Does Corporate Diversification Induce Financing Choice?

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Abstract

This paper sets out to examine the effect of business diversification strategy on capital structure in Malaysia. The study segregates the firms into related and unrelated firms based on segmentation of Standard Industry Classification Code. It involes 76 public listed firms in Bursa Malaysia from 1994 to 2012. This research uses static panel data to determine the credible association between diversification strategy and choice of financing. The authors find that period fixed effect with seemingly unrelated regression produce better results to explain the relationship between independent and dependent variables. The results demonstrate that there is insignificant relationship between diversification strategy and capital structure. Robustness check on pre and post crisis data generate similar output. The potential contribution of this work lies in offering empirical evidence to test the previous held assumption that there is a significant relationship between corporate expansion and financing decision done by firms. Future research should explore the possibility by using international firms to investigate the association between those variables.

Keywords:

Corporate diversification, capital structure

INTRODUCTION

The selection of financing instruments, whether it is debt or equity, has been subject to extensive debates in literature that began with the seminal work of Modigliani and Miller in 1958. This issue has never been resolved and has led to a suggestion by Myers (1984) to include non-financial variables to understand the choice of financing made by firms. By adopting Myer's suggestion, Barton and Gordon (1987; 1988) introduced diversification strategy as a non-financial variable to explain financing decisions made by firms. Numerous other studies have followed in their footsteps to examine the relationship between diversification strategy and capital structure, among others (Amit and Livnat, 1988; Kracaw, Lewellen and Woo 1992; Lowe, Naughton and Taylor, 1994; Kochar and Hitt, 1998; Chkir and Cosset, 2001; Singh, Davidson and Suchard, 2003; Low and Chen, 2004; Akhtar, 2005; Lim, Das and Das, 2009; Rocca, Rocca, Geraceb and Smark, 2009, Junior and Funcal, 2013).

Usually, there are two types of corporate diversification strategies commonly used in developing countries that are studied to assess their impact on capital structure. These are related and unrelated diversification (Daud, Salamuddin and Ahmad, 2009; Lins and Servaes, 2002; Ramaswamy, Li and Veliyath, 2002; and Tongli, Ping and Chiu, 2005); related

diversification is usually associated with a low degree of diversification, while unrelated diversification is a high degree of diversification.

Some studies in developed countries have applied a similar method by categorizing corporate diversification strategies and establishing their relationship with the level of debt (Syed and Rao, 2004; and Hitt, Ireland and Hoskisson, 2005). Nevertheless, there is mixed evidence that some of them supported earlier findings by Barton and Gordon (1988) that show that there is a relationship between diversification strategies and financing decisions (Kracaw, et. al., 1992; Murphy, 1992; Lowe, et al., 1994; Prasad, Bruton and Merikas, 1997; Kochhar, 1997; Rocca et. al., 2009). The results show that financing choices are influenced by the firms' diversification strategies. This is a possible reason for why results from several studies indicate that a low level of debt is associated with a low degree of diversification. In contrast, an excessive level of debt correlates with a high degree of diversification (Barton and Gordon, 1988; Chkir and Cosset, 2001; O'Brien, 2003; Low and Chen, 2004; Ajay and Madhumathi, 2012; Qureshi et al., 2013).

Therefore, this study is conducted to explain how diversification strategies have an impact on the choice of financing. This paper extends prior analyses of diversification strategies and financing decisions over an 18-year study period. It focuses on how different effects of related diversification strategies over unrelated diversification strategies influence financing decisions.

This study examines the intensity of determinants on a selection of debt over equity for groups of firms. The sample is classified into two groups, which are related and unrelated firms. The model is estimated by using the panel data methodology in order to eliminate the unobservable heterogeneity. Specifically, we used the Static Panel Data Fixed Effect and Random Effect Estimation techniques for data analysis.

This study is structured as follows: Section 1 points out the theoretical perspectives applied to the analysis. Section 2 describes empirical evidence from the previous studies. Section 3 discusses the empirical evidence. Section 3 describes the data and empirical modeling use in this study. Section 4 shows the main findings of the study. Lastly, section 5 offers conclusion and several suggestions for management and for future research.

LITERATURE REVIEW

Prasad et al. (1997) observed that diversification strategies and financing choices are decisions that are simultaneously made to achieve a firm's specific goals. Hence, there is a link between diversification strategies and financing decisions. Murphy (1992) believes that the relationship between diversification strategies and capital structures depends on the management's behavior. There are differences in the management style of American and Japanese firms. American firms consider funding issues before implementing a diversification strategy, whereas Japanese firms initiate a diversification strategy before considering how they would fund that strategy. Management style may depend on internal as well as external factors, such as the availability of resources and environmental conditions.

