high inflation increases the spread since it represents the instability of economic growth.

2) OECD versus EME Countries

As of 2010, the Organization for Economic Cooperation and Development (OECD) includes 31 member countries. Most OECD countries are the economies with high- or upper-middle income and are regarded as developed countries. Meanwhile, Emerging Market Economy (EME) country is defined as developing market economy with per capita income in the low to middle range. EME countries may vary from big to smaller countries in their economic sizes. They are considered to be fast-growing economies and in the process of economic and political reforms and development.

International lending involves country risk. Esty and Megginson (2000) show

that the size of international syndicated loan is a function of political risk, measured in terms of creditor rights and country risk ratings (probability of default) of borrower's country. Esty (2006) examines how creditor rights protection and law enforcement affected the credit decision in international lending. Qian and Strahan (2007) show that the stronger legal rights reduce the loan spreads and lengthen the loan maturities. Bae and Goyal (2009) show that stronger creditor rights help to reduce the spreads whereas banks respond to poor enforcement of contracts by reducing loan amounts, shortening loan maturity and increasing loan price. La Porta et al. (1998) show that richer countries have higher quality of law enforcement.

This paper examines syndicated loan contracts that US lender granted to the firms in 13 OECD countries and 11 EME countries, for which the data on legal enforcement and legal origin are available from Djankov et al. (2005).

<Table 1> Creditor Rights, Contract Enforcement Days¹ and Legal Origin by Country

Country	Creditor Rights	Contract Enforcement Days	Legal Origin
OECD Countries			
Australia	3	157	English
France	0	75	French
Germany	3	184	German
Greece	1	151	French
Ireland	1	217	English
Japan	2	60	German
South Korea	3	75	German
Netherlands	3	48	French
Norway	2	87	Nordic
Spain	2	169	French
Sweden	1	208	Nordic
Switzerland	1	170	German
United Kingdom	4	288	English
<i>Mean</i>	2	145.3	
<i>Median</i>	2	154	
EME Countries			
Argentina	1	520	French
Brazil	1	566	French
India	2	425	English
Indonesia	2	570	French
Malaysia	3	300	English
Mexico	0	421	French
Philippines	1	380	French
Russian Federation	2	330	Socialist
Singapore	3	69	English
Thailand	2	390	English
Turkey	2	330	French
<i>Mean</i>	1.73	391	
<i>Median</i>	2	390	

¹ The legal enforcement is controlled with a measure of the number of days it takes to enforce a simple debt contract (Djankov et al., 2005)

As shown in Table 1, both mean value of creditor rights of OECD group is larger than one of EME group, showing that OECD group offers better creditors protection. The means and medians of contract enforcement days of OECD group are much shorter than those of EME group, showing that OECD countries have a stronger system of legal enforcement than EME countries.

La Potra et al. (1998) show that the countries whose legal rules originate in the common law (English) tradition tend to protect investors the most, the next one are German-civil-law, Scandinavian (or Nordic in the table above), and French-civil-law in turns. Law enforcement related result is little different with German-civil law and Scandinavian (or Nordic) countries have the best quality of enforcement, English law countries are strong also, whereas French-civil law countries have the poorest enforcement. Following the data on legal origin by country above, 6 among 11 countries involved in EME group are French-civil-law originated countries, whereas only 4 among 13 OECD countries are French-civil law originated one and the rest are English, German or Nordic law originated countries. This fact affirms the better creditor protection and stronger enforcement of OECD countries compared to emerging market countries.

This paper hypothesizes that the country characteristic has an effect on the price of syndicated loan. In particular, OECD countries enjoy the lower loan spreads than EME countries.

3. Microeconomic Determinants

Previous studies on microeconomic determinants of bank lending decision often investigate the effect of deal characteristics including loan size, maturity, purpose of loan, or borrower business sector on the loan price.

Several studies such as Kleimeier and Megginson (2000), Eichengreen and Mody (2000), Altunbas and Cadanecz (2003) examine the effects of loan size and maturity on the pricing of loans. These studies show that the loan size is significantly negatively related with loan price and loan maturity is adversely related – significantly and positively related with the price. This means a larger loan reduces the loan price whereas a longer loan maturity increases the spread of the syndicated loan.

The purpose of syndicated loan and borrower's business sector are also argued to have effect on the loan price. Altunbas and Gadanez (2003) conclude that syndicated loans for purpose of corporate control involving activities such as LBO or M&A are charged with the highest price compared to loans for other purposes. The lending institutions, besides, have tendency to charge the best price to the borrowers who are in the same business sector, i.e., financial services. Following the previous literature's empirical results, this paper hypothesizes that contract characteristics have effects on price of loan, and in particular, loan purpose perceived to be riskier increases the spreads.

In sum, this paper tests following hypotheses:

Hypothesis 1: *Volatility of exchange rate has an effect on loan price, and it is a*

positive relationship

Hypothesis 2: *Crisis has an effect on loan price, and it increases the price.*

Hypothesis 3: *Country characteristic has an effect on the loan price. In particular, OECD countries enjoy the lower loan spreads than emerging market countries.*

Hypothesis 4: *Loan characteristic has an effect on the loan price. In particular, loan purpose perceived to be riskier increases the spreads.*

III. Data and Estimation

1) Description of the Loan Database

Syndicated loan data of this paper is obtained from Thomson Reuters' Dealscan database. Syndicate deals for borrowing firms in OECD countries (Australia, France, Germany, Greece, Ireland, Japan, South Korea, Netherlands, Norway, Spain, Sweden, Switzerland, and United Kingdom) and in 11 EME countries (Argentina, Brazil, India, Indonesia, Malaysia, Mexico, Philippines, Russia, Singapore, Thailand and Turkey) during the period between January 2000 and December 2008. This paper limits the attention to loans priced based on the London Interbank Offer Rate (LIBOR); this results in the number of 2,731 loan tranches and the volume of approximately US\$1,211 billion in constant dollars. Dealscan database provides the basic characteristics of loans such as amount, maturity, price, loan purposes and the

characteristics of borrowers such as firms' name, nationality, business sectors.

