

Does Leverage Matter to Market Spread ?

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Securitization includes the transfer of illiquid resources to investors where such exchange is supported by the issuance of obligation securities called Asset-Backed Debt Securities (ABS) through a Special Purpose Vehicle (SPV). The under-utilisation of bonds or the absence of enhancement of the firm credit portfolio resulted in financial difficulties being faced by companies during the financial crisis in 1997. The fundamental focus in this investigation is on the determinants of primary market spread on RMBS, CMBS and ABS, and this study intends to inspect 12 years of information, from 2004 to 2016. Past examinations have left gaps in this area of research. The research objectives are the investigation of the determinants that incorporate domestic macroeconomic variables. The exploration will adopt a quantitative technique in investigating the information gathered, which is focused on pools Ordinary Least Square (OLS) and panel data. Regarding the primary market spread in Malaysia, factors such as debt to equity showed significance in the primary market spread in the control models, and originators may want to consider this economic issue before issuing securitized products.

Key words: *Asset-Backed Securities, Performance, Asset Pricing, Panel data.*

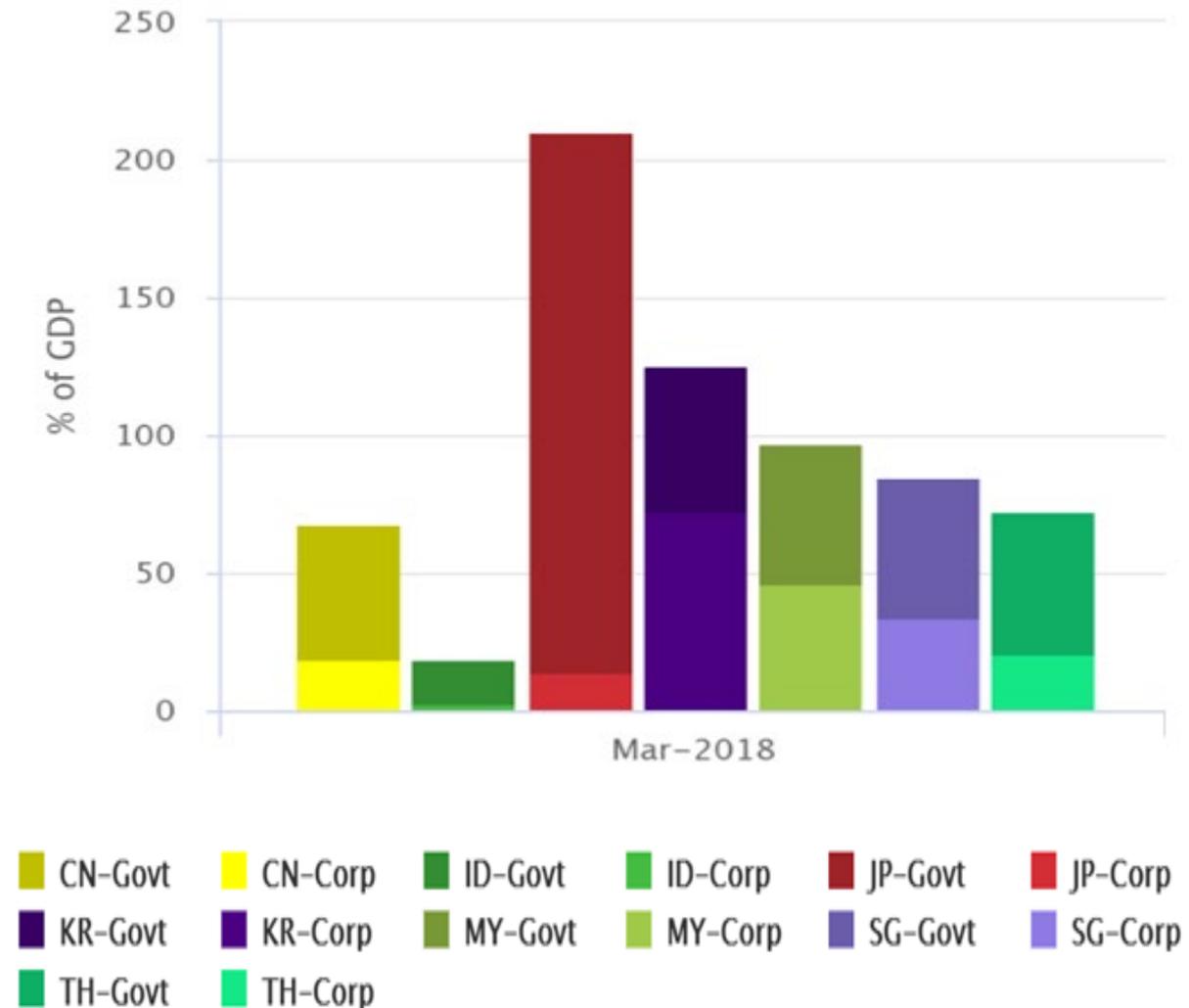
Introduction

It is to be noted that when organisations source for funds, they can either issue stocks and bonds or obtain finance from banks locally or globally. Source capital from equity will result in tax disadvantages, and borrowing through debt is considered expensive (Jiangli et al. 2007). Companies now prefer securitization as it is regarded as an “off-balance-sheet” source

of funds. On the other hand, institutional investors can achieve risk management objectives, better return, and liquidity by investing in securitized products (Ali et al 2015).

A financial market is a place where organisations can issue bonds and invest in bonds to collect external funds and to invest extra funds (Ismail et al. 2014). However, the issuing of local currency bonds by the corporate sector in the bond market is still considered low compared to the worldwide bond market (Bhattacharyay, 2013). Figure 1.1, which depicts the size of the local currency (LCY) bond market as a percentage of the Gross Domestic Product (GDP) across various countries, shows that the portion from corporations, compared to the total outstanding bonds in the market, is still lower than government bonds.