When Chkir and Cosset (2001) examined this issue, they classified firms into four different types. The results of their study show that diversification strategies affect capital structure decisions. This is consistent with Hall's suggestion (1995). According to Hall, diversification strategies require a huge amount of capital to implement. Therefore, borrowing becomes an option for a firm to meet its financial requirement.

A similar suggestion was made by O'Brien (2003), who claims that failure in determining the appropriate capital structure would result in ineffectiveness of the strategy being implemented by firms. This situation leads to a firm's inability to compete in their respective industries. This inability to compete arises due to the high levels of debt in capital structure that creates an inflexible position for the firms to seize any investment opportunities; this in turn causes poor performance.

This suggestion is supported by Low and Chen (2004) who examined the relationship between diversification strategies and capital structure using cross-country data in 30 developed and developing countries. Their evidences indicate a significant relationship between variables in which diversification strategies provide flexibility for the firms to reduce business risk and enable them to utilize more debt in their business.

Other studies indicate that the relationship exists due to non-controllable independent variables. Singh et al. (2003) demonstrate that diversification strategies are positively associated with debt financing. However, the relationship disappears when they control the independent variables. When independent variables are not controlled, the result is positive as if debt is the only financing choice available. Therefore, any increase in degree of diversification will result in an increased level of debt. However, if firms have an alternative financing strategy, such as retained earnings and cash flow, they may consider that option by utilizing internal generated funds to intensify the degree of diversification strategy. This is a reason why debt is not significant or even negatively related to diversification strategies. Firms should obtain funding at the lowest cost. Funds could be derived from internal sources in order to beat competitors, particularly in a competitive business environment, as high debt could limit the ability to maneuver their business plans.

Another essential point put forward by Kochhar and Hitt (1998) is that firms should use debt financing in acquiring less strategic assets in particular. Lenders should be less concerned about potential losses due to bankruptcy of a firm due to a high degree of diversification strategies. These types of firms usually have more business units to generate adequate cash flow so that even if one or two units are not performing, the other business units can support the operation of the firms. Thus, a high degree of diversification allows firms to have less fear of entering bankruptcy, as support can be garnered from their various business units. Kochhar and Hitt (1998) further argue that diversification strategies are performed due to the imperfection in capital markets. Another way to reduce that imperfection is through proper selection of capital structure.

On the other hand, other studies did not find any relationships between diversification and choice of financing (Menendez-Alonso, 2003; Syed and Rao, 2004; Lim, et. al., 2009; Junior and Funcal, 2013). This evidence may suggest that financing decisions are not influenced by diversification strategies implemented by firms.

There is a possible scenario that the nature of industry influences selection of debt over equity, which could explain why the food industry has a lower level of debt compared to the automotive industry (Syed and Rao, 2004). Firms may also have a positive cash flow and high profit, which could be used to fund their business activities. Instead of using debt financing, they use internally generated funds to diversify their business. This results in a low level of debt in the firms (Junior and Funcal, 2013). This is a possible reason why certain firms prefer to utilize internal funds such as retained earnings as their first choice of financing to meet capital requirements. If that fund is insufficient, then firms might use equity financing instead of debt financing to support their capital needs. This situation contrasts with the pecking order

theory that explains the behavior of firms that follow certain steps in taking financing to fund their business activities. Instead, it is more consistent with Barton and Gordon's observation (1988). According to them, that level of debt in capital structure is dependent on the behavior of the manager.

Menendez-Alonso (2003) was unable to find a significant relationship even after different alternative proxies of capital structures, such as total debt, long term and short term were used. Different measures to define diversification, such as the Herfindahl index, entropy measure and control for independent variables were also used. The evidence did not support any predictions as explained by the co-insurance effect, transaction cost and the agency theory.

Firms with a high level of debt do not have the flexibility to have an innovative dynamic environment, as debts in capital structure can add extra transaction costs to the firms. This situation does not emerge in stable environments whereby the level of debt creates more innovations to the firms. Nevertheless, related diversification does not influence capital structure decisions in any environmental condition. It could be that related diversification is able to raise equity financing cheaper than debt financing. Another explanation could be that related firms have retained earnings or cash flow that can be used as their financing options (Lim et al., 2009).