This paper also examines the subset of the sample which includes loans whose firm's sale size data are available. Firm size data represents the firm size. This results in pooled sample of 559 loan tranches with the volume of US\$ 248.6 billion.

To obtain a broad view of the determinants of syndicated loan pricing decision, this paper also uses a macroeconomic data for characteristics of the borrowers over the investigated period. The main data sources for these are World Development Indicators (WDI) from World Bank.

2) Measuring Volatility of Exchange Rate

This paper estimate the annual sample variance based on the daily exchange rates. The 24 selected countries in this paper all adopt the floating exchange rate regime regardless of whether it is managed floating regime or independently floating regime. The necessary data for exchange rates is obtained from Board of Governors of the Federal Reserve System's historical data.

To measure the volatility of exchange rate, this paper calculates the standard deviation of daily exchange rate of 24 selected countries. Bilateral daily exchange rate of these countries' currencies against US dollar from January 2000 to December 2008 are used for measuring the volatility of exchange rate. Among those, 6 countries including France, Germany, Ireland, Netherlands, Spain, and Greece are members of euro-zone which adopted the euro as a single legal currency.

B. Estimation

1) Dependent Variable - Loan Price (spread)

This paper limits attention to loans priced based on the London Interbank Offer Rate (LIBOR). Thus, the interest paid by borrowers will be charged as LIBOR plus the spread (margin), which reflects the risk premium. Since syndicated lending is somewhere between a relationship loan and a transaction loan², pricing structure of syndicated credit must involve a variety of fee (arrangement fee, legal fee, underwriting fee, etc.) beside the interest. This paper uses the spread as market price of syndicated loans.

2) Explanatory Variables - Determinants of Loan Price

Exchange Rate Volatility

Volatility of exchange rate reflects the currency fluctuation risk. Volatility of exchange rate is expected to be positively related to the spread.

Financial Crisis

The testing duration is from January 2000 to December 2008, which is divided into pre-crisis (from January 2000 to September 2007) and crisis (from October 2007 to December 2008). Following crisis starting time choice in Haas and Horen (2009) and Godlewski (2008), this paper supposes that the crisis starts in October 2007 rather

² Contemporary Financial Intermediation 2nd Edition, page 284 – Authors: Greenbaum and V. Thakor, Elsevier Inc. 2007

than in August 2007 which is the time when starts with the collapse of the subprime market in the summer of 2007. This is because there must be a time lag between starting loan negotiations and signing the deal, which often takes on average almost 8 weeks. Financial crisis is indicated by a dummy variable which is one for crisis period and zero for the pre-crisis.

Country Characteristics

Previous studies show that the lending decisions of financial institutions will also be affected by differences in the level of economic development. Because GDP level is often considered a good measure of economic development, this paper employs the *natural log of annual GDP* and *natural log of annual real GDP growth* as independent variables to examine their effects on the price of international syndicated loan, and expect they are negatively related to the spread. Inflation is also an integral reflector of the economic sustainability of growth. Altunbas and Gadanez (2003)'s work pointed out that high inflation increases the spread. I individually have the same expectation on the relationship between the change of *inflation* and the loan price as Altunbas and Gadanez's.

Loan Characteristics

This paper estimates the effects of loan characteristics on the price of international syndicated loans. These loan characteristics include loan size (tranche amount), loan maturity, secured indicator of whether the loan is secured or not, and purpose of loan. *Loan size* is expressed in millions of USD dollars. Most previous studies report the

negative relationship between the price of syndicated loan and its size. *Maturity* of loan is the number of months. Eichengreen and Mody (2000) show positive effect of maturity on loan price while Altunbas and Gadanecz (2003) show that a loan with longer maturity results in lower pricing.

Previous studies show that whether the loan is secured or not is considered an important determinant of lending decision. Altunbas and Gadanecz (2003) show that secured loans carry a premium because they are required due to high credit risk. This paper also employs secured indicator as one of explanatory variable, which one is for secured loans and zero for unsecured loans

The loan purpose is the basic information that lending institutions should assess for potential credit risk. Altunbas and Gadanecz (2003) show that the loans for the purpose of corporate control are more expensive than the ones for other loan purposes. This paper examines the effect of *loan purposes* on pricing decision of syndicated loans. Dummies for six different purposes of loans, corporate control, debt repayment or capital structure, project finance, corporate purpose, general purpose, and other purpose .

Borrower Characteristics

Previous studies such as Dichev (1998) and Gharghori et al. (2006) show the negative effect of firm size on firm's default risk. This finding implies negative relationship between borrower's firm size and the price of syndicated loan. In other words, smaller firms will be charged higher spreads due to their high credit risk and information problem. However, since many observations of firm sizes are missing in Dealscan database, the number of partial samples including firm size data is 559 loan

tranches among 2,731 loan tranches of full sample.

Effect of borrower *business sector* of loans is also analyzed by using dummies for seven groups including manufacturing industry, utilities, high-tech, financial services (both bank and non-bank), population services, state (or government), and other. Among that, the base group is the “other” named business sector.

3) Estimation Model

In this paper, the syndicated loan price granted to 24 selected countries by US lenders during the period from January 2000 to December 2008 is modeled as a function of a large set of explanatory variables stated above. The standard OLS statistics method will be applied.