Figure 1. Bar chart of size of local currency bond market as a percentage of GDP in March 2018



(Source: <https://asianbondsonline.adb.org>)

The LCY bonds to Gross Domestic Product (GDP) ratio is calculated using the formula below:

$$\text{LCY bonds to GDP Ratio} = \frac{\text{Total amount of LCY bonds outstanding}}{\text{Annualised Nominal GDP}} \times 100$$

Table 1: Size of local currency bond market as a percentage of GDP in March 2018

	China (CN)	Indonesia (ID)	Japan (JP)	Korea (KR)
Government	49.1	15.85	196.16	52.45
Corporations	19.01	2.89	14	72.87
Total (%)	68.11	18.74	210.16	125.32

	Malaysia (MY)	Singapore (SG)	Thailand (TH)
Government	51.36	50.9	52.32
Corporations	46.25	33.99	20.46
Total (%)	97.61	84.89	72.78

(Source: <https://asianbondsonline.adb.org>)

With reference to the formula, local currency bonds consist of bonds issued by the central bank, local government, state government and state-owned entities. In contrast, corporations consists of public and private companies in the country. As shown in Figure 1.1 and Table 1.1, the highest LCY bonds issued by government to GDP was by Japan (196.16%) compared to the lowest, which was by Indonesia (15.85%). There is a tremendous difference between these two countries. The LCY bonds issued by the Malaysian government form 51.36%, or approximately half, of the country's GDP. On the other hand, at 72.87%, Korea has the highest number of LCY bonds issued by corporations, expressed as a percentage of GDP, and at only 2.89%, Indonesia shows the lowest percentage. It is to be noted that Malaysian LCY bonds issued by corporations are 46.25% of the GDP.

As documented in Table 1, Japan is the champion; its total LCY bonds issued is 210.16% higher than its GDP, while Indonesia is at 18.74%. The difference between these two countries is about 191.42%. The table also shows that Malaysia's total LCY bonds-to-GDP ratio is 97.62%, which is 112.54% lower than that of Japan's. Therefore, the data suggest that as a developing country, Malaysia still has space to improve by introducing to the market more bonds issued by corporations. This will thus offer a variety of products in the financial market and indirectly expand the financial market. This research, therefore, intends to focus on the structured assets, or securitization, in Malaysia.

