

Does Diversification Strategy Explain Selection of Financing Choice

Wan Mohd Nazri Wan Daud, Norlia Mat Norwani & Nurul Fadly Habidin

Department of Economics, Faculty of Management and Economics
Universiti Pendidikan Sultan Idris, 35900 Tanjong Malim, Perak, Malaysia
Email: wan.nazri@fpe.upsi.edu.my

Abstract

Diversification strategy has been researched extensively in the fields of strategic management and finance. Nevertheless, there is still inadequate empirical research related to the role of diversification strategy on selection of financing choice. Moreover, there is inconclusive evidence among literature in this particular field. This study examines the effect of diversification on choice of financing among Malaysian public listed firms using Pearson Correlation for a sample of 76 firms during the period of 1994-2007. The evidence suggests that diversification strategy positively influences choice of financing. This possibly indicates that implementation of diversification strategy has an impact on how firms select its financing decision. Nevertheless, this evidence should be further examined using robust methodology to substantiate this outcome.

INTRODUCTION

The argument related to selection of financing decision starts with seminal work by Modigliani and Miller (1958). They propose that there is indifference in selection of equity or debt in perfect market condition. As there is no such market exists, thus few factors perhaps influences choice of financing of the firms. A number of theories evolved to explain the phenomenon; however, the result remains elusive. In an attempt to resolve this issue, Myers (1984) suggests the introduction of non financial variable to comprehend financing decision by the firms. This recommendation leads to the exploratory study by Barton and Gordon (1987) who used diversification strategy as a non financial variable. They then performed empirical study which produced positive outcome. Nevertheless, they further suggested that more studies to be done to substantiate their evidence particularly in developing countries. Therefore, this study is performed to provide more evidence on whether capital structure decision is affected by diversification strategy. In addition, evidence from developing countries such as Malaysia could shed some understanding on this issue.

LITERATURE REVIEW

Since empirical research on selection of financial decision performed by Barton and Gordon (1988), a number of studies were carried out in related field in various countries. Among them are studies done by Lowe, Naughton and Taylor (1994) and Akhtar (2005) in Australia, Chkir and Cosset (2001) and Singh, Davidson and Suchard (2003) and Kracaw, Lewellen and Woo (1992) in the United States, Menendez-Alonso (2003) in Spain, Lim, Das and Das (2009) in Singapore while Low and Chen (2004) perform the cross country study in developed and developing countries. However, mixed results are produced by the above studies in which some studies exhibit the choice of financing as explained by diversification strategy.

In the study by Lowe *et al.*, (1994), their evidence is similar to Barton and Gordon (1988) that unrelated strategy has more debt in its capital structure as evidence by a strong relationship between these variables. The evidence possibly implies that when a firm grows, it needs to acquire new assets that may have an impact on financing decision. The situation occurs as the firm needs funding to purchase assets. When this issue is examined by Chkir and Cosset (2001), they classify firms into four different types. The results show that diversification strategy affects the capital structure decision. The possible reason for such evidence could be diversification strategy requires a huge amount of capital to implement. Therefore, borrowing becomes an option for a firm to meet its financial requirement.

Apart from that, Kochhar and Hitt (1998) further test the mentioned relationship and their evidences provide more support to the study by Barton and Gordon (1988). Interestingly, their findings show that the said relationship is reciprocal between financial choice and diversification strategy. Therefore, this finding gives new dimension to the study in examining that relationship. Therefore, related firms might prefer to use equity financing as equity investors have the ability to monitor firms' activities to protect their capital. Meanwhile, debt financing might not be appropriate for related strategy as investors may not be able to monitor the activities of the firms and their money would perish if the firms become bankrupt.

In contrast, unrelated firms should use debt financing to acquire less strategic assets as Kochhar and Hitt (1998) argue that the lenders have less expected loss. It could be unrelated firms that have the ability to generate cash flow from multiple business units even if there are one or two units that are not performing, there are more other units that can support the whole firm. Therefore, unrelated firms have less chance to enter bankruptcy due to the support from various business divisions.

Meanwhile, Low and Chen (2004) examine the relationship between diversification strategy and capital structure using cross-country data in 30 developed and developing countries. Their evidences indicate a significant relationship between variables in which diversification strategy provides flexibility for the firms to reduce business risk, enabling firms to utilize more debt.