Regression

$$\begin{aligned} \text{Log}(\text{margin}) = & \beta_0 + \beta_1 \text{Exchange rate volatility} + \beta_2 \text{Crisis indicator} + \\ & \beta_3 \text{Log(GDP)} + \beta_4 \text{Log(GDP growth)} + \beta_5 \text{Inflation} + \\ & \beta_6 \text{Log(loan size)} + \beta_7 \text{Log(loan maturity)} + \beta_8 \text{Secured} \\ & \text{indicator} + \beta_9 \text{loan purpose dummies} + \beta_{10} \text{Log(firm size)} + \\ & \beta_{11} \text{Business sector dummies} \end{aligned}$$

Note that:

Log(margin) = natural logarithm of margin (unit: bp)

Exchange rate volatility = the standard deviation of daily exchange rate by years

Crisis indicator = dummy for crisis equals one if loan’s deal date is on Pre-crisis period (from January 2000 to September 2007) and zero if

loan's deal date is on Crisis period (from October 2007 to December 2008)

$\text{Log}(\text{GDP})$ = natural logarithm of observed country's GDP (annual)

$\text{Log}(\text{GDP growth})$ = natural logarithm of real GDP growth (annual)

Inflation = GDP deflator (annual %)

$\text{Log}(\text{size})$ = natural logarithm of loan size (tranche amount) (unit: US\$ million)

$\text{Log}(\text{maturity})$ = natural logarithm of maturity (unit: months)

Secured indicator = dumthis for secured deal which equals one if it is secured loan and zero otherwise

Loan purpose dummies = dummies for 6 kinds of purposes of loans

$\text{Log}(\text{firm size})$ = natural logarithm of firm's firm size (unit: US\$ million)

Business sector dummies = dummies for 7 kinds of business sectors that borrowers are involved.

IV. Results of Empirical Analysis

The descriptive statistics provided below provides a general view of the characteristics of loan over 2000 – 2008 period.

<Table 2> Annual Statistics of Loan Amounts

Year	Observations	Total	Median	Standard deviation	Min	Max
2000	392	125238.4	110.5	999.731	0.11	15000
2001	300	113981.2	150	983.097	7	13275
2002	237	83059.69	128.5	864.047	8	10650

2003	249	109516.1	150	855.954	2	7000
2004	253	93663.45	186.43	675.294	10	6000
2005	319	125268.1	170	688.59	1.7	7500
2006	341	149472.3	150	1175.953	8	18000
2007	380	218816.3	195	1316.653	1	15000
2008	241	192047.6	204.17	2099.517	7	20000
Total	2712	1211063	150	1142.177	0.11	20000

<Table 3> Annual Statistics of Loan Price

Year	Observations	Mean	Median	Standard deviation	Min	Max
2000	396	164.691	128.75	116.536	10	600
2001	301	158.291	112.5	134.566	10	650
2002	237	164.008	110	143.378	10	650
2003	250	156.154	92.5	135.132	11.5	600
2004	258	168.994	115	163.207	10	1300
2005	319	153.963	100	163.655	7	1310
2006	344	141.691	81.25	143.639	5	1100
2007	383	160.654	125	139.792	6	925
2008	243	201.988	185	134.195	26.5	1050
Total	2731	162.154	120	141.988	5	1310

<Table 4> Annual Statistics of Loan Maturity

Year	Observations	Mean	Median	Standard deviation	Min	Max
2000	361	41.906	36	35.955	3	198
2001	296	41.372	36	36.217	3	240
2002	235	42.23	36	33.739	3	192
2003	248	34.306	36	24.382	2	168

2004	255	45.843	48	27.496	6	120
2005	313	47.3163	42	30.514	6	168
2006	335	52.433	60	31.025	6	180
2007	375	57.461	60	35.631	6	240
2008	240	53.971	60	34.868	6	229
Total	2658	46.792	36	33.388	2	240

As shown in Table 2, Table 3, and Table 4, the global financial crisis had significant impact on international syndicated loans. The number of loan tranches was reduced intensely from 383 tranches in 2007 to only 243 tranches in 2008.

Firstly, the lending activity boomed first (total syndicated loan amount in 2007 raised up to approximately US\$ 218.8 billion from about US\$149.5 billion in 2006), then dropped to \$192 billion in 2008, the first drop during continuous 5 years since 2004.

Secondly, there was a drastic change in the loan price which approximately doubled (48 percent) in 2008 in comparison with last year 2007. The average loan price in 2008 was 26% higher than the average price charged in 2007. Moreover, both minimum and maximum value of loan price charged in 2008 is larger than in 2007, especially the minimum value of spread in 2008 is the highest price over the period of 2000 – 2008.

Though a summary statistics about loan maturity does not give a clear view on the change of loan maturity when the crisis outbroke, the average and the longest (maximum) maturity of loans granted in 2008 is shorter than maturity of loans in 2007.

In summary, during the financial crisis in 2008, the average spread was almost doubled, the number of loan tranches decreased intensely, and the total loan size was

reduced.

<Table 5> Average Loan Prices in EME versus OECD countries

Region	Observations	Mean	Median	Std. Dev.	Min	Max
EME countries	1534	175.8346	150	132.2047	10	1310
OECD countries	1197	144.6212	90	151.8816	5	1300
Total	2731	162.1537	120	141.9878	5	1310

Table 5 summarizes that the loans granted to OECD countries are charged with the lower price than to EME countries.

1) Estimation with Full Sample

There are two different kinds of loan samples - the full sample of all loans and the partial sample of loans whose firm size information are available. Except Table 6, all tables afterwards present empirical results for the partial sample.

Table 6 presents the coefficient estimated from regressions of loan spreads with the full sample of all loans (2,731 loan tranches). Column (1) provides estimation without the crisis indicator and column (2) with the crisis indicator. The results show that, regardless of appearance of crisis indicator, the signs are as hypothesized and level of significance of coefficients of all explanatory variables do not change.

<Table 6> Loan Spreads Regressions with Full Sample

Log(margin)	Coef.	Std.Err.	t-stat.	Coef.	Std.Err.	t-stat.
	(1)			(2)		
FX rate volatility	28.4686***	5.0434	5.64	20.4111***	5.4427	3.75

