

Trade off theory and pecking order theory



The way we think about capital structure in the modern day is based around the Modigliani and Miller (MM) theorem. It states that a market absent of tax, bankruptcy costs and asymmetric information, and in an efficient market, a company's overall market value will not be affected depending on how it is financed. This then forms the basis of the trade off theory and the pecking order theory. As there is no perfect market conditions each aspect will have an effect based on the way the capital is structured. There are two theories behind the way the structure should be controlled, the pecking order theory, which was created by Stewart C. Myers and Nicolas Majluf in 1984[1], and the trade off theory, which was considered to be pioneered by back to Kraus and Litzenberger but many including Modigliani himself are understood to have developed the theory.

The way that a company's finances are structured is particularly important in light of the latest world recession. As seen in the Asian crisis in 1997 where all share markets became very volatile. It is not that capital structure has a large affect on a causing financial crisis, but rather that it will decide the impact on a firm during the financial crisis. This is relevant especially in the banking industry where assets are put under severe strain during a crisis [2].

I have chosen to approach the issue by setting out the basics of the theory's and their respective advantages and disadvantages, along with the premise behind why they are valid in capital structure. It will be backed by empirical evidence conducted from studies to back up my proposals.

Pecking order theory suggests that companies should prioritise the way in which they raise finance. The pecking order relates to the hierarchy that the

company follows, from the most appropriate to the least. The pecking order claims that the least preferred method is through equity financing. Rather to initially use internal sources and then issue debt until it is no longer suitable. The basic idea was developed around the original the Modigliani and Miller theorem. In contrast though a true market does not poses the same attributes as the MM theory. From the original paper by Myers and Majluf (1984) [4] developed a model that showed that capital structure was designed to limit the inefficiencies of caused by informational asymmetries. The informational asymmetries states that a manager will know more about the assets of a firm and their future growth prospects than the average outside investor, causing inequality in the market.

From Murray Z. Frank Vidhan K. Goyal (2002) [6] I have established that though debt on the other hand is subject to minor adverse problems, equity causes a major adverse selection problem. For an outside investor, equity is construed to be riskier than debt. Equity finance premiums have the higher negative consequence on the firm, and as it is virtually impossible to finance fully from Therefore, an outside investor will demand a higher rate of return on equity than on debt. Thus leading to the pecking order of finance structure.

To confirm the theory on asymmetric information, Viet Anh Dang [5] put forward that this model leads to a potential unfavourable selection problem due to the risk of the method of finance. Resulting in the fact that, investors will predict a decision not to issue securities to signal good news and vice versa. This problem leads to a pooling market equilibrium in which new shares can

only be offered at a marked-down price.

The empirical specification for

the test takes the following form:

$$\Delta D_t = \alpha_0 + \alpha_1 \Delta CF_t + \alpha_2 CF_t + \epsilon_t \quad (III-9)$$

where ΔD_t denotes net debt issued, ΔCF_t cash flow deficit in year t (all variables

in levels) and ϵ_t the well-behaved error term. In equation (III-9), the strict version

of the pecking order theory holds if $\alpha_1 = 0$ and $\alpha_2 = 1$ PO $\Delta D_t = \Delta CF_t$, i. e., when the deficit in cash

flow is entirely offset by the change in debt.

The financing choice should be in favour of the financing instruments that are less risk and less sensitive to mis-pricing and valuation errors. Where again we find that equity is the most prone to inaccuracy followed by debt and finally internal sources which are absent of mistakes in valuation.

The earliest accredited study that found empirical evidence supporting all these theories was conducted by Baskin. J (1989)[6], this then led to further studies, though these have resulted in conflicting evidence as to the legitimacy of the theory. In the original Myers & Majluf (1984)[4] study the table below lists how firms were financially structured

It shows that firms had adopted the pecking order method to a degree by selecting to finance internally first followed by debt then last resort equity finance, but as this is a summary of countries each individual firm will differ. This is the exact problem with the pecking order theory, it isn't individually tailored to best suit each business. This was proved by the table below

Ziad Zurigat's (March 2009) study of the differing effect pecking order theory had on small and large firms. His findings showed, the estimated coefficients are lower for PDEF (0.421 and 0.592) for small and large firms respectively) than for

NDEF (0.569 and 0.648), implying that small and large Jordanian firms are less sensitive in increasing debt for financing than in reducing debt for soaking up surplus. However, as cleared, small Jordanian firms are less sensitive than large ones in increasing debt to finance their positive financial deficit and retiring debt to soak up surplus.