Financial markets conventionally consist of three primary types of instruments: (1) direct obligations of corporations and sovereigns, (2) derivatives, such as swaps and futures, and (3)

securitized and structured assets (Andrew Davidson, 2003). The market for securitization has developed drastically since its beginnings around three decades back, with the aggregate extraordinary issuance of securitized products expected to reach US\$9 trillion before long (Vinod. K, 2006). In particular, the entry of new originators from new regions into the market and new utilisations of securitization by past conventional financial products, are keeping the market energetic and dynamic. Researchers such as Vink and Fabozzi (2009), who are experts in the field of securitization area, studied the determinants of primary market spread and they found that spread can be explained in terms of credit rating and bond market conditions. Still, these studies were done in the United States and Europe. Little is known about the determinants of primary market spread for developing securitization in Malaysia. This researcher would like to fill the gap by conducting this study. This paper intends to analyse the determinants that contribute to the primary market spread for securitization in Malaysia at three different levels: firm-level, domestic macroeconomic level, and global macroeconomic level.

Literature Review

Securitization can be referred to as a process of converting a financial relationship into a transaction (Ali et al 2013). A loan to a firm is considered as a financial relationship, but when the company loans transfer out or convert to tradeable bonds, the relationship changes to a transaction. The creation of stock or shares is an example of a financial relationship that represents ownership of a particular corporation. Likewise, a bond is another example of a financial relationship whereby a commercial piece of paper issued by a corporation is understood to be an example of a transaction since it is a trade debt. As a result, securitization is categorised as a transaction in a corporation since securitization involves transferring assets out from the company. However, securitization carries a more specified meaning nowadays in capital markets in order to differentiate it from other financial instruments in the market. A securitization transaction allows corporations to “finance” the company’s activities in a unique way aside from using the traditional methods of financing (Bakri et al 2015). The word “finance” does not refer to the traditional way of borrowing but to “by the sale of assets” of the company.

The calculated improvement of the ABS advertised in Malaysia can be traced back to 1986 when Cagamas Berhad, the National Mortgage Corporation was established to advance the secondary home loan market in Malaysia (Bakri et al 2014). It was set up to work as a go-between among banks and fund organisations, the prime money lenders and the financial specialists who were looking for advanced term ventures. The securitization of the housing credits further enhanced liquidity in managing the banking system and gave fluid, superb paper to the market. Since 1st July 2000, the Securities Commission (SC) Malaysia has been the sole government agency with the power to approve and authorise all private debt

securities other than securities issued by unlisted entertainment clubs. To encourage the issuance of ABS in the Malaysia capital market, SC Malaysia issued the Guidelines on the Offering of Asset-Backed Debt Securities on 11th April 2001. The ABS Guidelines set out clear and straightforward criteria for securitization exchanges as required by SC Malaysia following segment 32 of the Securities Commission Act 1993.

SC Malaysia not only issued the guidelines on the offering of Asset-Backed Securities but also guidelines on *sukuk*. Firms need to appoint *Shariah* advisors for approval of *sukuk* in Malaysia as compliance with the Islamic perspective of funds or staying away from *riba* or interest is required. The assets pool in *sukuk* must be compliant with Shariah law. When the value of the pool of assets increases, the *sukuk* will also increase in value. This means that when *sukuk* is sold, the ownership of the assets that back *sukuk* are also sold.

Methodology

This study uses secondary market data on securitization in Malaysia between 2004 and 2014. The primary source for securitization is RAM Holdings Berhad, previously known as Rating Agency Malaysia (RAM) which was rebranded in November 1990. RAM Holdings is a leading provider of independent credit ratings, research, risk analysis, training, credit information and bond pricing. The forecasted extend from (Vink, 2009) variables could be considered to determine primary market spread, as extracted from the literature review. This study includes debt-to-equity, return on equity, firm size.

Therefore, this study specifies the general estimation model as follows:

Model 1

SPREAD = f (Debt-to-Equity, Return on Equity, Firm Size)

$$\ln SP_{it} = \alpha_n + \beta_1 \ln DE_{it} + \beta_2 \ln ROE_{it} + \beta_3 \ln FS_{it} + \varepsilon_{it}$$

where *SP* is Spread, *DE* is Debt Equity, *ROE* is Return on Equity, *FS* is Firm Size, α_i is the constant term, while β is the slope coefficient and ε_{it} is the error term where *i* stands for the *i_{th}* firm and *t* for the *t_{th}* period.

H₁: Firm Debt to Equity has a positive and significant relationship securitized firms' spread.