Crisis indicator				0.1995***	0.0516	3.87
Country Characteristics						
Log(GDP)	-0.0635***	0.0191	-3.32	-0.0770***	0.0194	-3.98
Log(GDP growth)	-0.1442***	0.0241	-5.99	-0.1461***	0.0240	-6.08
Inflation	0.0325***	0.0021	15.55	0.0316***	0.0021	15.04
Loan Characteristics						
Log(size)	-0.2379***	0.0116	-20.48	-0.2438***	0.0117	-20.87
Log(maturity)	0.1914***	0.0231	8.28	0.1853***	0.0231	8.02
Secured indicator	0.5092***	0.0364	13.99	0.4934***	0.0365	13.51
Loan Purpose						
Corporate control	0.5480***	0.0847	6.47	0.5285***	0.0846	6.25
Debt repayment/ Capital structure	0.1058	0.0830	1.27	0.1153	0.0828	1.39
Project finance	0.1904*	0.1117	1.70	0.1997*	0.1114	1.79
Corporate purpose	0.1733**	0.0816	2.12	0.1594**	0.0814	1.96
General purpose	0.1993**	0.0858	2.32	0.1935**	0.0856	2.26
Business Sector						
Manufacturing	0.0964	0.0635	1.52	0.0928	0.0633	1.47
Utilities	0.2240***	0.0658	3.41	0.2228***	0.0656	3.40
High-tech	0.3764***	0.0625	6.02	0.3747***	0.0623	6.02
Financial services	-0.3004***	0.0634	-4.74	-0.3066***	0.0632	-4.85
Population services	0.3609***	0.0698	5.17	0.3608***	0.0696	5.19
State	-0.1898	0.2919	-0.65	-0.2300	0.2912	-0.79
<i>Constant</i>	<i>6.2899***</i>	<i>0.5313</i>	<i>11.84</i>	<i>6.7546***</i>	<i>0.5432</i>	<i>12.44</i>
Number of obs	2296			2296		
F-statistics	F(18, 2277) = 106.75			F(19, 2276) = 102.54		
Prob > F	0			0		
R-squared	0.4577			0.4612		
Adj R-squared	0.4534			0.4567		

Root MSE

0.69996

0.69783

Note: *, **, and *** indicates significance at 10%, 5%, and 1% level, respectively.

The coefficient on exchange rate volatility is strongly significant and positive no matter with or without crisis indicator. This finding confirms the Hypothesis 1 that higher volatility of exchange rate increases the loan spreads. Countries with unstable the foreign exchange rate are considered to have the more potential currency risk. Therefore, when carrying out the lending activities with borrowers from these countries, lending institutions become more constrained and charge higher loan price as a premium to the firms in these countries.

The estimation with crisis indicator provides the statistically significant and positive coefficient on crisis indicator. This suggests that, especially when crisis arises, the loan spreads are raised up to respond the various risks in the market including the borrower risks.

The coefficients on GDP and real GDP growth variables are negative and statistically significant, suggesting that borrowers from economies with higher GDP and higher growth rate of GDP may be charged with better (lower) loan price. On the contrary, the higher spreads will be priced to borrowers from countries with high inflation because high inflation undermines the sustainability of economic growth. Based on these findings, this paper provides evidence that country characteristics indeed have effects on lending decision of financial institutions.

Regarding the effects of microeconomic determinants of syndicated loan price, firstly the loan size is negatively whereas loan maturity is positively related to the spreads. These estimations are in accordance with prior literature. Besides, the empirical results here also confirm the hesitation and reservation in lending secured loans. The significance of positive coefficient on secured indicator emphasizes the

likelihood of bankers to add a premium to loan granted to this kind of borrowers, because they are often potentially very risky.

Another very important characteristics is loan purpose. Following the empirical results, the significant and positive coefficient on corporate control is the highest, suggesting that loans for financial activities such as merger & acquisition (M&A) and leverage-buy-out (LBO), which are potentially very risky, will be charged the highest spreads compared to others. This finding is in accordance with Altunbas and Gadanecz (2003).

The outcomes also present the effects of business sectors to which borrowers belong on the bankers' lending decisions. The negative and strongly significant (1% level) coefficient on financial services sector suggests that bankers have tendency to charge the borrowers doing financial services cheaper price than others. On the contrary, borrowers come from the high-technology industry are charged the highest price.

2) Estimation with Partial Sample

Table 7 below will show the results of the regressions of loan spreads with the partial sample of borrowers whose firm size information is available.

<Table 7> Loan Spreads Regressions with Partial Sample

Log(margin)	Coef.	Std. Err.	t	Coef.	Std. Err.	t
	(1)			(2)		
FX rate volatility	31.1067***	9.9434	3.13	30.7511***	11.5294	2.67
Crisis indicator				0.0079	0.1297	0.06
Country characteristics						

Log(GDP)	-0.0503	0.0554	-0.91	-0.0510	0.0566	-0.90
Log(GDP growth)	-0.1845***	0.0472	-3.91	-0.1850***	0.0479	-3.86
Inflation	0.0177***	0.0051	3.48	0.0177***	0.0051	3.46
Loan Characteristics						
Log(size)	-0.2660***	0.0279	-9.54	-0.2662***	0.0281	-9.46
Log(maturity)	0.1045*	0.0538	1.94	0.1042*	0.0541	1.93
Secured indicator	0.4442***	0.0850	5.23	0.4443***	0.0851	5.22
Loan Purpose						
Corporate control	0.8422***	0.2278	3.70	0.8419***	0.2280	3.69
Debt repayment/ Capital structure	0.5474**	0.2294	2.39	0.5483**	0.2301	2.38
Project finance	0.6425**	0.2769	2.32	0.6427**	0.2772	2.32
Corporate purpose	0.5630**	0.2208	2.55	0.5632**	0.2211	2.55
General purpose	0.4461*	0.2343	1.90	0.4468	0.2349	1.90
Borrower Characteristics						
Log(firm size)	-0.0697***	0.0161	-4.32	-0.0697***	0.0161	-4.32
Business Sector						
Manufacturing	-0.0024	0.1292	-0.02	-0.0017	0.1298	-0.01
Utilities	0.2900**	0.1436	2.02	0.2909**	0.1444	2.01
High-tech	0.3568***	0.1243	2.87	0.3578***	0.1256	2.85
Financial services	-0.2912**	0.1471	-1.98	-0.2909**	0.1474	-1.97
Population services	0.5717***	0.1427	4.01	0.5718***	0.1429	4.00
State ³	(dropped)			(dropped)		
<i>Constant</i>	6.7264***	1.4960	4.50	6.7496***	1.5447	4.37
Number of obs	470				470	
F-statistics	F(18, 451) = 19.74				F(19, 450) = 18.66	
Prob > F	0				0	
R-squared	0.4407				0.4407	
Adj R-squared	0.4184				0.4171	

³ Since there is no loan for state or government in partial sample, In Table 7, loan purpose dummy which indicates "State" is dropped.