The Trade-Off Theory of Capital Structure employs to the concept that a firm is able to manipulate the levels of debt and equity finance by balancing the costs and benefits to be most advantageously structured. As mentioned in the introduction it goes back to Kraus and Litzenberger who considered a balance between the dead-weight costs of bankruptcy and the tax saving benefits of debt.

To ensure that the debt is balanced the firm will consider the marginal benefits and the marginal costs, as the more debt is taken on the marginal benefit will decrease while the marginal cost will increase. When the marginal benefit is equal to the marginal and the firm's value is optimised, <https://assignbuster.com/trade-off-theory-and-pecking-order-theory/>

there will be a trade off as to the point that debt becomes more detrimental than equity which will form the d/e ratio for the firm.

As stated before under a perfect market condition with no tax the finance structure is irrelevant, but as tax comes into play equity is again favoured in the trade off theory, this is because interest on debt reduces the tax liability of a firm in turn increasing the profits, this is called a tax shield. The cost of financial distress should equal the tax shield at the point of equilibrium.

The custom economic model used when interpreting the trade-off theory is the partial adjustment model (Jalilvand and Harris, 1984; Shyam-Sunder and Myers, 1999; Ozkan, 2001 and Fama and French, 2002), which is made up of two parts; a static part to describe how the ideal amount is determined and the dynamic partial adjustment process:

Where, y_t = a firm's financial ratio in period t ,

y_{t-1} = a firm's financial ratio in period $t-1$,

y_t^* = the target level of a particular ratio

$\hat{\lambda}$ = the speed of adjustment coefficient i. e. how fast the firm returns to its target debt ratio³

Empirical Evidence supporting the trade off theory

Here we can see that from the research done in the paper the table is drawn from, it has been found that there are some explanatory variables which do not act as expected. Although this may be interpreted as the trade off model being inaccurate, there are still factors which do affect the businesses total

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debt as expected. The most important factors drawn from the table above are the business size, total debt ratio, effective tax rate and the non-debt tax shields. The reason why explanatory variables such as growth opportunities do not act as expected may be due to the differing size of businesses examined; splitting the data in to business size may be advantageous here.

The benefit of the trade off theory is that it is unique to each company's situation, for example a company with safe, tangible assets that also generate high levels of income would likely seek a high debt target ratio as to fully Companies with safe, tangible assets and plenty of taxable income to shield ought to have high target ratio to fully utilise the tax shield. In the opposite direct a company that is Unprofitable with risky, intangible assets will usually rely on equity finance as it becomes the less risky option. As the uncertainty surround its income could make the tax shield non existent

One key flaw that was not in the original Modigliani and Miller (1963) study is that of the effect on personal income tax. Miller (1977) took this into account in his study and proved that in fact the total tax saving at the point of equilibrium was zero when income tax increase was applied to the tax shield. The following equations shows that the tax shield can even be detrimental for example if the tax rate on stock is less than the tax rate on bonds the result will be a negative impact on profits. The author further suggests that there should be no optimal debt ratio for any individual firms.

Where GL is the leverage gain for the shareholder

Tc is the corporate tax rate

Tps is the personal income tax for common stock

TPB is the personal income tax for bonds

BL is the market value of the levered firm's debt

There have been questions to the mutual exclusivity of the two theories, Carmen Cotei and Joseph Farhat (2009) studied this theory, and their conclusion was that The empirical results of the factors affecting the proportion of debt financing (reduction) and factors affecting the rate of adjustment imply that the pecking order theory and the trade-off theory are not mutually exclusive. Firms may strive for a target debt ratio range and within this range, the pecking order behavior may describe incremental decisions or, over time, firms may switch between target adjustment and pecking order behavior.

Conclusion – reflection on theories – which is best suited? Does it differ between businesses, are they both legitimate ways of structuring capital?

In reflection it is clear that both theories offer a potential theory of dealing with capital structure, but the empirical evidence seems to suggest that the trade off theory is the more well rounded option. As it holds well in the custom economic model, outperforming the pecking order model in the key areas. There has been also some convincing proof in favour of the relationships between gearing and the conventional determining factors (except profitability), as predicted by trade-off structure. Non-debt tax shields and growth opportunities have been argued to be inversely related

to debt ratio, while collateral value of assets and size are found to have positive effects upon gearing.

I do believe that to some degree the theories are simply a base to capital structure, and that each individual company must do its own assessment on the best way to structure capital in order to produce the best results.