H₂: Firm Return on Equity has a negative and significant relationship with securitized firms' spread.

H₃: Firm Size has a negative and significant relationship with securitized firms' spread.

Results

This section records the analysis of 562 samples for their firm spread in securitised firms in Malaysia. Based on the collected data, all the factors were analysed using descriptive statistics and the mean and standard deviation were obtained to determine which factors most affected spread. The function of mean is to explore the relationship while the standard deviation is used to explain the extent of spread of the numerical data. This links to identify the factors and spread in securitization in Malaysia and to find the most influential factor in the spread of securitized firms in Malaysia.

Descriptive Statistic Analysis

Descriptive statistics quantitatively explain the primary or basic characteristics of a collection of data. They present simple summaries and measurements regarding the sample collected. Descriptive statistical analysis can be divided into two categories: measures of central tendency and measures of variability. Mean and median are included in the measures of the central tendency group, and maximum, minimum, standard deviation, Kurtosis and Skewness under the measures of the variability group. Descriptive statistics are different from inferential statistics in that the former's objective is to summarise the data set quantitatively without employing inferences regarding the population. It also does not intend to use the data to make inferences about the population from which the data are collected. The descriptive analysis of Model 1 is discussed below:

Table 2: Descriptive statistics on independent variables of model 1

	SP	DE	ROE	FS
Mean	268.77	1.48	0.11	3.25e+08
Median	231	0.51	0.10	5006562
Maximum	1014	21.34	0.49	1.77e+09
Minimum	-9	0.10	-0.24	5221.13
Std. Dev.	169.40	2.93	0.08	5.50e+08
Skewness	1.53	3.64	1.41	1.51
Kurtosis	6.09	17.24	11.47	3.62

Table 2 presents the descriptive statistics of Model 1 on the primary market spread from 2004 to 2016. Mean of debt to equity shows 1.48, while the median is 0.51. The highest value of debt to equity is 21.34, and the lowest is 0.10. Return on Equity mean is 0.11, and the median is 0.10. On Return of Equity, the highest value is 0.49, and the lowest value is negative 0.24. Mean of firm size is RM325 million, and the median is RM5 million. The largest firm size is RM1.77 billion, and the smallest firm size is RM550 million.

The results of standard deviation exhibit that the debt to equity is 2.93, the return on equity is 0.08, and the firm size is RM550 million.

Although the normality test shows that none of the variables data in the primary markets are normally distributed, all the variables have a Skewness result of more than 0.00, and Kurtosis results are more than 3.00. The highest Skewness among the variables is debt to equity at 3.62, and the lowest is Return on Equity at 1.41. However, the lowest Kurtosis is firm size 3.62, and the highest Kurtosis is debt to equity.

Table 3: Normality test of model 1

	Kolmogorov-Smirnov		Shapiro-Wilk	
	D	P-value	W	Prob>z
SP	0.12	0.00	0.89	0.00
DE	0.34	0.00	0.46	0.00
ROE	0.10	0.00	0.85	0.00
FS	0.35	0.00	0.63	0.00

Based on Table 3, the Kolmogorov-Smirnov Goodness-of-Fit test shows that firm size has the highest value at 0.35 among other variables, and the lowest value is Return on Equity at 0.10. The lowest value based on the Shapiro-Wilk test is debt to equity at 0.46, and the highest value is 0.89.

Multicollinearity Test

The multicollinearity test is a statistical occurrence where two or more explanatory variables in a multiple regression model are highly connected, or in other words, the predictor variables have a high correlation between them. Therefore, multicollinearity is a type of disturbance that will make the data inaccurate. This section shows the consequences of the multicollinearity test using the Variance inflation factor (VIF) and Variance-covariance (VCE) matrix methods. The results (from Model 1 to Model 6) are presented in Table 4, which show the outcomes of collation for variable series on the primary market spread.

Table 4: VIF of model 1

	VIF
lnDE	1.07
lnROE	1.03
lnFS	1.04

As presented in Table 4, all variables are below 10, which means that there is no collinearity problem. The highest value is 1.07 for debt to equity, and the lowest value is 1.03, which is a return on equity.

