

## **Costs of Financing and Diversification: Evidence from Malaysia**

**Song, S. I.<sup>1\*</sup> and Chu, E.Y.<sup>2</sup>**

<sup>1</sup>*Faculty of Business Management, UiTM Pulau Pinang, Jalan Permatang Pauh, 13500, Permatang Pauh, Pulau Pinang, Malaysia*

<sup>2</sup>*Graduate School of Business, Universiti Sains Malaysia, Minden 11800 Pulau Pinang, Malaysia*

### **ABSTRACT**

This study examines the extent of geographical diversification of Malaysian public listed firms and its effects on the costs of debt and equity financing. All companies, except those in the utilities and financial industries listed on Bursa Malaysia with segmental and foreign asset information available in Thomson One Banker database from 2008 to 2012, are used. Herfindahl index is used to compute the degree of diversification for firms, while weighted average costs of debt, equity and capital are used to estimate the costs of financing. The results show that less than half of the sample companies are geographically diversified. Although cost of capital is higher in diversified firms and it increases corresponding to the degree of diversification, confirming diversification in this country is not efficient. Debt has a much lower cost of financing compared to equity, which is consistent with the return tradeoff theory and tax shield effects. The debt ratio has the greatest influence on the weighted cost of debt, while P/E ratio has the greatest influence on the weighted cost of equity. It is also found that the relationships are contingent on the level of diversification of the firms. The more geographical diversification of the firms, the higher the cost of debt. As for the equity, the positive interactive coefficient between P/E and H-index shows that the more geographical diversification of the firms, the lower the cost of equity. Overall, the study concludes that Malaysian firms do not pursue efficient diversification as the cost of capital is higher for diversified firms.

*Keywords:* Cost of debt, cost of equity, costs of financing, diversification, H-index, Malaysia

### **ARTICLE INFO**

*Article history:*

Received: 15 December 2014

Accepted: 22 April 2015

*E-mail addresses:*

[songsi@ppinang.uitm.edu.my](mailto:songsi@ppinang.uitm.edu.my) (Song, S. I.),

[eychu@usm.my](mailto:eychu@usm.my) (Chu, E.Y)

\* Corresponding author

### **INTRODUCTION**

It is well documented that corporations in East Asia have high degrees of corporate diversification (Claessens *et al.*, 1999). The reasons for diversification include achieving coinsurance effects, using

internal capital markets to allocate resources more efficiently and achieving lower costs of financing. Diversification is found to increase debt capabilities as a debt holder perceives that different divisions could offset cash flow variances among divisions, consequently and increase the capability in debt payment (Stein, 1997). Peyer (2001) concludes that an efficiently diversified or multiple segment firms under-invest less compared to single segment firms as they face more under-invest investment problems due to their financial constraints. Based on this argument, firms in emerging markets, which face issues of external capital, will incline to diversify to increase their efficiency in investments. Inevitably, this leads to higher levels of debt and other moral hazard problems.

Hence, studies on the effect of corporate diversification and the efficiency of firms in terms of financing are essential especially in emerging economies. This is largely due to the inefficiency of their capital market. Although diversification could help to create an internal capital market with lower cost of capital to complement external capital market in an efficient market (Peyer, 2001), studies on this perspective in emerging market is relatively few. Therefore, this study aims to provide further insights into one of the East Asian countries, namely Malaysia, in relation to its corporate diversifications and efficiency in financing.

Malaysia firms suffered from over borrowings and diversification during East Asian financial crisis (Claessens *et*

*al.*, 2003). Since then, various corporate governance reforms have been introduced, and the economy has since recovered. The Central Bank of Malaysia reported that due to “ease of access to loans”, financing from the banking and capital market towards private sector has increased from 8.4% to 11.3% in 2013 (BNM, 2013). However, it is also uncertain whether Malaysian firms experience a lower cost of capital amid higher degree of capital financing. Therefore, research questions raised in this study are as follows: 1) To what extent Malaysian companies have geographically diversified their businesses in the global market in recent years?; 2) What are the costs of financing in those public listed firms?; and 3) Would diversifications reduce the costs of financing?