Root MSE	0.68557	0.68632
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Note: *, **, and *** indicate significance at 10%, 5%, and 1% level, respectively.

Following the methodology applied to regressions of loan spreads with the full sample, regressions for pooled sample are also run without Crisis indicator (column (1)) and with Crisis indicator (column (2)).

Basically, the first regression without crisis indicator presents the results which are quite similar with those of Table 6 (regressions with full sample of loans) For example, the exchange rate volatility has a positive impact on loan price, macroeconomic indicators like high inflation increases the price, or GDP growth and GDP are all negatively related to it (though the coefficient on GDP is not significant). Furthermore, the basic loan characteristics including loan size, loan maturity and whether secured or not are all similar to that I concluded before.

The coefficients on loans purposes are all statistically significant. Among those, the value of coefficient on corporate control is the highest, confirming the loans for corporate control are often charged the most expensive. Besides, the results of coefficients on dummies representing business sectors once gain pointed out loans granted for borrowers of financial services sector are charged with the best price.

One considerable thing shown in Table 7 is the appearance of an added variable, the natural log of firm size. The negative coefficient on the indicator of firm size reflects that larger firm often yields the lower price.

Similar to the first regression without control of crisis indicator (column 1), the second regression with control of crisis indicator (column 2) also provides the similar outcome in Table 6. Nevertheless, though the Crisis indicator is used this time is positively related to the spreads, the relation is not significant. It may be due to the number of observations of partial sample, which includes 470 loan tranches only, is

much smaller than of that of full sample.

3) Effects of Country Brand on Price of International Syndicated Loan

According to the findings about the macroeconomic factors, or country characteristics (Table 5 and Table 6), and the summary statistics on the loan price charged to OECD countries and EME countries (Table 4), this paper checks whether the “country brand” which is a developed country (OECD) and a less developed country (EME) will affect the bankers’ lending decision. This paper employs an additional variable, Country brand indicator, which is a dummy equals one if that country is an OECD member and zero if that country is an EME country.

<Table 8> Loan Spread Regressions with Country Brand Indicator

Log(margin)	Coef.	Std.Err.	t-stat.	Coef.	Std.Err.	t-stat.
	(1)			(2)		
FX rate volatility	25.2701***	5.0373	5.02	18.7626***	5.4177	3.46
Crisis indicator				0.1664***	0.0516	3.22
Country Characteristics						
Log(GDP)	-0.0461**	0.0192	-2.40	-0.0585***	0.0195	-3.00
Log(GDP growth)	-0.1849***	0.0249	-7.42	-0.1838***	0.0249	-7.39
Inflation	0.0260***	0.0024	11.00	0.0256***	0.0024	10.86
Country brand indicator	-0.2372***	0.0407	-5.83	-0.2216***	0.0409	-5.42
Loan Characteristics						
Log(size)	-0.2371***	0.0115	-20.56	-0.2421***	0.0116	-20.84
Log(maturity)	0.1783***	0.0231	7.73	0.1741***	0.0230	7.56
Secured indicator	0.5130***	0.0361	14.20	0.4996***	0.0363	13.76

Loan Purpose

Corporate control	0.5490***	0.0841	6.52	0.5327***	0.0841	6.33
Debt repayment/ Capital structure	0.0919	0.0824	1.11	0.1007	0.0823	1.22
Project finance	0.1230	0.1115	1.10	0.1351	0.1114	1.21
Corporate purpose	0.1080	0.0818	1.32	0.1007	0.0817	1.23
General purpose	0.1337	0.0860	1.56	0.1333	0.0858	1.55

Business Sector

Manufacturing	0.0603	0.0633	0.95	0.0597	0.0632	0.94
Utilities	0.1990***	0.0654	3.04	0.1997***	0.0653	3.06
High-tech	0.3580***	0.0621	5.76	0.3578***	0.0620	5.77
Financial services	-0.2915***	0.0630	-4.63	-0.2973***	0.0629	-4.73
Population services	0.3718***	0.0693	5.37	0.3710***	0.0692	5.36
State	-0.2161	0.2898	-0.75	-0.2479	0.2894	-0.86
Constant	6.1362***	0.5282	11.62	6.5338***	0.5413	12.07

Number of obs	2296	2296
F-statistics	F(19, 2276) = 104.38	F(20, 2275) = 100.09
Prob > F	0	0
R-squared	0.4656	0.4681
Adj R-squared	0.4612	0.4634
Root MSE	0.69495	0.69352

Note: *, **, and *** indicate significance at 10%, 5%, and 1% level, respectively.

Except the adding country brand indicator into the regressions of loan spreads, the methodology applied here is preserved with regressions with and without Crisis indicator. The empirical results confirm again the findings about the effects of all expected determinants of syndicated loan price found out before, such as the volatility of exchange rate, macroeconomic determinants (including GDP,

GDP growth rate, inflation), loan characteristics, or borrower's business sector. Especially, the positive coefficient on Crisis indicator appears very strongly significantly again, consolidating the belief of positive impact of crisis on the loan price.

However, the most remarkable point in the Table 8 is the relationship between the dependent variable, the spreads, and Country brand indicator. It is interesting finding that the coefficient on Country brand dummy is significant and negative, suggesting that borrowers in developed countries indeed obtain the better price than those in less developed countries.

Up to this finding, this paper supposes that if lending institutions care about the country brand of borrowers, there will be the differences in decisions of issuing credit to borrowers from either OECD countries or EME countries depending on each kind of determinants of loan price. To check this supposition, this paper run two regressions separately with sub-sample of loans granted to either OECD countries or EME countries only. Table 9 shows the results of these two regressions.

