

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Background on capital structure**

Modigliani and Miller (1958) in their original work prove that under a restrictive set of assumptions, capital structure is irrelevant. This was advocated in Modigliani and Miller's (MM) Proposition I which says that the value of a firm in the absence of taxes is independent of its leverage.

MM also advocated under Proposition II which says that the cost of equity of a levered firm increases in proportion to the increase in debt-equity ratio expressed in market values. The cost of equity increases when leverage increases as the cost of equity increases with leverage (Ross, Stephen, Randolph, & Jaffe, 1993). Equity risk increases because the remaining shareholders have to bear more of the firm's business risk as more debt is used.

When taxes are included, the value of a levered firm under Proposition I increases by the amount of the tax shield which is equal to the corporate tax rate ( $T$ ) multiplied by

the amount of debt used. With taxes, according to Proposition II, a levered firm's cost of equity rises in proportion to the debt-equity ratio multiplied by  $(1-T)$ . Since  $(1-T)$  is less than 1, corporate taxes cause the cost of equity to rise less rapidly with leverage than when there are no taxes (Brigham, Eugene, Louis, & Michael, 1999).

Thus, in the presence of corporate taxes, MM's Proposition I and II suggest that a firm should use 100 per cent debt to maximize its value. However, when more debt is used, bankruptcy costs increase. This brings into question what a firm's optimal capital structure should be.

Myers (1984) gave an explanation about two options in capital structure. Firstly, the static Tradeoff Hypotheses argues that firms trade off the tax benefits of debt financing against the costs of borrowing by substituting debt for equity or vice-versa until the value of the firm is maximized at an optimal capital structure point. Beyond this point bankruptcy-related costs exceeded the tax benefits and the costs of financial distress increase.

The second way of thinking is the Pecking Order Theory which says that firms prefer internal finance (Myers & Stewart, 1984). If external finance is needed, firms issue the safest security first, starting with debt, then possibly hybrid securities and finally equity as a last resort. This is because managers often have asymmetric information about their firms' prospects and prefer to issue debt to equity when their inside information is favorable. They will prefer equity to debt only when prospects are favorable.

## 2.2 Relationship between Firm Value and Debt – OLS Specification

Fama and French (1998), inspired Ordinary Least Square (OLS) specification with the first large sample attempting to empirically estimating Modigliani and Miller (1963). They empirically regressing firm value with interest expense (their proxy for debt) with controls for  $V_U$ . They use the excess of market value over book value assets as the proxy for  $V_L$ . Their controls include earnings, R&D expenditures and dividends. They found that the coefficient of interest is generally negative or insignificant in their regressions which they attribute to either non-existence of tax benefits, or inadequate controls for future profitability (Jayaraman, 2006).

Kemsley and Nissim (2002) reverse the empirical specification used by Fama and French (1998) by regressing future profitability on current debt, with controls for market value. Five years subsequent profitability was used to measure future firms' performance and they found a negative coefficient on debt which was interpret as tax benefits contributing to firm value.

Modigliani and Miller (1958) theory is developed with the assumptions of a perfect and complete markets, which the only imperfections explicitly modeled in MM is the tax deduction of interest expense. Nevertheless, while empirically estimating relationship between firm value and debt, one has to take into account real-world imperfections such as agency and asymmetric information that has been assumed away by Modigliani and Miller (Jayaraman, 2006). Miller (1988) states that "... price reactions to dividend announcement were not really refutations (of the MM hypotheses). They were better seen as failures of one of the key assumptions of both

leverage and dividend models, namely, that all capital market participants, inside and outside investors, alike, have the same information about the firm's cash flows" (Jayaraman, 2006).

Stiglitz (1988) states that once informational asymmetries are incorporated, firm's choice of capital structure conveys information on the firm's prospects to lenders and purchaser of equity. On the other hand debt-equity ratios serve to signal management's private information about the firm's future profits (Ross S. , 1977). When outstanding debt matures after firm's investment option expires, firms with high levels or growth opportunities issues less debts, which evidence that a firm's growth options did have influences on its debt level (Myers S. , 1977). The market-timing literatures argue that firms take advantage of their share pricing while making capital structure decision. Baker and Wurgler (2002) found that when share prices are high, managers prefer to issue equity instead of debt, which decreases the debt ratio (Jayaraman, 2006).