Usually, there are two types of corporate diversification strategies that are commonly used in most studies in developing countries to assess the impact on capital structure. These are the related and unrelated strategies (Daud, Salamuddin and Ahmad. 2009; Lins and Servaes, 2002; Ramaswamy, Li and Veliyath, 2002; and Tongli, Ping and Chiu, 2005). In addition, some studies in developed countries also apply similar methods to categorize corporate diversification and establish the relationships with levels of debt (Syed and Rao, 2004; and Hitt, Ireland and Hoskisson, 2005). Hence, the similar methods for categorizing diversification strategies are used in this study.

The role of diversification in the perspective of related and unrelated strategies and its influence on capital structure decisions are examined and presented in Table 1. This table is used to summarize the findings in selected literature to highlight the relationship between variables used in this present research.

Table 1: Summary of literature review

Hypothesis	Author(s)	Country	Data Period	Estimated Results
Has a relationship	Ajay and Madhumathi (2012)	India	2004-2010	SD = ↑TDA (DCs) SD = ↓TDA (MNCs)
	Majumdar and Sen (2014)	India	1988-1993	SD = ↑TDA
	Roccaa et. al. (2009)	Italy	1980-2006	SD = ↑TDA
	Akhtar (2005)	Australian	1992-2001	SD = TDA varies depending on sample period for DCs and MNCs
	Lowe, Naughton and Taylor (1994)	Australia	1984-1988	SD = ↑TDA
No relationship	Junior and Funchal (2013)	Brazil	2009-2011	SD ≠ TDA
	Daud (2014)	Malaysia	1994-2007	SD ≠ TDA
	Menendez- Alonso (2003)	Spain	1991-1994	SD ≠ TDA

DATA AND EMPIRICAL MODELING

This study started with data collection from the Worldscope, Thomson Financial Banker and Data Stream databases. The firms' annual reports for the years 1999 to 2012 were also available online on Bursa Malaysia's website. However, annual reports before 1999 (1994-1998) were manually collected from Bursa Malaysia's library. The firms were then classified into related and unrelated groups based on some recognizing measurements. A dummy variable was used here to differentiate between these two types of diversification strategies (related = 0; unrelated = 1).

There were only 76 firms left in the sample for the study period of 1994 to 2012. Out of 76 firms, there were 32 related firms and 44 unrelated firms. On the other hand, the period of study could not be extended beyond 2012, as it would result in a further reduction of the number of firms in the sample. The study looked at firms that implemented consistent diversification strategies (related or unrelated) over the 18 years of study. This is because firms require some time to comprehend whole issues before those diversification strategies bring benefit to them (Daud, 2014).

The total liabilities over total assets measure the dependent variable, debt ratio (Abor, 2005). This ratio reflects capital structure in the firms, which represents the choice of debt over equity. The total liabilities represent short-term or long-term debts used by the firms to finance business activities. Meanwhile, diversification strategies are the main independent variables to test the relationship with capital structure. Diversification strategies are classified into two categories, which are related and unrelated, based on total sales. If a firm earns more than 90% of total sales from one-industry segment, it is called a related strategy. The opposite occurrence is known as an unrelated strategy. This method is consistent with Lins and Servaes' findings (2002). This approach was extensively used in other studies in developing and developed markets (Mishra and Akbar, 2007; Daud, et al., 2009, Villalonga, 2004).

This study uses a model suggested by Gujarati and Porter (2008) to find the links between each strategy; related and unrelated to capital structure by incorporating dummy variables. The regression model below shows the relationship between diversification strategies and capital structures:

$$TDA_{it} = \alpha_{0i} + \beta_1 size_{it} + \beta_2 cf_{it} + \beta_3 liq_{it} + \beta_4 ce_{it} + \beta_5 sd_{it} + \bar{e}_{it}$$

TDA represents the level of debt used as an independent variable varying across section and time. It is proxied by total debt over total asset. Meanwhile, size, cf, liq, ce and sd are the size of the firm, its cash flow, liquidity, capital expenditure and diversification strategies (related or unrelated category) with β1, β2, β3, β4 and β5 as its coefficients that are to be estimated. α_{0i} and $\bar{e}_{it}$ represent unknown intercepts for each entity and error terms respectively. Size is proxied by the logarithm of total assets, cash flow (CF) is proxied by net income, depreciation and amortization over total assets, liquidity (LIQ) is proxied by current assets over current liabilities, capital expenditure (CE) is proxied by investment in fixed assets over total assets, and diversification strategy (SD) used a strategy dummy to classify firms in which 1 is for unrelated strategy and 0 is for related strategy.