<Table 9> Spread of Loan Granted to either EME or OECD countries

Log(margin)	Coef.	Std.Err.	t	Coef.	Std.Err.	t
	EME countries			OECD countries		
FX rate volatility	13.4128***	6.1600	2.18	33.5935**	14.7176	2.28
Crisis indicator	0.1980***	0.0667	2.97	0.1695*	0.0922	1.84
Country characteristics						
Log(GDP)	-0.0879***	0.0303	-2.90	-0.0339	0.0292	-1.16
Log(GDP growth)	-0.1849***	0.0377	-4.90	-0.1191***	0.0370	-3.22
Inflation	0.0216***	0.0025	8.51	0.0222*	0.0121	1.83
Loan characteristics						

Log(size)	-0.2772***	0.0188	-14.74	-0.2071***	0.0149	-13.86
Log(maturity)	0.0317	0.0358	0.88	0.2784***	0.0310	8.99
Secured indicator	0.4037***	0.0499	8.10	0.5446***	0.0547	9.97
Loan purpose						
Corporate control	0.3279**	0.1466	2.24	0.6244***	0.1043	5.98
Debt repayment/ Capital structure	0.0810	0.1346	0.60	0.2070*	0.1072	1.93
Project finance	0.2774*	0.1580	1.76	-0.1618	0.1885	-0.86
Corporate purpose	0.0369	0.1313	0.28	0.2632**	0.1085	2.43
General purpose	0.0903	0.1340	0.67	0.2233*	0.1214	1.84
Business sector						
Manufacturing	0.2486***	0.0948	2.62	-0.0011	0.0898	-0.01
Utilities	0.3591***	0.0963	3.73	0.1005	0.0941	1.07
High-tech	0.4159***	0.0963	4.32	0.3028***	0.0835	3.63
Financial services	-0.2137**	0.0961	-2.22	-0.3971***	0.0851	-4.67
Population services	0.4975***	0.1261	3.94	0.2673***	0.0860	3.11
State	-0.4533	0.3221	-1.41	0.8969	0.6875	1.30
<i>Constant</i>	<i>8.0440***</i>	<i>0.8185</i>	<i>9.83</i>	<i>4.8910***</i>	<i>0.8480</i>	<i>5.77</i>
Number of obs	1181			1115		
F-statistics	F(19, 1161) = 32.57			F(19, 1095) = 74.95		
Prob > F	0			0		
R-squared	0.3477			0.5653		
Adj R-squared	0.337			0.5578		
Root MSE	0.6903			0.6784		

Note: *, **, and *** significance at 10%, 5%, and 1% level, respectively.

In general, if we just take a look at variables yield significant coefficients, it shows that all of results are similar with results estimated from the comprehensive regressions with full sample of all loans.

Regardless of whether it is of OECD or EME countries, the volatility of exchange rate and crisis indicator variable are both significantly and positively related to the loan price. This emphasizes with the effect of exchange rate volatility and crisis on lending decisions in general.

Regarding the effects of macroeconomic determinants including the GDP, real GDP growth rate and inflation, there is the first different point which is that the coefficient on GDP of EME countries is significant whereas the one of OECD countries is not. It leads us to one conjunction that lending institutions need to carefully observe and then evaluate macrocosmic factors of EME countries because they could be riskier than OECD countries. That is, due to the fact that OECD countries are economically developed, where GDP is naturally high with middle to high income per capita, credit issuers may ignore the annual GDP evaluation.

Except the maturity of loans granted to EME countries, basic characteristics of loans to both groups of countries all affect the loan price. The relationships between the price and these characteristics are similar with previous examined results. The larger size of loan reduces the price, and secured loan suffers a higher price for the potential default risk. If it is a loan granted to OECD countries, the loan's maturity has a significant and positive relationship with the spreads. Besides, in case of loan for corporate control, no matter what the syndicated loan is issued for the borrower from OECD member or EME market, its price is always the highest compared to others.

Turning to the effects of borrower's business sector, the results keep presenting that the best (lowest) price is especially for borrowers from financial services sector. About other business sectors, population services offering firms and high-tech firms often suffer the high spreads. In particular, population services offering firms in EME

countries are charged the most expensive. It suggests that population service industry like entertaining, in average, is not cared much in less developed countries, which makes firms in this sectors have high probability of being distressed. This fact, however, does not happen in OECD countries, these countries seem to be the “wonderland” for population services development because of the economical development. It even results in the intense competition may cause other risks to these firms.

4) Effects of Financial Crisis on Price of Syndicated Loan

According to the findings from prior estimations, financial crisis has an effect on the spreads. Now this paper conducts two more estimations with loans granted to 24 selected countries before and during the process of the global financial crisis 2007-2008 separately. This estimation is not only for robustness check of crisis impact on loan price and lending decision once crisis happens. Table 10 presents the empirical results of these two regressions.

<Table 10> Loan Spreads around Global Financial Crisis 2007-2008

Log(margin)	Coef.	Std. Err.	t	Coef.	Std.Err.	t
	Pre-Crisis period			Crisis period		
FX rate volatility	23.3723***	7.4128	3.15	35.2065***	6.9656	5.05
Country characteristics						
Log(GDP)	-0.0630***	0.0213	-2.96	-0.2639***	0.0520	-5.07
Log(GDP growth)	-0.1364***	0.0278	-4.90	-0.2288***	0.0502	-4.56
Inflation	0.0311***	0.0022	13.88	0.0511***	0.0066	7.71

Loan characteristics

Log(size)	-0.2570***	0.0131	-19.66	-0.1512***	0.0230	-6.58
Log(maturity)	0.1844***	0.0249	7.42	0.2086***	0.0581	3.59
Secured indicator	0.4924	0.0406	12.13	0.4942***	0.0730	6.77

Loan purpose

Corporate control	0.5195***	0.0897	5.79	-0.2084	0.3601	-0.58
Debt repayment/ Capital structure	0.1470*	0.0867	1.70	-0.8763**	0.3788	-2.31
Project finance	0.2293*	0.1178	1.95	-0.7952*	0.4180	-1.90
Corporate purpose	0.1830**	0.0856	2.14	-0.7225**	0.3572	-2.02
General purpose	0.2279*	0.0905	2.52	-0.7239**	0.3621	-2.00