### **2.3 Hausman (1978) test of endogeneity**

The Hausman test is used in applied economic work as a test of misspecification. It is most commonly thought of (wrongly some would say) as a test of whether one or more explanatory variables in a regression model are endogenous (Chmelarova, 2007). Jayaraman (2006) used the Hausman test in two stages. In stage one, the suspected endogenous variable is regressed on an instrument and the other related exogenous variables from the primary equation. He added that in second stage, the predicted regression residual from the first stage is used as an additional explanatory

variable in the primary regression. He argue that if the residual is statistically significant, then the suspected endogenous variable is indeed endogenous (Beaver, Macnally, & Stinson, 1997)

Intuition behind the test is that the regression residual is the difference between the actual value and the predicted value. The statistical significance of the residual suggests that the actual value is different from the predicted value and hence the former cannot be treated as exogenous. Hausman test requires an instrument that is correlated with the suspected endogenous variable but uncorrelated with the error term

## **2.4 Alternate interpretation**

This section will discuss based on alternate theories (agency and signaling hypotheses) that might affect the positive relation between firm value and debt.

### **2.4.1 Free Cash Flow Theory**

Jensen & Meckling (1976) stated that managers with substantial free cash flow are able to increase dividends or repurchase stock and thereby pay current cash that would otherwise be invested in low-return project or wasted. They added that the fact that capital markets punish dividend cuts with large stock price reductions is consistent with the agency cost of free cash flow.

Debt can be effective substitute for dividend, something that is not recognizing in the corporate finance. By issuing debt in exchange for stock, managers are bonding their promise to pay out future cash flows in a way that cannot be accomplished by simple dividend increase (Jensen & Meckling, 1976). Thus debt reduces the agency cost of free cash flow by reducing the cash available for spending at the discretion of managers. These control effects of debt are a potential determinant of capital structure.

Cash flow and liquidity can affect the cost of borrowings. Myers S. (1977) notes that the pervasive empirical capital structure regularity is the inverse relation between debt usage and profitability. The effect of liquidity and profitability can be offset by free cash flow consideration. Jensen M. (1986) theorizes that managers of firms with free cash flows might lack discipline. The implication of this argument is that firms should issue debt which committing to distribute free cash flows as interest payments to discipline management into working efficiently.

#### **2.4.2 Debt signaling hypotheses**

Financial structure usage to signal insiders' assessment of firm type has been previously documented. If high quality firms take on more debt to signal their high quality, then the positive relation between firm value and debt might be driven by underlying firm quality. Flannery (1986) produced a models with firms choice of debt maturity in the presence of information asymmetry. He concludes that high quality firms are willing to issue short term debt to signal their high type to the market while

low quality firm, instead would be happy to be treated as the “average” type and issue long term debt.

## **2.5 Firm Value and Debt – Role of Managerial Ownership**

Jensen and Meckling (1976) interested with the effect of splintered ownership on managerial behavior. In their model, management has delegated powers from the principles of the firm – the shareholders. Owing to the cost of information acquisition and the difficulty of monitoring management behavior to ensure it is consistent with shareholder’s interest; rational managers can undertake behavior to ensure it is consistent with shareholder’s interest. Rational managers can also undertake behavior that would shifts wealth from shareholder’s to themselves. The loss in market value relative to its value with no agency issues existed is called the agency cost of equity. This agency cost is also referred as to moral hazard behavior since management undertakes unexpected behavior not in the best interests of the principles. In the situation where managers have small equity holdings; gains from diversionary activity and shirking exceed any loss in value through a reduction in the market value of the manager’s equity holdings in the firm. This problem reaches its most serious manifestation in the case of widely held shares with professional management. Where managers have little or no equity holding and with widely held shares, individual shareholders will refrain from making costly investment in monitoring activity and information gathering due to the free-rider problem.

Demsetz and Lehn (1985) argue that the ownership structure of the firm that emerges is an endogenous outcome of competitive selection in which various cost advantages

and disadvantages are balanced to achieve an equilibrium organization of the firm. They concluded that there is no relation between ownership structure and profitability.

Morck (1988) examined the relationship between management ownership of the firm's equity and the market valuation of its tangible assets measured by Tobin's Q. They find that both higher board ownership and the founding family's presence have a negative effect on Q are not evidence of an efficiency, since they might just reflect the optimal trade-off between profits and private benefits to the management from non-value-maximizing behavior.

McConnell and Servaes (1990) found further evidence on relationship between the distribution of equity ownership and corporate value. They found a strong curvilinear relation between Tobin's Q and the fraction of shares owned by corporate insiders. At low levels of insider ownership, the relation is strongly positive, whereas at high levels of insider ownership, the relation is negative. Q first increases, then decreases, as share ownership becomes concentrated in the hands of the managers and members of board of directors. They also state that managers have both the incentive and the opportunity (i.e. excess cash flow) to undertake wasteful investment projects. This over investment problem can however, be curtailed if managers are forced to pay out excess funds to service debt. That is for firms with more internally generated funds than investment opportunities, debt financing has a positive effect on the value of the firm. They found that there is significant positive relation between Q and the fraction of shares held by corporate insiders and institutional investors. They also found that



the relation between Q and debt is negative for high growth firms and positive for low growth firms.