The study is important and needs the attention of the policy makers as well as business decision makers in order to stay competitive in the global market. Furthermore, the competition in the Asian region is expected to become more intense in the future if greater liberalisation is in place. A good understanding of the financial market and the firms’ costs efficiency is therefore crucial. In particular, it will help Malaysia achieve the economic transformation objectives, move towards a more sustainable business environment and attain its ambition for a high income society. In addition, the study could serve as a reference point to other East Asian countries in developing their financial strategies.

Thomson Reuter databases were used to extract various types of costs

of financing. The Herfindahl index was computed to estimate the extent of corporate diversification in the public listed firms in Malaysia. The findings show that geographical diversified firms have higher costs of financing compared to more focused firms.

## LITERATURE REVIEW

Generally, East Asian corporations exhibit a high degree of corporate diversification (Claessens *et al.*, 1999). In fact, it was argued that the East Asian financial crisis was attributed to the excessive diversification of corporations in this region. The reasons for diversification, as argued by Nam (2001), are due to the constraints of underdeveloped external factor markets. By creating a group-wide internal capital market through diversification, a business group would be able to finance its new or existing businesses by mobilising the in-group financial resources. As information asymmetry is assumed to be less of a problem within a group, an internal capital market may operate on superior information and therefore allocate capital more efficiently and gain financial synergy (Williamson, 1985). This is especially important at the early stage of economic development, when factor markets particularly the financial market usually suffers from serious imperfections such as weak legal framework and investor protection (Shin & Stulz, 1996).

By increasing the size of company through diversification, either through internal growth or external acquisitions,

it may lower its systematic risks. The coinsurance effect as a result of diversification lowers the degree of correlation between the cash flows of the unrelated business units (Seth, 1990) and thus a more stable cash flow will prevail. In addition, diversification could complement the internal markets by eventually lowering the costs and increasing bargaining power with suppliers or customers (Williamson, 1985). Resources within a firm will be allocated in such a way that the most profitable project will be given priority and a firm will be able to allocate its resources more efficiently in line with the efficiency theory (Trautwein, 1990). Thus, the costs of capital are expected to be lower as compared to that of a more focused firm.

Nevertheless, there is also strong evidence that corporate diversification yields suboptimal results (Ozbas & Scharfstein, 2010; Ammann, Hoechle, & Schmid, 2012; Berger & Ofek, 1995). Diversified firms were valued less than matching portfolios of specialised firm and diversifying acquisitions decrease shareholder wealth. Claessens *et al.* (2003) contended that the over-diversification of the East Asian corporations has led to the misallocation of capital in some of these countries due to agency problems.

Given the growth in the East Asian capital market, for instance, Claessens *et al.* (2003) found that more than 70 percent of the Malaysian corporations were involved in multi-segment businesses, while Song (2007) also found that on average, about 46 percent of the cases involved different

lines of business in M&A announcements. As financial synergy is a widely cited motivation for diversification (Aggarwal & Zhau, 2004; Nam, 2001), there is still a large gap remaining in our knowledge about the efficiency of diversified firms in utilising financial resources. Hence, it would be beneficial to investigate the firms' costs of capital as a result of the diversification.

The cost of capital is vital in the business world as it affects a wide spectrum of corporate decisions such as investment, divestments and measures of economic profits. It also represents the minimum rate of returns that a project must earn to increase firm value. If the proclaim coinsurance effects prevail after a diversification, the cost of capital should be lower. Until recently and after the Asian financial crisis where pressures to call for a more transparent and accountability of managements of public listed firms, the governments in these countries have imposed more stringent guidelines on corporate disclosure, including segmental information. In order to minimise the overall costs of capital for the entire firms, it was also highlighted that institutional features of national financial systems such as corporate tax rate, creditor rights, as well as inflation and political risk, corruption index, legal origin, and other factors also affect the capital structure of the firms (Aggarwal & Kyaw, 2004).

