

CHAPTER 6

CONCLUSION

Firm-level cost of equity estimates are important for many financial decision-makings, for example, capital structure choice, capital budgeting analysis, performance assessment and firm valuation. The introduction of an exposure draft entitled “Fair Value Measurement” by the International Accounting Standards Board (IASB) in May 2009 uplifted the perspective on fair value measurement, in particular, how fair value should be measured and the requirement for reporting firms to disclose their fair value measurements. Once enacted as part of the International Financial Reporting Standard (IFRS), Malaysia will have to adopt the framework outlined in IFRS. In fact, the Malaysian Accounting Standards Board (MASB) has issued a statement on its plan to achieve full convergence of Malaysia’s Financial Reporting Standards with IFRS by 1st January 2012. In other words, soon, all public listed firms in Malaysia will need to adhere to the framework outlined in IFRS in measuring fair value as well as disclosing the fair value measurements. Even though the draft does not prescribe the use of a specific valuation technique, it mentioned in Appendix C on present value technique under C15 that the CAPM can be used to estimate discount rate. Adding this to the popularity of the CAPM among practitioners worldwide, an increase in the model usage among Malaysian firms in the near future could be expected.

This chapter highlights the research focus of this study in addressing the issue of using the CAPM for calculating cost of equity. The first section recapitulates the motivation and focus of the study. The second section summarizes the major findings from the empirical analyses conducted to answer the research objectives. This is followed by the third section on policy implications that can be drawn from the research findings. The

next section attends to the limitations of the present study and the final section offers some suggestion for future research.

6.1 Summary of Research Focus

Although the CAPM receives widespread popularity in the corporate world, there is no consensus in the academic literature as to which CAPM variants can offer the best model for estimating cost of equity at firm level. There seems to be a general rule of thumb that the local CAPM (LCAPM) should be used when appraisers believe that markets are segmented and to use the global CAPM (GCAPM) if the appraisers believe that markets are fully integrated. Pereiro (2006) provided a list of asset pricing models for emerging markets. Among them were Lessard's (1996) model where country risk premium is added, Godfrey and Espinosa's (1996) model where a correction factor is added to adjust for double counting the country risk premium, Pereiro's (2001) adjusted hybrid CAPM which is an improvement of the Godfrey and Espinosa's (1996) model, and Estrada (2000, 2001) non-CAPM based model where he argued cost of equity estimates based on downside risks are more suitable for emerging markets.

However, none of the studies in the list provided by Pereiro (2006) considers both local and global factors simultaneously. With the onset of capital market liberalization in the 1990s, some emerging markets have become partially integrated into the world capital market (Bekaert and Harvey, 1995; Bekaert *et al.*, 2005). If Malaysia is partially integrated to the world capital market, then a model which considers both local and global factors might offer greater explanatory power on stock returns of firms. Hence, better cost of equity estimates could be obtained. The first focus of this research is to attend to the above research gap, that is, to examine which of the asset pricing models provide the best fit for calculating the cost of equity of Malaysian firms.

From the literature review, it is evident that research on determinants of cost of equity is still lacking. Possibly due to the financial crisis and financial scandal outbreaks in the 1990s, a massive effort was steered towards examining the effect of international diversification/cross-listing, legal institutions and securities regulation and disclosure/corporate governance on cost of equity. In the same vein, relatively few studies have focused on examining the effect of firm-specific risk factors on cost of equity. Empirical evidence show that relevant estimation models for cost of equity for emerging markets could be different from those of developed markets. Therefore, factors affecting the cost of equity in emerging markets might differ from developed markets as well. Considering that the accuracy of cost of equity estimates is vital in achieving effective strategic decision making and firm performance evaluation, an examination on the cost of equity determinants would assist firms in reviewing their cost of equity estimates. The second focus of this study is essentially to address this research gap.

6.2 Summary of Analyses and Findings

Employing firm-level data for seven sectors which consist of 354 firms listed in the Main Board of Bursa Malaysia covering the period 3 January 2001 to 31 December 2008, this study aims to obtain the most relevant model to calculate cost of equity and to test the effect of a list of potential factors on cost of equity. Unlike previous studies where the model used for estimating cost of equity was pre-determined, a few alternative models were considered and selected based on their explanatory power on actual stock returns. The criteria used (following Estrada, 2000, 2001, 2002; Chen and Chen, 2004) are the R^2 and adjusted R^2 . A panel regression analysis is performed where actual returns for all firms were regressed against each of the different risk measures and the explanatory power of the estimated models was compared. Based on the

average rankings from the selection criteria, the semi-deviation approach yields the best model. This model explains about 40 percent of variations in stock returns and for some sectors, the figure goes up to more than 50 percent. Using this approach, the average cost of equity estimated for the Malaysian firm is 24.0 percent. The sectoral estimate is 25.4 percent for the Construction, 21.4 percent for the Consumer Products, 25.3 percent for the Industrial Products, 20.3 percent for the Plantations, 26.7 percent for the Properties, 23.9 percent for the Technology and 23.2 percent for the Trading/Services.