Table 5: Correlation of independent variables of model 1

	lnDE	lnROE	lnFS
lnDE	1		
lnROE	-0.17	1	
lnFS	-0.18	0.01	1

Table 5 shows the results of correlation on the variable series of Model 1. The results illustrate that debt to equity has a very low negative correlation with return on equity and firm size, whereas return on equity also has a very low positive correlation with firm size. It can be concluded that none of these variables are linearly correlated.

Estimation Results on Independent Variables Model

From Table 6, it can be concluded that per the Hausman test, the random effect model is the appropriate model. The results are more or less consistent between random and fixed effect estimators. The above estimation output exhibits that the coefficient for debt to equity and firm size are negatively significant at 0.01 levels. In contrast, the return on equity is positively significant at 0.01 level for pooled OLS. As for the fixed effect, debt to equity is significant at the 0.01 level. The difference in the sign of the coefficients indicates that the results of this study differ from the theories and past research by Nakashima and Saito (2009).

Likewise, the significant negative relationship at 0.01 level of debt to equity is also not consistent with the findings of Collin-Dufresne et al. (2001), Bhojraj and Sengupta (2003) and Psillaki, Tsolas and Margaritis (2010), who all found positive relationships between spread and debt to equity. However, recent research carried out in Malaysia by Fabozzi (2006 cited in Che-Yahya et al. 2016 and Bakri et al 2018) argued that if a firm has higher capital, it will generate greater chances of growth in the future. As a result, the issuer's growth opportunities may be the reason that there is a negative relationship between debt to equity and the primary market spread in Malaysia.

It is interesting to note that, per the pooled OLS, the significant positive relationship at 0.01 level between a return to equity and primary market spread in Malaysia is different from the findings of Che-Yahya et al. (2016). Although both fixed effect and random effect models exhibited negative relationships between return on equity and the spread of primary market securitization in Malaysia, it is not significant at any level. This means that the return on

equity may not be the dominant determinant that contributes to the primary market spread in Malaysia.

Table 6: Estimation results on independent variables of model 1

	Pooled OLS	Fixed Effect	Random Effect
Constant	-424.0562***	43.4116	40.8153
	(-4.22)	(0.90)	(0.87)
lnDE	-5.7465***	-6.3426***	-6.2428***
	(-9.36)	(-10.88)	(-10.95)
lnROE	99.1267***	-1.8728	-1.3381
	(4.52)	(-0.18)	(-0.13)
lnFS	-0.0121***	0.0216	-0.0034
	(-3.29)	(1.02)	(-0.39)
BP-LM	762.57***	-	-
Hausman	-	-	9.40**
R²	0.1790	0.2208	0.2183
Adjusted R²	0.1745	-	-
Root MSE	0.3867	-	-
F-Statistic	40.54***	44.50***	
Walk Chi Square	-	-	131.51***
No of observation	562	562	562

* Note: Values in parenthesis () are t-statistic except for RE, which is z statistic.

***, ** and * indicate significance at 0.01, 0.05 and 0.10 level, respectively.

In the chosen random effect model, debt to equity is significant and has a negative relationship at 0.01 level while a return to equity and firm size is not significant. Furthermore, the value of R² for random effect is the independent variables explain 0.2183 of the variation in the dependent variable. According to the Hausman test, the random effect appears to be the best model to explain factors that affect spread for this model. This indicates that random effect is fit and valid for the data of Model 1 on primary market securitization in Malaysia.

This indicates that REM is fit and valid for the data of the Model on securitized firms in Malaysia. Based on the regression equation, there has calculated the statistical result;

$$\text{Spread}_{it} = 40.8153 - 6.2428\text{DE} + \epsilon_{it}$$

Conclusions

The empirical finding is based on the main and robust reveals that debt to equity (DE) has a negative relationship with securitization performance. Also, this research was validated by



the Vink model in securitized firms. The findings presented in this research have implications for securitized to contribute to the theoretical framework by finding out about the asset pricing of asset-backed securitized firms in Malaysia using panel data and analysis with STATA. This is because, in Malaysia, there is a lack of studies done on securitized performance using panel data. The limitation of this research, this study uses internal factors. However, there may be other external factors that can be tested, such as exchange rate, economic growth, external debt, or other internal factors such as non-performing loans and different financial ratios. It is therefore suggested that future studies can test other variables in securitization performance to enhance the findings.

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