FINDINGS

This section presents the results obtained by estimating the model using static panel data with fixed effects and the random effects estimation method. Table 2 shows the findings of this study. Before the results were presented as indicated in Table 2, several tests, such as normality, multicollinearity, heterocedasticity tests as well as the Hausman test were performed. After performing the Hausman test, the fixed effects indicated that there is a more robust estimation method for explaining the impact of debt on the degree of diversification. However, all three models were presented using panel regression with no effect, fixed effects and random effects. The regression displayed a statistically non-significant relationship between diversification strategy as measured by a dummy variable and the level of corporate debt. Corporate expansion would then seem to offer no benefit for the firms in the sample.

Table 2: Determinants of financing decisions using three estimation methods

Variables	POLS	FE	RE
Constant	0.1851***	0.0395	0.1851***
	(0.0330)	(0.0510)	(0.0331)
CE_{it}	-0.0003	-0.0013	-0.0003
	(0.0017)	(0.0011)	(0.0017)
LIQ_{it}	-0.0616***	-0.0396***	-0.0616***
	(0.0164)	(0.0036)	(0.0164)
CF_{it}	-0.3347***	-0.2681***	-0.3347***
	(0.0776)	(0.0333)	(0.0778)
$SIZE_{it}$	0.0362***	0.0577***	0.0362***
	(0.0047)	(0.0068)	(0.0047)
SD	-0.0102	-0.0299	-0.0102
	(0.0139)	(0.0335)	(0.0139)
Durbin Watson Test	0.1600	1.9450	0.1600
Prob > F	0.0000	0.0000	0.0000
F-statistics	20.7542	19.9165	20.7541
Adj. R^2	9.09%	24.57%	9.10%
No. obs	988	988	988

Note: Figure in parenthesis is the Standard Error
***Significant at 1 percent level
**Significant at 5 percent level
*Significant at 10 percent level

This result appears to be consistent with the findings of several other studies, among them being Menendez-Alonso (2003), Syed and Rao (2004), and Junior and Funcal, (2013). One possible explanation for the results is the firms in the sample might have generated adequate internal funds that were sufficient to support their business activities. Even though the level of debt was probably higher than in related firms, these firms possibly expanded their business by not relying on debt. Instead, they may have used internally generated funds.

A second possible explanation is the low level of indebtedness of Malaysian firms in the sample. The sample comprises of firms that already existed since 1994 that have gone

through stable and dynamic economic conditions. Thus, the firms' management had possibly learned something from their experience and repositioned their capital structures so that they would not jeopardize the firms.

A third possible explanation for the insignificant relationship between the variables is a less developed external capital market compared to developed countries. Firms in developed countries may have easy access to a cheaper rate of funds in the capital market compared to borrowing rates in financial institutions. However, firms in developing countries such as Malaysia may have some difficulties due to undeveloped capital markets. Thus, debt becomes a last resort for firms to obtain funds. Lim et al. (2009) explains that a country's characteristics are factors that influence choice of financing. Those characteristics include the role of the authorities in setting up capital markets, deciding on interest rates, and industry protection by the government that may induce levels of debt financing in the firms.

In developing countries that have less robust capital markets, firms may find certain restrictions to accessing external capital markets compared to those in more robust capital markets such as the United States. In countries that have developed capital markets such as the United States, firms can easily obtain funds through borrowing at cheaper rates to finance their business operations. Lim et al. (2009) do not observe this trend in Singapore, where neither related nor unrelated strategies have an impact on financing decisions. This supports the present evidence from this research. Environment conditions probably have a major influence on capital structure decisions. It could be so in Malaysia, where the economic environment is more stable after a crisis, when Malaysian firms experience improvements in their ability to access capital markets to obtain funding. This trend shows that corporate borrowing from capital markets grows significantly after a crisis. Capital markets may provide a cheaper cost of financing to firms to encourage them to raise more capital through borrowing.

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Meanwhile, the implementation of unrelated strategies creates an internal capital market, allowing firms to obtain low cost capital for investment. In imperfect market conditions such as in developing markets, obtaining funds from external capitals would incur higher costs. Therefore, the internal capital market provides unrelated firms with low cost capital that could be used for capital investment to enhance performance. Apart from that, situations such as underutilization of resources and capabilities, earnings stability, response to a dynamic environment, lower business risk and pressure from the board of directors to attain their target profits leads firms to diversify from their current businesses.

Finally, another possible cause is the nature of the industry. The nature of an industry has a significant role in influencing a firm's level of debt. As indicated by Syed and Rao (2004), firms with a high level of cash flow would have a low level of debt compared to firms that have a low level of cash flow and require a high level of debt to support their business operations. Syed and Rao (2004) provide examples of firms in electronics that may have a low level of debt due to cyclical earnings. In contrast, firms in the food industry that usually receive a high level of cash flow would pay less attention to the level of debt. These firms in the food industry can lower or increase their use of debt, depending on the condition of their business. Based on the results, they have adequate cash flow and liquidity to support their business.