Business sector

Manufacturing	0.1178*	0.0686	1.72	-0.1753	0.1532	-1.14
Utilities	0.2105***	0.0711	2.96	0.2293	0.1587	1.45
High-tech	0.3620***	0.0677	5.34	0.3661**	0.1475	2.48
Financial services	-0.3173***	0.0682	-4.65	-0.1666	0.1571	-1.06
Population services	0.3692***	0.0757	4.88	0.3367**	0.1612	2.09
State	-0.4494	0.3290	-1.37	1.1567**	0.5075	2.28

<i>Constant</i>	6.3997***	0.5998	10.67	12.2375***	1.5423	7.93
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Number of obs	2014	282
F-statistics	F(18, 1995) = 88.86	F(18, 263) = 22.72
Prob > F	0	0
R-squared	0.445	0.6086
Adj R-squared	0.44	0.5818
Root MSE	0.71888	0.48465

Note: *, **, and *** indicates significance at 10%, 5%, and 1% level, respectively.

The coefficient on volatility of exchange rate appears in both two regressions of

loan spreads is very significant and positive. That means whatever before the crisis or during the process of crisis, exchange rate volatility always has a significant effect on the lending activity, and the higher volatility causes the higher price of syndicated loans.

There is no change in the effects of country characteristics and loan characteristics on the loan price compared to the prior findings too. A country with good economic prosperity (high GDP, GDP growth rate, low inflation) brings back borrowers from that land the better deal with cheaper price. Besides, borrowing with a larger size may be advantageous with a lower price, whereas longer loan maturity limit the benefit to the borrowers with higher spreads. The secured indicator is positively related to the loan price, but this is just significant in the regression of loan spreads charged for loans granted during the crisis period. This finding implies that default probability of secured loans is higher than before crisis, and these secured loans actually have to carry a premium for the potential default risk.

The most interesting point is the changes in coefficients on the dummies of loan purposes. Before crisis, the coefficients on all purposes are significant and positive, but once crisis happens, except the corporate control, the others become significant and negative. Especially the value of coefficient on purpose of debt repayment or capital structure is lowest, suggesting there is a special favor for these loans. It can be interpreted that, in the process of crisis, financially distressed firms might have gone bankrupt, then only financial sound firms can retain their debts.

Regarding to the effects of business sectors on loan price, both regressions with sample of loans granted before crisis and during crisis point out that borrowers in population services and high-tech industries suffer the highest loan price compared to other firms while borrowers in financial services industry enjoy lower loan price.

V. Conclusions

This paper investigates the determinants of the price of syndicated loans granted to firms in 24 selected countries by US lenders. By using Dealcan database from January 2000 to December 2008, including the period of global financial crisis 2008, this paper does not only examine the macroeconomic and microeconomic determinants of loan price but also inspects how the crisis affected the loan price. The key target of this paper is to examine whether foreign exchange rate volatility affects the syndicated loan price or not.

Based on the empirical results, all four hypotheses of this paper are confirmed. First, this paper finds a significant and positive relationship between the uncertainty (volatility) of foreign exchange rate and the syndicated loan price. Second, the financial crisis indeed had an effect on loan price and increased the price. Third, macroeconomic characteristics affect the loan spreads. Finally, the loan spreads definitely depend on loan characteristics including loan size, loan maturity, loan purposes, and borrower's business sector.

In the light of these findings, this paper has reached the following conclusions. The empirical results indicate that countries having the foreign exchange rate more unstable are considered to have the more potential risk (i.e. currency risk); therefore, when making out the financial contract with borrowers from these countries, lenders become more constrained and increases loan price. This conclusion is a contribution to the recent financial research.

This paper finds that loan characteristics are significant determinants of international syndicated loans. Especially, loan for purpose of debt repayment or

capital structure is charged the lowest price, suggesting there is a special favor for this kind of loans and during period of crisis bankers seemed to be likely to grant credits in case of loans used to meet the cost of outstanding financial obligation (i.e. debt repayment) or to consolidate firm's internal structure (i.e. capital structure) than loans for newly operated business (i.e. M&A or leveraged buyout).

In summary, this paper utilizes extensive international syndicate deal database, Dealscan, to provide a unique empirical analysis on pricing of international syndicated loans and its key determinants. Especially, the empirical analysis of this paper emphasizes with the effect of exchange rate risk and global financial crisis on loan pricing as these are key factors of uncertainty and risk in international lending.

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APPENDIX

Appendix 1: Global Syndicated Loans

Region/Nation	1/1/2008 - 12/31/2008		1/1/2007 - 12/31/2007		% Chge in Proceeds
	Proceeds (US\$m)	# of Issues	Proceeds (US\$m)	# of Issues	
Global	2,588,533.8	6,464	4,617,917.9	8,777	-43.9 ▼
Americas	1,165,858.0	2,684	2,338,961.2	3,987	-50.2 ▼
Central America	9,694.1	22	20,842.6	35	-53.5 ▼
Mexico	8,056.5	12	20,061.8	30	-59.8 ▼
South America	20,281.6	66	38,954.0	58	-47.9 ▼
Brazil	10,649.3	36	25,261.2	33	-57.8 ▼
Chile	3,634.6	7	2,100.0	7	73.1 ▲
Caribbean	9,941.6	17	5,608.2	15	77.3 ▲
North America	1,125,940.7	2,579	2,273,556.4	3,879	-50.5 ▼
Canada	107,821.6	262	137,326.8	293	-21.5 ▼
United States	1,018,119.1	2,318	2,136,229.5	3,588	-52.3 ▼
Africa/Middle East	91,065.4	131	139,876.8	186	-34.9 ▼
North Africa	7,947.4	16	5,399.2	11	47.2 ▲
Sub-Saharan Africa	7,481.2	17	22,599.1	38	-66.9 ▼
Middle East	75,636.8	98	111,878.4	137	-32.4 ▼
U.A.E.	42,000.4	46	45,034.1	59	-6.7 ▼
Europe	820,188.5	881	1,633,622.1	1,609	-49.8 ▼
Eastern Europe	85,310.2	167	150,104.5	259	-43.2 ▼
Western Europe	734,878.3	714	1,483,517.6	1,350	-50.5 ▼
France	111,872.7	115	254,966.5	273	-56.1 ▼
Germany	81,454.4	73	231,893.9	136	-64.9 ▼
UK	249,707.6	145	389,828.1	316	-35.9 ▼
Central Asia/Asia-Pacific	228,517.7	774	297,094.2	887	-23.1 ▼
Australasia	57,885.8	117	106,774.0	143	-45.8 ▼
Australia	51,482.6	84	100,285.5	112	-48.7 ▼
New Zealand	6,305.5	32	6,488.4	31	-2.8 ▼
Southeast Asia	43,666.0	129	36,886.5	150	18.4 ▲
Malaysia	5,346.3	19	10,773.8	26	-50.4 ▼
Singapore	27,389.1	50	14,114.6	60	94.0 ▲
North Asia	77,598.5	377	97,965.0	430	-20.8 ▼
Hong Kong	10,436.4	37	20,680.0	67	-49.5 ▼
Taiwan	30,567.2	198	29,097.3	206	5.1 ▲
South Asia	40,651.3	133	44,047.3	134	-7.7 ▼
Central Asia	8,716.2	18	11,421.4	30	-23.7 ▼
Japan	282,904.2	1,994	208,363.7	2,120	35.8 ▲