As suggested by the literature, the costs of financing and the performance of diversified firms are influenced by many

factors and the empirical findings in this area are still very limited, especially in developing countries. Therefore, this study aims to close the gap by investigating the public listed companies in one of the East Asian countries, namely Malaysia, in relation to their corporate diversifications and the efficiency in financing their businesses.

## METHODOLOGY

### *Sample and Data*

All companies, except those in the utilities and financial industries listed on Bursa Malaysia with segmental information available in Thomson One Banker database from 2008 to 2012, were selected. The same database was also used to extract the financial information of the firms. From 2008 to 2012, an average of 365 firms with foreign assets and geographical segmental information were obtained.

### *Method*

Geographical segments by sales and number of diversification were computed. Degrees of diversification were computed using the Herfindahl Index. It is computed as  $\sum S_i^2$ , sum of square of the percentage of each geographical sales from a firm's total sales. Meanwhile, the cost of capital, cost of debt and cost of equity were extracted from Thomson One Banker database. Comparisons were made to assess the effective costs of financing across the firms.

Multiple linear regression analyses were used to generalise the effects of

diversification and various factors on the costs of financing. The base model for the regression analysis is as follows:

Performance (cost of financing) = f(Diversification, control variables)

Cost of financing =  $a + \beta_1 Div + f(cont. variables)$

Where costs of financing include weighted average cost of debt (WCD) and weighted average cost of equity (WCE) and weighted average cost of capital (WACC). The data were extracted from Thomson One bankers and described as follows:

$$WCD = \frac{Int}{TotDebt} \times (100 - taxrate) \times \frac{TotDebt}{TotDebt + Stock + TotEquity} \quad [1]$$

$$WCE = DivYield + ROE \times \frac{Ret.rate}{100} \times \frac{TotEquity}{TotDebt + PrefStock + TotEquity} \quad [2]$$

$$WACC = WCD + WCE \quad [3]$$

Control variables include those performance ratios such as free cash flow (FCF) to represent the cash management of the firms, current ratio (CR) for liquidity, Debt ratio (DR) for leverage potential, beta for risk and price to earning ratio (P/E) for signaling the potential growth of the company and total asset for the size of the firms.

### RESULTS

The results obtained from Thomson One Banker database indicate that, excluding those firms in the financial and utilities industries, 788 companies were active. There were 467 companies with information on the cost of capital, cost of debt and cost of equity. In terms of segmental information, only 345 firms disclosed their segmental information for the year 2012. For the past 5 years, the average of disclosure was about 366. Table 1 shows the final sample obtained with the available segmental and cost of capital information after screening and combing from the database.

TABLE 1  
Diversified firms in the manufacturing industries, Malaysia (2008-2012)

| Year | Herfindahl Index <1 | Herfindahl Index = 1 | Total | % of Diversified Firms |
|------|---------------------|----------------------|-------|------------------------|
| 2008 | 136                 | 219                  | 355   | 38.3                   |
| 2009 | 143                 | 229                  | 371   | 38.5                   |
| 2010 | 146                 | 224                  | 370   | 39.4                   |
| 2011 | 145                 | 242                  | 387   | 37.5                   |
| 2012 | 141                 | 204                  | 345   | 40.9                   |

TABLE 2  
Categories of Herfindahl Index from 0– 0.99 (<1)

| Year | 0 - 0.24 | 0.25 - 0.49 | 0.5 - 0.74 | 0.75 - 0.99 | Total |
|------|----------|-------------|------------|-------------|-------|
| 2008 | 2        | 34          | 53         | 47          | 136   |
| 2009 | 2        | 34          | 53         | 54          | 143   |
| 2010 | 1        | 34          | 68         | 43          | 146   |
| 2011 | -        | 34          | 72         | 39          | 145   |
| 2012 | -        | 24          | 75         | 42          | 141   |

Table 2 shows the distribution of the Herfindahl Index of the firms. The Herfindahl index less than one indicates that the firms are geographically diversified, while that equals to 1 indicates only serves one segment. The majority, or about 60

percent of the companies, were in the single segment geographical sales diversification. The h-index for firms actively involved in diversified business was about 25 percent, which is shown by the h- indices range below 0.5.

