

# A review of capital structure theories



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## **1. 0 Introduction**

One of the most contentious financial issues that have provoked intense academic research during the last decades is the theory of capital structure. Capital structure can be defined as a ‘ Mix of different securities issued by a firm’ (Brealey and Myers, 2003). Simply speaking, capital structure mainly contains two elements, debt and equity. In 1958, through combining tax and debt factors in a simple model to price the value of a company, Modigliani and Miller firstly begin to explore a modern capital structure theory, and their work inspired this area study.

However, the MM theory has no practical use because it lacks of direct guidance for companies to determine capital structure in real life (Baxter, 1967; Sarig and Warga, 1989; Vernimmen et al, 2005). During the past years, researchers strived to establish a more reasonable capital structure theory that can be put into practices efficiently, and they attempted to expand debt ratio and tax advantage factors into a new area. Myers (1984) states that only practical capital structure theories, which introducing adjustment cost that includes agency cost and information asymmetry problems, could provide a useful guidance for firms to determine their capital structure. However, from recent studies, Myers (2001) believes that how information differences and agency costs influence the capital structure is still an open question.

From this perspective, it is very important to review the development of these two factors which make theoretical research having a strong relationship with reality. Thus, this project will summarize the capital structure theories orientated by agency cost and asymmetric information

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from extant literature. Also some gaps and conflicts among theories of capital structure will be found and discussed in order to further improve this area study.

The rest of this project is arranged as follows. Section 2 will present the theories based on agency costs that causes the conflicts between equity holders and debt holders or managers. Section 3 will illustrate from two areas, interplay of capital structure and investment, followed by signal effect of debt ratio, to show the theories based on asymmetric information. In conclusion, Section 4 will summarize the entire essay and suggest further research direction of capital structure theory.

## **2. 0 Capital structure theories based on agency costs**

Although Berry and Means (1931, cited in Myers, 2001) state an adverse relationship between the separated ownership and corporate control status, it commonly admits that Jensen and Meckling (1976) firstly conducted the research in how agency costs determine capital structure (Harris and Raviv, 1991). Over the past decades, researchers have tried to add agency costs to capital structure models (Harris and Raviv, 1991).

The perfect alignment between firm investors and firm agencies, such as managers, does not exist (Myers, 2001). According to Jensen and Meckling (1976), company agents, the managers, always emphasize on their own interests, such as high salary and reputation. Also these company agents use ‘entrenching investments’, which make the asset and capital structure orientated by the managements knowledge and skills, to increase their bargaining power with the true company holders (Chen and Kensinger,

1992). However, Myers (2001) believes that the firm holders can reduce such transferred value through using different kinds of methods of control and supervising, but he further points out the weakness that these methods are expensive and reduce returns. As a result, the perfect monitoring system is out of work, and agency costs are produced from these conflicts.

According to Jensen and Meckling (1976), the conflicts between investors and agencies are generally divided into two types. The first conflict occurs between debt holders and equity holders, and the second conflict is from between equity holders and managers. Consequently, all the capital structure theories based on agency costs can be also classified based on these two conflicts. In the rest of this section, each individual conflict will be separately discussed.

### **2. 1 Conflicts between Debt holders and Equity holders**

Jensen and Meckling (1976) point out that agency costs problems happen in determining the structure of a firms' capital when the conflict between debt holders and equity holders is caused by debt contracts. Similar to Jensen and Meckling's conclusion, Myers (1977) observes that since equity holders bear the whole cost of the investment and debt holders get the main part of the profits from the investment, equity holders may have no interest in investing in value-increasing businesses when companies are likely to face bankruptcy in the short term future. Thus, if debt occupies a large part of firms' capital, it will lead to the rejection of investing in more value-increased business projects.

However, in 1991, Harris and Raviv cast a contrasting opinion to adjust the capital structure theory based on this conflict. They point out that most debt contracts give equity holders a push power to invest sub-optimally investment project. If the investment fails, due to limited liability, debt holders bear the consequences of a decline of the debt value, but equity holders get most of yields if the investment could generate returns above the debt par value. In order to prevent debt holders from receiving unfair treatment, equity holders normally get less for the debt than original expectation from debt holders. Thus, the agency costs are created by equity holders who issue the debt rather than debt holders' reason (Harris and Raviv, 1991).