A panel regression approach is also used to find potential determinants of cost of equity. The use of panel regression approach has some advantages in that it endows both spatial and temporal dimension of the longitudinal data and so offers a larger sample size and thus higher degrees of freedom, more precise estimates, and greater statistical test power. With panel setting, the spatial dimension of the Malaysian firms as well as the time span dynamic over the sample period can be incorporated into a single model. The results enable inferences to be drawn on whether factors that were found to be affecting developed markets were also affecting cost of equity of firms in an emerging market. From the list of potential determinants, debt-to-equity ratio, earnings per share, total asset turnover ratio, firm size and stock liquidity were found to have significant explanatory power on cost of equity. Their coefficient signs are also consistent with the literature except for stock liquidity. It is found that firms with higher liquidity have higher cost of equity. A possible explanation for the inconsistency could be due to a moderate collinear relationship of 0.52 between stock liquidity and firm size, as larger firms tend to have higher liquidity.

The study also reveals some interesting findings on the relationship between cost of equity and its determinants at the sectoral level. It turns out that firm size is an

important determinant for most sectors, followed by total asset turnover ratio. Current ratio and debt-to-equity are important determinants in only two sectors, namely, the Construction sector and the Trading/Services sector while stock liquidity were found to be significant for the Technology sector and the Trading/Services sector. Significant effect of earnings per share on cost of equity was only found for one sector, which is the Industrial Products sector. Apparently, the number of important variables varies across sector. The relationship of the variables with cost of equity may also differ by sector, as shown in the case of current ratio, debt-to-equity ratio and total asset turnover ratio. This justifies the need to have sector-level analyses and supports the findings of other studies (see for example, Bekaert and Harvey, 1995; Hardouvelis *et al.*, 2007) that documented that analyses on the sectoral effects are becoming more important.

Overall, the study has highlighted a few important points. First, measurement of cost of equity could be improved when taking downside risk into consideration. Second, determinants for cost of equity of Malaysian firms are debt-to-equity ratio, earnings per share, total asset turnover ratio, firm size and stock liquidity. Third, from these five determinants, three of them, namely, debt-to-equity ratio, earnings per share, total asset turnover ratio, are accounting-based attributes. This suggests that accounting-based attributes are important factors for cost of equity.

6.3 Implications of the Study

The use of accurate cost of equity estimates would contribute to an efficient allocation of resources in the economy. The results of this study have shown that the estimation model based on downside risk, that is, semi-deviation, has the highest explanatory power on stock returns. This suggests that Malaysian investors have a stronger dislike towards downside volatility than volatility itself. The anxiety that firms might refuse to

use complicated estimation procedure is alleviated since the downside risk model is simple to implement and can be tailored to any desired benchmark return. This study provides empirical evidence strengthening the validity of using downside risk models to estimate cost of equity in Malaysia. Several firm-based implications and government-based implications are derived from the results of the study. They are discussed separately in the following two sub-sections.

6.3.1 Firm-Based Implications

The CAPM is a popular model among Malaysian firms for calculating cost of equity as shown by Abdul Samad and Shaharuddin (2009). Although their study did not go into details as to which version of CAPM was preferred but it was mentioned that 54.2 percent of the firms understudied had cost of equity between four to eight percent. Given the 'low' cost of equity figures, it could be safe to deduce that standard risk measures were used in the calculation. The results from this study show that downside risk measures have higher explanatory power on stock returns compared to standard risk measures. This finding is also supported by other studies on emerging markets, for example, Estrada (2000, 2001, 2002, 2007), Chen and Chen (2004), Collins and Abrahamson (2006) and Pedersen and Hwang (2007). Hence, if Malaysian firms continue to use standard risk measures, they may underestimate the cost of equity. The result could be inappropriate investment choices which might be detrimental to the firm value.

The lack of use of downside risk measure to calculate cost of equity could be due to two reasons. Firstly, the application of downside risk measure in the CAPM or other valuation models only started to gain attention probably after the study of Estrada (2000, 2001), although the concept of downside risk can be traced back to Roy (1952).

Secondly, it could be due to lack of understanding about downside risk measures. Given that the results of not using downside risk measure could be detrimental, firms ought to include in their training agenda for chief financial officers and finance executives the use of downside risk measures. Doing this might not only improve the cost of equity measure but also to ensure that the firm would not be at a disadvantage when other firms are using it in, say, a merger and acquisition exercise.

Traditionally, profit maximization was assumed to be the prime and only objective of a firm. Under the profit maximization framework, a firm will attempt to change its prices, input and output quantity to maximize profit. Nevertheless, due to conditions such as highly competitive business environment, separation of ownership and management, restrictions on profits of public utilities and so on, a firm may not be able to always achieve this objective. Sales maximizing model of Baumol (1959), managerial utility maximization theory by Williamson (1964) and growth maximization model of Marris (1967) are among others who assume that firms have optimizing targets other than profits.