TABLE 3  
Descriptive statistics

|                            | Descriptive Statistics |         |          |          |                |
|----------------------------|------------------------|---------|----------|----------|----------------|
|                            | N                      | Minimum | Maximum  | Mean     | Std. Deviation |
| h index                    | 140                    | .349    | 1.000    | .85867   | .197           |
| Total Assets (xxxx)        | 140                    | 9.09    | 16256.79 | 451.7851 | 1821.008       |
| Total Debt ( RM mil )      | 140                    | .00     | 9196.49  | 117.3807 | 794.409        |
| Yr End Market Cap (RM xxx) | 140                    | 3.93    | 6156.51  | 311.3909 | 945.101        |
| WACC                       | 140                    | .15     | 38.45    | 9.4693   | 6.137          |
| WCD                        | 140                    | .00     | 6.17     | .7324    | .783           |
| WCE                        | 140                    | .04     | 38.45    | 8.7362   | 6.238          |

Table 3 indicates that WACC for the firms on average was at 9.5 percent (median 8.7%), while cost of equity (WCE) was about 8.7 percent (Median 8%) and the cost of Debt (WCD) was the lowest at .73 percent (median 0.6%). Meanwhile, cost of debt was so much lower than the cost of equity, the finding which is consistent with the risk return trade off theory and the tax benefits of using debts.

From the sample, 80 firms or about 57% of the sample are geographically undiversified or mainly serving Malaysian customers only

(Table 4). About 43 percent have diversified their business into foreign countries. The results are much lower than the study by Claessens *et al.* (2003) but quite consistent with the findings by Song *et al.* (2007) by less than 50 percent. Generally, Malaysian companies are not seen as that aggressive and competitive in terms of international diversification. This is also consistent with the narrowing surplus in the current account of the national income in recent years.

Table 4 also shows the distribution of the H-index and various costs of financing. Contradicting to the co-insurance effects suggestion, the findings of this study show that the costs of financing are lower for those undiversified firms as compared to those of diversified firms. In particular,

WCE is also much higher than WCD, which is consistent with the characteristics of the types of financing. This initial finding indicates that diversification in Malaysian firms is not efficient as Malaysian firms do not achieve lower cost of capital.

TABLE 4  
H-Index and Costs of Capital

| H-Index |                | WACC   | WCD  | WCE    |
|---------|----------------|--------|------|--------|
| <1.00   | Mean           | 11.024 | .84  | 10.187 |
|         | N              | 60     | 60   | 60     |
|         | Std. Deviation | 6.683  | .922 | 6.860  |
|         | Minimum        | .22    | 0    | .12    |
|         | Maximum        | 31.79  | 6    | 31.63  |
|         | Median         | 10.430 | .68  | 8.995  |
| 1.00    | Mean           | 8.303  | .66  | 7.648  |
|         | N              | 80     | 80   | 80     |
|         | Std. Deviation | 5.446  | .656 | 5.525  |
|         | Minimum        | .15    | 0    | .04    |
|         | Maximum        | 38.45  | 3    | 38.45  |
|         | Median         | 7.445  | .38  | 7.000  |

The regression results in Table 5 (Panel A) show that the h-index is a significant variable in explaining the variation in the cost of capital, cost of debt and cost of equity. Generally, the negative relationship shows that the more diversified the firms are, the higher the cost of financing will be, which is against the co-insurance effects that suggest lower cost of capital for diversification firms. However, the effect of the H-index peters out when some control variables are included in the models. It is found that debt ratio has significant negative effects on the WACC and WCE, but positive effect on WCD. The higher the debt, the higher the cost of debt will be, as

creditors would view that the firms have higher risks. Meanwhile, the cost of equity would reduce as a higher debt ratio is a signal to the equity holders that creditors will act as a governance mechanism to monitor the act of the managers in the firm.

CR is consistently and significantly negative for all the three models. This finding indicates that the higher the current ratio, the lower the cost of capital is. This indicates that the ability of the firms to meet their current obligations results in lower cost of capital.