Belkaoui and Bannister (1994) demonstrate a dynamic relationship between diversification strategy and capital structure suggesting that firms require a different capital structure for different types of diversification strategy. They suggest that debt acts as a governance tool to which it is more suitable for investment that requires high allocation of resources. Debt capacity is higher in unrelated firms due to high allocation assets. However, that trend is not observed in the firms that require low allocation assets such as those in related firms.

Despite a strong support on the existence of a relationship between diversification strategy and capital structure, some other studies debated on the subsistence of the said relationship that finding. These studies did not show significant relationship between these two variables (Menendez-Alonso, 2003; Syed and Rao, 2004 and Lim *et al.*, 2009). Menendez-Alonso (2003) is unable to find a significant relationship even after different alternative proxies of capital structure are used such as total debt, long term and short term. Their evidence does not support any prediction as explained by the co-insurance effect, transaction cost and agency theory.

When Syed and Rao (2004) conducted their study in the United States, they also show almost similar evidence that no relationship exists between the variables. They suggest that capital structure decision is influenced by the nature of industry and not diversification strategy. Nevertheless, they speculate that unrelated firms might not fully exploit their capabilities to use more debts in the capital structure.

More explanation on this issue is provided by Lim *et al.*, (2009) who suggest that related and unrelated strategies do not influence the level of debt financing. Thus, diversification strategy does not affect the capital structure decision. It could be the country's characteristics that may have more influence on the capital structure decision. For instance, the size of Singaporean firms is much smaller than those in the United State. Therefore, the small size firms influences the level of debt in the capital structure in Singapore.

METHODOLOGY

This research begins with data gathering from reliable sources such as the Bursa Malaysia, Worldscope, Thomson Financial Banker and Datastream databases. The firms are later identified and classified into related and unrelated groups based on some recognizing measurements. A dummy variable is used to differentiate between these two types of strategy, (related = 0; unrelated = 1). Other data such as financial information has been collected from Worldscope. Several tests are done to measure normality, stability and reliability of the data through normality testing and stationary test. Each of these tests is important to ensure reliability of the data. Subsequently, descriptive statistics that summarize the profile of data are analyzed together with the correlation between variables.

Sources of Data and Procedures

The main sources of data for the analysis in this study are derived from Worldscope and Thompson Financial Banker. These databases provide detailed financial information on Malaysian firms. Apart from the two websites mentioned, the data for the study is also gathered from Datastream International and the firms' annual reports available online for the years 1999 to 2007. However, annual reports prior to 1999 (1994-1998) have to be manually collected from Bursa Malaysia's library.

The sample for this study comprises all public listed firms on the Main Board of Bursa Malaysia Berhad as on May 8, 2010. Initially, there are 638 public listed firms, however, the study immediately excluded 38 firms from the financial sectors in order to maintain the consistency with previous studies in various countries. In addition, the financial sector is highly regulated under BASLE's accord (Ahmad, 2005) and firms' characteristics and level of debt in the capital structure in this industry differed from other industries (Lins and Servaes, 2002). Finally, there are only 76 firms left in this sample after exclusion of those firms failed to meet certain criteria set for the purpose of this study such as distress firms and missing data. The coverage of this study could not be extended beyond 2007 as it will further reduce number of firms as some firms have been taken private or delisted by the major shareholders.

Measurement of Concepts

1. Diversification Strategy

Firms in this study are collected based on procedure by Syed and Rao (2004) who suggest two types of relatedness strategies; related and unrelated strategy. This classification of the strategy is also used by various studies. Among them are Lins and Servaes (2002) and, Mishra and Akbar (2007). Firms are classified into either related or unrelated based on total sales. This study defines related strategy as the strategy applied when the firm earned more than 90% of total sales from one-industry segment. Otherwise, it is considered as unrelated strategy.

2. Capital Structure

The capital structure is usually described as selection of debt over equity financing. Nevertheless, choice of capital structure depends on many factors such as corporate and personal tax, inflation and exchange rate, attitudes toward risk and return, regulatory and ownership pattern (Aggrawal, 1990). Therefore, many theories have been established to explain the capital structure decision such as trade off, market timing and pecking order theories. Financing decision is important for the firms as financial resources are derived from the right hand side of the balance sheet. With financial resources, firms decide to purchase assets for their business.