(Source: Thomson Reuters)

Appendix 2: Description of Loan Purpose

1. Corporate control: LBO, Acquisition line, Takeover
2. Debt repayment/ Capital Structure: Debt repayment, CP backup, CDO, Stock buyback, Dividend Recap, Recapitalize.
3. Project finance
4. Corporate purpose
5. General purpose: Capital expenditure, Trade finance, Working capital, IPO Related Finance, Lease finance,
6. Other: Aircraft finance, Ship finance, Equipment purchase, Spinoff, Telcom Buildout,

Appendix 3: Description of Business Sector

1. Manufacturing: Genenral manufacturing, Beverage, Food and Tobaco Processing, Paper and Packing, Mining, Textile and Apparel
2. High-tech: Technology, Telecommunications, Chemicals, Plastics & Rubber Manufacturing, Agriculture, Automotive, Aerospace and Defense,
3. Financial services: Financial services
4. Population services: Retail & Super market, Media, Healthcare, Hotel & Gaming, Business services, Leisure & Entertainment, Wholesale
5. State: Goverment
6. Utilitie: Oil and Gas, Utilities
7. Other: Real Estate, REITS, Transportation, Shipping, other

Appendix 4: Descriptive Summary by Country⁴

Country	No. of loan tranches	Volatility of exchange rate (by year)								
		2000	2001	2002	2003	2004	2005	2006	2007	2008
Argentina	117	N/A	N/A	0.0227	0.0085	0.0040	0.0024	0.0013	0.0017	0.0032
Australia	44	0.0074	0.0077	0.0055	0.0067	0.0090	0.0060	0.0051	0.0073	0.0172
Brazil	304	0.0051	0.0110	0.0159	0.0094	0.0064	0.0091	0.0083	0.0082	0.0195
France	54	0.0073	0.0068	0.0056	0.0062	0.0068	0.0056	0.0047	0.0037	0.0090
Germany	67	0.0073	0.0068	0.0056	0.0062	0.0068	0.0056	0.0047	0.0037	0.0090
Greece	26	0.0073	0.0068	0.0056	0.0062	0.0068	0.0056	0.0047	0.0037	0.0090
India	121	0.0021	0.0026	0.0008	0.0016	0.0031	0.0023	0.0030	0.0045	0.0074
Indonesia	25	N/A	0.0153	0.0067	0.0045	0.0050	0.0062	0.0051	0.0044	0.0128
Ireland	27	0.0073	0.0068	0.0056	0.0062	0.0068	0.0056	0.0047	0.0037	0.0090
Japan	36	0.0063	0.0060	0.0065	0.0054	0.0064	0.0057	0.0051	0.0056	0.0098
S. Korea	245	0.0042	0.0050	0.0048	0.0051	0.0042	0.0045	0.0041	0.0030	0.0183
Malaysia	41	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0025	0.0030	0.0045
Mexico	375	0.0048	0.0048	0.0049	0.0058	0.0052	0.0039	0.0045	0.0035	0.0122
Netherlands	134	0.0073	0.0068	0.0056	0.0062	0.0068	0.0056	0.0047	0.0037	0.0090
Norway	46	0.0065	0.0058	0.0059	0.0072	0.0078	0.0065	0.0063	0.0059	0.0123
Philippines	49	0.0053	0.0088	0.0028	0.0028	0.0015	0.0025	0.0026	0.0040	0.0046
Russia	294	0.0029	0.0014	0.0012	0.0016	0.0016	0.0023	0.0023	0.0021	0.0057
Singapore	36	0.0022	0.0028	0.0028	0.0028	0.0031	0.0029	0.0026	0.0024	0.0047
Spain	24	0.0073	0.0068	0.0056	0.0062	0.0068	0.0056	0.0047	0.0037	0.0090
Sweden	25	0.0069	0.0074	0.0061	0.0068	0.0074	0.0064	0.0059	0.0053	0.0118
Switzerland	86	0.0070	0.0068	0.0060	0.0069	0.0078	0.0062	0.0055	0.0043	0.0095
Thailand	13	0.0046	0.0029	0.0035	0.0029	0.0029	0.0029	0.0042	0.0080	0.0060
Turkey	159	0.0034	0.0306	0.0092	0.0073	0.0075	0.0068	0.0097	0.0093	0.0155
UK	383	0.0054	0.0050	0.0043	0.0050	0.0065	0.0052	0.0049	0.0041	0.0096

⁴ 6 countries including France, Germany, Ireland, Netherlands, Spain, and Greece adopted the Euro as a single legal currency since 1999, thus have the same currency pair EUR/USD (Euro against US dollar). However, because till 1 January 2001 Greece became a member of “euro-zone” uses the euro as the official currency, the foreign exchange rate of Greece in 2000 is still the Greek currency against US dollar (DRACHMAS/US\$)