Similarly, the P/E ratios are also consistently negative for the three model specifications. This finding indicates that

the higher the growth potential of the companies, the lower the cost of capital especially the equity capital. Therefore, the PE ratio is not a significant variable in explaining the variations in cost of debts.

Nevertheless, FCF (which indicates how well the firms manage their cash, Beta (which indicates the riskiness of the stock) and TA (for the size of the company) are not significant in the three models.

In terms of level of significance, the standardised coefficients show that the P/E ratio has the greatest impact on the cost of equity, while the debt ratio has the greatest impact on the cost of debt.

In order to further investigate whether the relationship between the cost of financing (namely, debt and equity) and debt ratio, as well as PE ratios, are

contingent on the degree of diversification, the interaction effects between the h-index and debt ratio (HDR) and PE ratio (HPE) were examined. It is interesting to note that an HDR coefficient changes to negative, signifying that the more geographical diversification the firms are, the higher their cost of debt. As for the equity, the positive interactive coefficient shows that the more geographical diversification the firms are, the lower the cost of equity. The regression results show that R<sup>2</sup> was able to explain 60 percent of the variations of the costs of financing. Another 40% were due to other factors which could be further explored in the future research. Meanwhile, factors such as political risks, corruption index and legal origin are suggested.

TABLE 5  
Regression Results

| Dependent Variable             | WACC   |           | WCD   |           | WCE    |           |
|--------------------------------|--------|-----------|-------|-----------|--------|-----------|
|                                | Beta   | t-stat    | Beta  | t-stat    | Beta   | t-stat    |
| Constant                       | 14.989 | 6.411***  | 1.416 | 4.629***  | 13.570 | 5.657***  |
| H-index                        | -5.978 | -2.252**  | -.777 | -2.239**  | -5.198 | -1.908**  |
| R <sup>2</sup>                 |        | 0.038     |       | 0.038     |        | 0.028     |
| H-Index and Control variables: |        |           |       |           |        |           |
| Constant                       | 17.677 | 5.545***  | .726  | 2.301**   | 16.951 | 5.322***  |
| H-Index                        | -3.480 | -1.394    | -.398 | -1.609*   | -3.080 | -1.235    |
| FCF                            | .005   | .377      | .001  | .622      | .005   | .315      |
| DR                             | -.145  | -3.695*** | .040  | 10.386*** | -.185  | -4.728*** |
| CR                             | -.412  | -1.982**  | -.022 | -1.069    | -.390  | -1.878*   |
| Beta                           | .535   | .681      | .065  | .841      | .470   | .599      |
| PE                             | -.216  | -5.025*** | -.002 | -.474     | -.214  | -4.983*** |
| LnTA                           | .175   | .428      | -.049 | -1.209    | .224   | .548      |
| Adj R <sup>2</sup>             |        | 0.238     |       | 0.564     |        | 0.270     |
| F-Stat                         |        | 6.764***  |       | 24.806*** |        | 7.810***  |

TABLE 5 (continue)

| Interact Effects   |         |           |        |           |         |           |
|--------------------|---------|-----------|--------|-----------|---------|-----------|
| Constant           | 21.541  | 5.086***  | -1.129 | -2.120**  | 22.671  | 5.357***  |
| H-Index            | -11.979 | -2.778**  | 1.291  | 2.381**   | -13.271 | -3.080*** |
| FCF                | .022    | 1.964**   | -.001  | -.976     | .023    | 2.088**   |
| DR                 | -.068   | -.545     | .082   | 5.221***  | -.150   | -1.203    |
| CR                 | -.320   | -2.011**  | -.025  | -1.232    | -.295   | -1.858*   |
| Beta               | .464    | 8.609***  | .009   | 1.315     | .455    | 8.451***  |
| PE                 | .162    | .273      | .067   | .898      | .095    | .159      |
| LnTA               | -1.316  | -3.617*** | .095   | 2.068**   | -1.411  | -3.882*** |
| HDR                | -.027   | -.187     | -.049  | -2.726**  | .022    | .156      |
| HPE                | 1.172   | 3.177***  | -.098  | -2.111**  | 1.270   | 3.447***  |
| Adj R <sup>2</sup> |         | 0.562     |        | 0.595     |         | 0.58      |
| F-Stat             |         | 19.376*** |        | 20.051*** |         | 20.785*** |

\* Significantly different from zero at the 10 percent level, using a two-tailed test.