## **2.6 Malaysian evidence**

The study to access relationship between firm value and debt is limited in Malaysian environment. Most of the studies referred to determining capital structure, dividend influences and maximizing shareholders wealth.

Rataporn et al (2004) conducted research in determining capital structure in Asia Pacific region. They investigate the determinants of capital structure of firms operating in the Asia Pacific region, in four countries with different legal, financial and institutional environments, namely Thailand, Malaysia, Singapore and Australia. They suggest that Firm size (SIZE) has a positive significant impact on leverage in Asia Pacific region countries, with the exception of Singapore, where firms receive government support and thus face less risk of financial distress whatever their size. Their finding is consistent to with the trade-off and agency theories, which confirms that larger firms tend to have better borrowing capacity relative to smaller firms.

In their research they also found that the impact of growth opportunity (GROW) on leverage is negative for all countries, with the exception of Australia, but it is significant only for Thailand and Singapore. This gives support to the predictions of the agency theory that high growth firms use less debt since they do not wish to expose themselves to possible restrictions imposed by lenders.

Ghafar & Nur Azura (2002) while carry out study to examine the dynamic capital structure choice in the presence of taxes and bankruptcy cost found that bankruptcy cost, age, growth opportunity and lagged leverage ratio significantly explain the dynamic variation of leverage ratio for Malaysian firms. Their findings lead to the implications that firm with high growth opportunity prefers to use debt financing.

Zunaidah & Fauzias (2008) in their research on Malaysia listed companies found that dividend has a significant positive effect to firm value which consistent with the view that dividends mitigate agency costs of free cash flows problems and therefore increase firm value. They apply a cross-sectional analysis for the years 2002 and 2005. Their finding also suggest that dividends among Malaysian listed firms can play its important monitoring role in reducing agency costs. They also found that government ownership has a significant positive effect on firm value whereas foreign ownership has a negative significant effect. In addition their results on ownership concentration and managerial ownership provide insignificant effect to firm value.

Pandey (2004) conducted study to examine the relationship between capital structure and market structure using data from 208 Malaysian companies for the period from 1994 to 2000. His findings provide new insights into the way in which capital structure and market power and capital structure and profitability are related. Capital structure and market power, which measured by Tobin's Q, are shown to have a cubic relationship, due to the complex interaction of market conditions, agency problems and bankruptcy costs. His study finds a saucer shaped relation between capital structure and profitability, due to the interplay of agency costs, costs of external financing and debt tax shield.

An empirical study analyzing the corporate finance and governance structure in Malaysia before and after the financial crisis of 1997, utilizing the agency cost approach is done by Sato (2002). His study is based on the data for 375 non-financial KLSE listed companies during fiscal years 1995-99, the empirical result shows that the commitment of banks to finance corporate debt as well as lending has increased debt ratios. Ownership concentration mitigates conflict between managers and owners. Foreign ownership also contributed to a reduction in the agency costs of equity financing. However, increasing ownership by native Malays (Bumiputera), both the direct and indirect holding of corporate shares, played no significant role in disciplining corporate management. Finally, high dependency on debt led to excessive corporate investment before the crisis. His results imply that the concentration of risks on the banking sector and social policy advocating the dispersion of corporate ownership weakened the corporate governance mechanism, thereby exacerbating the distress of Malaysia's corporate sector during the financial crisis.

Suhaila et al (2008) argue that Malaysia firm's capital structure is unique. Base on their study, the size, measures by the sales figure is negatively related to total debt, suggesting that larger firms is less dependent on leverage financing compared to smaller firm. Their argument is that larger firm preferred equity financing or use it's retain earnings as a major source in its capital structure.

Firm with high liquidity tend to use less debt and provides an indication that firms generally finance their activities by following "pecking order" theory (Suhaila et al., 2008). They argue that firm with high liquidity is able to generate high cash inflows

and in turn, can employ the excess cash inflow to finance operations and investment activities. This firms use less debt compared to those firm that have low liquidity as suggested in “pecking order” theory. As for low liquidity firms, they tend to go for debt in financing their activities.

Besides their findings on relationship between debt and interest coverage ratio which is expressed as net income before taxes divided by interest payment support the findings of previous studies, Suhaila et al (2008) suggest that firms that maintain high interest coverage ratio tend to employ less debt and this implies the ability of the firms to generate high earnings. Thus, negative relationship infers that firms probably use these earnings to finance their activities and use less leverage in its capital structure. Therefore, it implies that firms are following the pecking order financing.