There are many proxies used in the literature to identify debt ratio to establish the relationship between debt and performance. A widely used definition for debt ratio is total debt over total assets because total debt comprises of short and long term debts that have been used by firms for their business expansion.

$$TDA = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

3. Size

Mitton (2007) mentions that large firms have more debt than small firms, this situation indicate the capability of large firms to raise more external financial resources. Moreover, the default risk for a large firm is lesser as this firm is usually more diversified as compared to a small firm (Eriotis, 2007). Mitton (2007) used the following definition to estimate the firms' size.

$$\text{Firm Size} = \text{Logarithm}(\text{Total assets})$$

4. Cash Flow

Jensen (1986) suggests that excess cash flow could lead firm to implement unrelated strategy. The situation indicates that firms use its own internal generated financial resources to diversify their earnings. With excess cash flow, firms also could afford to adopt more debts in their capital structure. High level of debt would assist firms to discipline managers from taking the diversification route. Galvan and Pindado (2007) defines cash flow ratio as follows:

$$\text{Cash Flow Ratio} = \frac{\text{Net Income} + \text{Depreciation} + \text{Ammortization} + \text{Depletion}}{\text{Total Assets}}$$

5. Liquidity

Healthy level of liquidity enable firms to meet short term obligation, thus, it would avoid any default of payment. In contrast, the inability of the firms to meet their obligations may disrupt their business operation. This is also consistent with another study by Chathoth (2002) who controlled firm's liquidity in order to understand the relationship between diversification strategy and debt. The following definition is used to control liquidity effect.

$$\text{Current Ratio} = \frac{\text{Current Liabilities}}{\text{Current Assets}}$$

Steps of Testing

As mentioned earlier, collected data need to be checked for validity and reliability in order to be used for the present study.

a. Normality

For the data used in this study, measures of skewness and kurtosis are calculated. Lack of symmetry in the distribution of data is measured by skewness (Eview Manual, 2006). Skewness is a measure of the asymmetry of the distribution of the series around its mean. Skewness is computed as the average of the cubed deviations from the mean and is usually measured by the ratio of this value to the standard deviation cubed; that is,

$$S = \frac{N^2 m_3}{(N-1)(N-2)\sigma^3}$$

Where:

S = measure of skewness

N = number of returns

$$m_k = \frac{\sum_{i=1}^N (R_t - \mu)^k}{N}$$

R_t = *i*th return

μ = arithmetic mean of returns

σ = standard deviation of returns

In a normally distributed process, the skewness coefficient is close to zero. The standard error of the skewness coefficient is $\sqrt{(6/n)}$ for a random sample of size *n* from a normal distribution. Positive skewness means that the distribution has a long right tail and negative skewness implies that the distribution has a long left tail.

Kurtosis measures the peakness or flatness of the distribution of the series. Estimates for the standard error are of little value if the distribution has high kurtosis. A few large observations or outliers can affect the estimate of skewness. It is quite likely that the skewness estimate is biased by the presence of kurtosis in the sample period. For a normally distributed process, the kurtosis coefficient is measured by;

$$K = \frac{N^2(N+1)m_4 - 3(N-1)m_2^2}{(N-1)(N-2)(N-3)S^4}$$

Where:

K = measure of kurtosis

S = measure of skewness

N = number of returns

$$m_k = \frac{\sum_{i=1}^N (R_t - \mu)^k}{N}$$

R_t = its return

μ = arithmetic mean of the returns

σ = standard deviation of returns

The kurtosis coefficient K should be equal to three (3) with a standard error of $\sqrt{(24/n)}$. If the kurtosis exceeds three (3), the distribution is peaked (leptokurtic) relative to the normal; if the kurtosis is less than 3, the distribution is flat (platykurtic) relative to the normal.