\*\* Significantly different from zero at the 5 percent level, using a two-tailed test.

\*\*\* significantly different from zero at the 1 percent level, using a two-tailed test.

Note: FCF denotes free cash flow, DR and CR are debt ratio (debt/total assets) and the current ratio (current assets/current liability) respectively, beta represents firms' responsiveness to systematic risk, PE is the firms' Price to earnings ratio and LnTA is log Total assets.

## CONCLUSION

This paper examines the extent of Malaysian companies diversifying their businesses in the international markets and the effects of diversification on their costs of financing. It was found that less than 50 percent of the firms had ventured into international diversification. Overall, the cost of capital increases in tandem with the degree of diversification, and this suggests that diversification in Malaysia is not efficient as there is no co-insurance effect. However, the cost of debt is much lower than the cost of equity as the levels of diversification increase. This implies that debt holders perceive that the risk is lower when firms pursue diversification as compared to shareholders. Meanwhile, the debt ratio has the greatest influence on the

weighted cost of debt, while the P/E ratio has the greatest influence on the weighted cost of equity. It was also found that the relationships are contingent on the levels of diversification of the firms. Putting all these together, diversification in Malaysia is not efficient yet as higher costs of capital implying firms may pursue diversification for other objectives rather than maximising shareholders' value. Further studies on this perspective are suggested.

## REFERENCES

- Aggarwal, R., & Kyaw, N. N. A. (2004). *Internal capital markets and capital structure choices of US multinationals affiliates*. Mimeo, Kent State University.
- Aggarwal, R., & Zhau, S. (2004). Diversification in inefficient internal vs external capital market. *New Orleans Paper 1101364*.

- Ammann, M., Hoechle, D., & Schmid, M. (2012). Is there Really No Conglomerate Discount? *Journal of Business Finance and Accounting*, 39(1-2), 264-288.
- Bank Negara Malaysia. (2013). *Annual Report*. Kuala Lumpur: Bank Negara Malaysia.
- Berger, P. G., & Ofek, E. (1995). Diversification effect on firm value. *Journal of Financial Economics*, 37, 39-65.
- Claessens, S., Djankov, S., & Lang, L. (1999). Ultimate controlling owners of East Asian Corporations and Expropriation of Minority Shareholders. *World Bank, Mimeo*.
- Claessens, S., Djankov, S., Fan, J. P. H., & Lang, L. H. P. (2003). Diversification and efficiency of investment by East Asian corporations. *World Bank Policy Research Paper No. 2033*.
- Nam, S. W. (2001). Business Groups Looted by controlling families, and the Asian Crisis. *ADB Institute Research Paper*, 27.
- Ozbas, O., & Scharfstein, D. S. (2010). Evidence on the dark side of internal capital markets. *Review of Financial Studies*, 23(2), 581-599.
- Peyers, U. C. (2001). Internal and external capital markets. *Western Finance Association Meetings Best Paper*.
- Seth, A. (1990). Value creation in acquisitions: A re-examination of performance issues. *Strategic Management Journal*, 11, 99-115.
- Shin, H. H., & Stulz, R. M. (1996). An Analysis of Divisional Investment Policies. *NBER Working Papers*, 5639.
- Song, S. I. (2007). *The Effects of Motives, Bid Premiums, and Ownership Structure on the Performance of Bidding Firms in Malaysia*. (Unpublished doctoral dissertation). Universiti Sains Malaysia, Georgetown.
- Stein, J. C (1997). Internal capital markets and the competition for corporate resources. *The Journal of Finance*, 52, 111-133.
- Trautwein, F. (1990). Merger motives and merger prescriptions. *Strategic Management Journal*, 11, 283-295.
- Williamson, O. E. (1985). *The economic institutions of capitalism: Firms, markets, relational contracting*. New York: Free Press.