The growth maximization framework of Marris (1967) proposed that managerial utility is a function of salaries, job security, power, and so on. He added that the realization of these functions would depend on the size of the firm. Therefore, managers tend to maximize firm growth rather than profits. The results of our study show that there is another benefit from maximizing firm growth. It is found that larger firms are associated with lower cost of equity, since larger firms are usually in a better position to raise external funds on favourable terms. The benefit of acquiring funds at a lower cost is that, *ceteris paribus*, a better ability to achieve higher profit for the firm. Hence, it can be deduced that while managers are maximizing firm growth, they are also generating

greater profit potentials for the firm. For that reason, constant communication with stockholders on the growth strategy for a firm is essential so that it can be viewed favourably by stockholders.

6.3.2 Government-Based Implications

Some of the results from this study might be useful to be taken into consideration in the design of an appropriate framework to support the Malaysian economic growth. One of which is the effect of firm size on cost of equity. A recent study by Abdul Karim (2010) found that investment spending of smaller firms is not only more sensitive to interest rates but also relied on internal fund as a cheaper source of financing. Our results provide empirical support to Abdul Karim's (2010) study. We found that cost of equity, which measures cost of external financing, is higher for smaller firms. Hence, smaller firms have to rely more on internal financing since it is cheaper and easier to obtain. Once internal fund is depleted, smaller firms may have to rely on external funding such as bank loans for their business agenda. Therefore, the government's monetary policy will have a bigger impact on smaller firms where interest rates are involved. Through easing monetary policy such as lowering interest rates during an economic slowdown would ensure continuous accessibility to sufficient funding that are even more important for smaller firms to remain stable and resilient. In addition, the policies that promote firm growth will lead to a healthier financial market.

Accounting-based attributes are found to be important determinants of cost of equity. These attributes are only as good as the accounting information provided by firms. Hence, the recent amendments to the Capital Market Services Act (CMSA) to strengthen the enforcement powers of the Securities Commission (SC) on corporate governance transgressions are deemed to be appropriate and timely. Under the Capital

Markets and Services (Amendment) Act 2010, a person influencing, coercing, misleading or authorizing any person engaged in the preparation or audit of financial statements of a private limited firm to do anything which causes the financial statements or audited financial statements to be false or misleading is committing an offence. Upon conviction, the person may face up to ten years of imprisonment or fine of not exceeding ten million ringgit. On top of that, an independent Auditor Oversight Board was established through the tabling of amendments to the Securities Commission Act 1993. Steps were taken by the authority to strive for better corporate governance with these amendments. Coupled with effective enforcement, these policies will ensure that investors have access to unbiased financial statements that would help them to make informed investment decisions.

Last but not least, firms will benefit greatly if the government monitors the sector indicators in formulating their policy. For example, size is not shown to affect cost of equity for firms in the Construction sector and the Properties sector. Therefore, lowering interest rates may not benefit firms in these two sectors during economic slowdown. Other policies such as those to boost demand may be more beneficial for the Construction sector as it is shown that a higher turnover asset ratio is related to a lower cost of equity. While market-targeted policies are important, they need to also address the sectoral differences in order to maintain the dynamic balances of the different sectors in the stock exchange. Given the closeness and interdependence of the sectors, the failure of one sector to perform can affect the performance of the whole market.

6.4 Limitations of the Study

As this study is set up to find the best cost of equity estimation model for practitioners, it also works with the model that is most popular among practitioners. Other approaches

such as the earnings-based valuation models were not examined in the study. The Bekaert and Harvey's (1995) approach which allows for cost of equity to change over time depending on the degree of market integration is also excluded in the study. Therefore, while the downside risk model is recommended for estimating cost of equity for Malaysia's firms, the results should be compared to other valuation models that practitioners may currently be using.

The selection of the potential determinants is based on the literature as well as from the five categories of financial ratios, namely, liquidity, activity, debt, profitability and market ratios. As it is assumed in this study that all ratios in a category measure the same firm characteristic, only selected variables were included in the study. Considering that firms in different industries may use ratios that focus on aspects peculiar to their industry, different ratios could have been selected for each of the sectors. There are possibilities that the variables selected in this study may not represent all the sectors simultaneously.

The framework of this study is tailored to the Malaysian case where all analyses were conducted from the viewpoint of a Malaysian investor, with the aim to derive a reliable approach for estimating the cost of equity for firms listed in the stock exchange of the country. On top of that, this study used the Malaysian industry classification system and not the FTSE Global Classification System. Thus, the results at the sectoral level may not be directly comparable to other emerging markets which have their own industry classification system.

6.5 Recommendation for Future Research

The list of potential determinants selected from the five categories of firm financial ratios could be expanded for future research. The study could also be extended to other emerging markets to allow for a cross-country comparison and to test the robustness of the results in other emerging economies. In this case, the FTSE Global Classification System could be used to ensure uniformity and comparability of the results for different emerging countries.

It might also be interesting to investigate further the relationship between stock liquidity and cost of equity for Malaysian firms. Conventional wisdom states that firms with highly liquid stocks should experience lower cost of equity because their stocks can be bought and sold easily. Nonetheless, with a positive relationship, it means that firms with highly liquid stocks have higher cost of equity. A possible explanation is that although these firms have high stock liquidity, they may actually be experiencing loss in their income statements. If that is the case, it might be worthwhile to check for possible churning activities. Whatever the case may be, it is a puzzle that is worth investigating.