To test whether the series are normally distributed, the Jarque - Bera test statistic is adopted. The test statistic measures the difference of the skewness and kurtosis of the series with those of the normal distribution. The statistic is measured as:

$$Jarque - Bera = \frac{N - k}{6} \left[S^2 + \frac{(K - 3)^2}{4} \right]$$

Where S is the skewness, K is the kurtosis, and k represents the number of estimated coefficients used to create the series. Under the null hypothesis of a normal distribution, the Jarque-Bera statistic is distributed as χ^2 with two (2) degrees of freedom. The reported probability is the probability that a Jarque-Bera statistic exceeds (in absolute value) the observed value under the null hypothesis.

b. Mann-Whitney U-Test

The Mann-Whitney test is the non-parametric technique of a pooled two sample test. It assumes that the study has two independent samples from two populations. The assumptions under Mann-Whitney test are that random samples from populations, independence within samples and mutual independence between samples and measurement of scale is ordinal. This test is used in the case where the value within the sample does not follow the normal distribution or when the distribution of values is unknown (Milenkovic, 2011). This means that it can be used to compare means between two populations using two independent samples in which there are different in terms sample data among two different groups (Milenkovic, 2011). The study can calculate the expected score to test for significance as follows:

$$\mathcal{L}(J) = \mathcal{K}\epsilon(K + 1) / 2 \mathcal{L}(J) = \mathcal{K}\epsilon(K + 1) / 2$$

Where:

$\mathcal{L}(J)$ = the expectation of J

$\mathcal{K}\epsilon$ = the sample size of the sample being tested

K = the total sample size $K = k1 + k2$, it is difference between the observed and predicted rank sums is best approximated through the use of a normal distribution, the area under the curve of a z-distribution. The numerator of the z score is as usual, but the denominator becomes as follows:

$$z = \frac{J - \mathcal{L}(J)}{\sqrt{\mathcal{K}1 \mathcal{K}2 (K + 1) / 12}}$$

The Mann-Whitney Test examines the differences between two independent groups on a continuous scale. It is significantly different with other nonparametric test especially on Wilcoxon rank test (Milenkovic, 2011).

FINDINGS

The descriptive statistic in Table 1 is used to check normality of the data. The expected value of skewness test should be equal to 0 and the kurtosis value should not exceed three so that the data can be assumed to be normal. Besides, the value of Jarque Bera should not be significant ($p \leq 0.05$). By meeting the said assumptions, the sample data is identified as efficient, unbiased and consistent. Meanwhile, violation of the assumption means the sample data is not normally distributed. The descriptive information on total debt (TDA), cash flow (CF), liquidity (LIQ), strategy dummy (SD), and firm size (SIZE) is provided in Table 5.1.

Table 1 Descriptive Stat

	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis	Jarque-Bera
TDA	0.4054	0.3969	0.9456	0.0206	0.1956	0.2059	2.2031	33.1288*** (0.0000)
LIQ	0.0389	0.0325	1.6317	-1.7435	0.3628	0.0672	6.1972	421.5433*** (0.0000)
CF	0.0783	0.0662	0.7071	-0.4212	0.0846	1.0834	12.4485	3868.411*** (0.0000)
SIZE	7.0322	6.9207	11.1232	3.8344	1.3181	0.4813	3.2031	39.8432*** (0.0000)

Continue... (Table 1)

SD	0.579	1.000	1.000	0.000	0.494	-0.3198	1.1022	165.0973*** (0.0000)
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Note: Figure in parenthesis is the ρ value

***Significant at 0.01 level

Table 2 exhibits the differences between related and unrelated strategy by using mean analysis. Mann Whitney U test is used as the sample size of related and unrelated are not equal. The result shows that related strategy is positively related to risk adjusted and accounting measure of performance.

Table 2 Comparison between related and unrelated firms

Variables	N	Mean Rank	Sum Of Ranks	Z-Score	2-tailed
TDA	416 (0)	455.56	189512.50	-3.658	0.000***
	572 (1)	522.82	299053.50		
LIQ	416 (0)	513.02	213417.50	-1.740	0.082*
	572 (1)	481.03	275148.50		
CF	416 (0)	650.00	270398.50	-14.607	0.000***
	572 (1)	381.41	218167.50		
SIZE	416 (0)	379.86	158020.50	-10.769	0.000***
	572 (1)	577.88	330545.50		

Note: ***Significant at 1 percent level, **Significant at 5 percent level, *Significant at 10 percent level+label 1 = unrelated strategy; 0 = related strategy

The above result clearly shows that unrelated firms have higher debt exposure as compared to related firms. A number of studies have mentioned that unrelated firms use excessive debt in their capital structure (Sambharya, 2000; Daud *et al.*, 2009). Nevertheless, Syed and Rao (2004) argue that debt level depends on the nature of industry the firm is in.