This could be a reason why cash flow and liquidity have a negative relationship with debt levels. A high level of cash flow and liquidity would eliminate the probability of the firms to obtain external funding, as internal resource would be sufficient to support the business. Such evidence is well supported by Grant, Jammine and Thomas (1988), who state that firms prefer to utilize internally generated funds for business activities. Similarly, 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 significant role in determining the choice of financing. Large firms tend to have higher levels of debt. Large firms can usually afford to consume more debts, as they have more resources and capabilities. This could be a reason why unrelated firms have high levels of debt compared to related firms. Daves, Ehrhardt, Kuhlemeyer and Kunkel (2000) and Eriotis (2007) also claim in their studies that size has a significant influence on capital structure decisions. The results are also consistent with the findings of Lim et al. (2009), who carried out their research in Singapore. According to them, Singaporean firms are smaller than firms in the United States, and thus, firms in the United States have been induced to consume more debt than Singaporean firms. With the availability of such resources, this could be a reason for the firms to pursue their diversification strategies without considering availability of funds. This may suggest that firms possibly do not care about obtaining debt to finance their business expansions as they could use their internally generated funds for that exercise. Therefore, the relationship between diversification strategy and capital structure is not significant in Malaysia.

Robustness test

This section presents the robustness check carried out on the sample. The data was separated into two periods. Pre crisis data is data from 1994 to 1996 while post crisis data is data from 1999 to 2012. To avoid outlier figures, this sample excludes data from 1997/1998, the years that saw the Asian financial crisis, as issues may arise due to the number of firms that were affected during the crisis. The test was carried out to provide a better explanation of the relationship between diversification strategies and capital structure decisions. This test is performed using the fixed effects estimation method. Table 3 presents the results of the robustness test. The results are indicate that there is no relationship between diversification strategies and choice of financing for both pre and post crisis periods. The use of other variables also gave the same results. Thus, the same results can be used to support the findings obtained from the whole sample.

Table 3:
Pre and post crisis results using fixed effects estimation method

Variables	FE Pre-Crisis	FE Post-Crisis
Constant	0.2496**	0.0081
	(0.1061)	(0.0571)
CE_{it}	-0.0007	-0.0018
	(0.0019)	(0.0017)
LIQ_{it}	-0.0315**	-0.0446***
	(0.0141)	(0.0047)
CF_{it}	-0.5586**	-0.2063***
	(0.2284)	(0.0414)
$SIZE_{it}$	0.0343**	0.0545***
	(0.0155)	(0.0077)
SD	-0.0443	0.0417
	(0.0431)	(0.0365)
Durbin Watson Test	1.8931	1.9381
Prob > F	0.0000	0.0000
F-statistics	3.4519	16.2075
Adj. R^2	8.88%	22.45%
No. obs	152	684

Note: Figure in parenthesis is the Standard Error
***Significant at 1 percent level
**Significant at 5 percent level
*Significant at 10 percent level

CONCLUSION

This study takes into account related and unrelated diversification strategies implemented by public listed firms in Malaysia, and have identified their impact on financing decisions from 1994 to 2012. This research intends to provide some awareness to corporate decision makers so that they have a better understanding of capital structure decisions, which can help them to choose the best mode of financial instruments to raise the market value of their firms. This study proves that the relationship between related or unrelated diversification strategies and capital structures is insignificant. Hence, firm managers do not need to consider debt financing when pursuing diversification strategies, as there is no value that can be enhanced. This is consistent with the evidence brought forth by Menendez-Alonso (2003) and Syed and Rao (2004), all of whom have proven that there is no significant relationship between diversification strategies and capital structures in Spain.

Nevertheless, firms need to be wary of other factors such as cash flow, liquidity and size. These three variables have a significant impact on selecting financing decisions. Liquidity and cash flow have an inverse relationship with financing choices. Thus, firms have utilized internally generated funds before using debt financing in the implementation of their diversification strategies. In contrast, size is positively related to a firm's level of debt. This suggests that large firms are more capable of consuming more debt than small firms. This evidence possibly suggests that smaller firms should not incur too much debt due to their lack of resources to service the debt.

This paper confirms that there is no relationship between diversification strategies and capital structures as explained by numerous literature, including Menendez-Alonso (2003), Syed and Rao (2004) and Ruland and Zhou (2005). However, further investigations need to

be done in order to better understand the role of diversification strategies and their impact on capital structures, particularly in firms that implement dynamic diversification strategies.

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