As for size, unrelated firms are bigger than related firms. Firms' size usually reflects more resources and capabilities that the firms have. It seems to be consistent with capital spending whereby unrelated firms which relatively have bigger size may spend more on capital investment. In contrast, cash flow and liquidity in related firms are better than in unrelated firms. This is contrary to the suggestion by Chatterjee and Wennerfelt (1991) who emphasize that unrelated firms should have higher liquidity compared to focused firms in order to meet debt obligations. Poor performance of unrelated firms could probably be due to insufficient liquidity and cash flow. Kim, Hoskisson, Tihanyi and Hong (2004) support this proposition by stating that unrelated firms such as the Hyundai Group of Korea performed poorly due to the poor liquidity problem.

Table 3 Pearson's correlations

	TDA	LIQ	CF	SIZE
LIQ	-.134(***) .000			
CF	-.155(***) .000	.066(**) .037		
SIZE	.249(***) .000	-.044 .165	-.056(*) .079	
SD	.110(***) .001	-.029 .356	-.418(***) .000	.295(***) .000

Note: * ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.10 level (2-tailed). ** Correlation is significant at the 0.05 level (2-tailed).

The above Table 3 demonstrates the relationship between variables using Pearson correlation. The main focus of this study is to examine the relationship between diversification strategy and debt. The result shows positive and significant association with the mentioned relationship. This indicates that firms which pursue unrelated strategy incline to adopt more debt in their capital structure as compared to related firms. This is consistent with descriptive statistics that demonstrate unrelated firms have higher debt. The positive relationship could provide some understanding on selection of capital structure is based on choice of diversification strategy. Unrelated firms who diversify away from their current core business without insufficient skill and knowledge possibly rely more on financial resources especially debt financing. As internal generated fund may not enough to support their strategy to diversify beyond the scope of core industry, therefore, debt financing becomes an option to the firms. Debt financing is used to finance business expansion due to lower cost of capital compared to equity. Consuming equity financing might be costly for the firms as entering a new business venture without adequate core competency. Apart from that, this evidence could provide some supports to the findings by Barton and Gordon (1988) as well as Low and Chen (2004) whereby their result suggest for positive explanation on financing decision is caused by implementation of diversification strategy. Similarly, size also has positive influence on consumption of debt as demonstrated by the above result. This explains reason for large firms perhaps with more financial strength, consume more debt in their capital structure.

Nevertheless, the evidence from this study is inconsistent with earlier outcome where high level of cash flow could result in higher level of debt (Jensen, 1986). The result demonstrates that cash flow have a negative relationship with debt. This possibly indicates that firms with high cash flow decide to retire its debt as their stream of money could support their business operation. However, perception of high level of liquidity may lower debt might be supported with the recent outcome whereby there is negative influence of liquidity on debt.

CONCLUSION

The investigation of the effect of diversification strategy and debt on performance of firms is done by examining choice of financing that is explained by diversification strategy. The evidence from this study observes a significant trend that choice of financing is explained by diversification strategy. Unrelated firms appear to have a high level of debt compared to related firms, thus, it provides support that diversify away from core business require debt financing to back up those activities. However, this outcome should be supported by more robust methodology as well as evidence from other developing countries to substantiate this claim. The justification for that Syed and Rao (2004) suggest selection of capital structure is not influenced by diversification strategy. Nature of industry play crucial role in deciding selection of financing choice.

Other than the above factor, selection of capital structure could be decided by another factor such as size, liquidity and cash flow. Peyrefitte and Brice (2004) claim that firms can rely on liquidity in the development of products, thus, rejecting debt as a requirement to support the business operation. Size has a positive relationship with debt which suggests that large firms have higher levels of debt. Large firms usually can afford to consume more debts as it has more resources and capabilities. That could be the reason why unrelated firms have high levels of debt as compared to related firms. Other studies such as Daves, Ehrhardt, Kuhlemeyer and Kunkel (2000) and Eriotis (2007) also advocate that size has a significant influence on capital structure decision. Liquidity and cash flow seem to have a significant role on selection of capital structure. This imply that firms with high level of liquidity and cash flow could terminate or reduce level of debt due to sufficient of fund to support their business operation.

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