Tradeoff capital structure theory has a basic and strong relationship with this type of agency costs. However, different researchers hold various explanations of the relationship. Myers (1977) points out the debt cost reason, Green (1984) announces that convertible bonds can reduce the asset substitution problem which comes from the tradeoff theory, Stulz and Johnson (1985) consider about collateral effect. In the end, only Diamond model (1989) is widely accepted. If Equity holders do not consider reputational reason, they are willing to trade relatively safe projects, but this activity will lead to less debt financing (Diamond, 1989; Mike et al, 1997). Diamond model (1989) assumes two tradeoffs, risky and risk-free, to show that the debt repayment should consider both possible investment plans. Furthermore, Mike et al (1997) use empirical evidence to indicate how to use debt to trade off these two optional investment plans. Moreover, in 1991, Harris and Raviv expanded Diamond's model to three investment choices.

They point out that one choice of investment can only contain the risk-free project, one option can invest in risk project and the last option combine both risk-free and risk projects. In fact, since the reputation factor is vital for a manager, managers are willing to choose risk-free investment projects that have more possibility of success. Consequently, the amount of debt is often reduced by managers.

## **2. 2 Conflicts between Managers and Equity holders**

Jensen and Meckling (1976) also states that conflicts naturally arise between managers and equity holders since managers just hold parts of the whole firm's capital. Consequently, firm managers only benefit from part of the profit generated by their business activities, but they simultaneously bear the whole cost of these actions. However, Myer (2001) casts a different opinion about the reason of the conflict and claims that in fact, managers never bear the full costs of the business activities unless the manager is also the firm's investor. He further maintains that the real cause of the conflict is due to an imperfect observable reward system between investors and managers, because both parties have different standpoints to measure their own interest, especially the rewards.

There are two dominant models, the Harris and Raviv model and the Stulz model, to explain this area. Although both models have a common assumption that labor contracts cannot address the conflict between managers and equity holders, both models hold different opinions about debt release and the problem in the drawbacks of debt in the capital structure. According to Harris and Raviv model (1990), managers are designed to want to continue the company's current operations all the time even if equity

holders prefer the liquidation of the company. However, in Stulz model (1990), managers are keen to invest all available funds even if the equity holders can benefit from paying out cash.

Moreover, Harris and Raviv (1990) point out that debt alleviates the agency costs and the conflict results from giving equity holders the chance to speed up liquidation when cash flows are hard to predict. In contrast, Stulz (1990) based on Jensen model (1986) concludes that debt payments reduce free cash flow. He further maintains that the debt costs reduce the available funds of a profitable project, since the costs result from debt payment that more than exhausts free cash flow. As a result, capital structure can be determined by trading off debt advantages against debt costs.

### **3. 0 Capital structure theories based on asymmetric information**

The development of information modeling provides a possible approach to explain capital structure. In these capital structure theories, company insiders, such as managers, are assumed to obtain all private information about the investment opportunities or investment return. Some theories try to find out how the allocation of capital structure passes the insiders' information of a firm to outsiders. Meanwhile, in other theories, the purpose of the capital structure is to improve efficiencies in the company's investment activities under asymmetric information (Vernimmen et al, 2005). The rest of this section will be divided into two subsections based on both sets of theories mentioned above.

#### **3. 1 Interplay of capital structure and investment**

This area of research begins with two vital academic papers, Myers and Majluf (1984) and Myers (1984). According to Myers and Majluf (1984), the <https://assignbuster.com/a-review-of-capital-structure-theories/>

firm's equity will be mispriced by the market when investors obtain less information of one firm's assets value than the firm's current insiders.

Moreover, they further point out that if firms issue equity to absorb capital for a new investment, mispricing may make a net loss to the firm's current shareholders. In Myers second paper (1984), he formally defines this as a pecking order capital structure theory. In this theory, a firm's capital structure is determined by the purpose of the company to finance new investment.

Furthermore, with the development of the Myers' pecking order theory, researchers find some vital empirical implications of this theory. Krasker (1986) confirms the results of Myers' theory (1984) and also shows that the larger the equity issue, the worse the asymmetric information problem and the firm with worse asymmetric information problems will often have a more under price problem. Ebsen (1986) finds that if managers could trade their firms' new equity, the under price problem caused by asymmetric information will be reduced. Then Dierkens (1991) argues that the under price problem can be solved by information releases such as annual financial statement reports.

However, some economists cast a doubt on the pecking order theory. These theoretical researches have a common feature that they all put investment situations under the pecking order theory but provide more finance choices for a firm. Brennan and Kraus (1987) state that it is not necessary for a firm to have a preference for financing through debt over equity and the under price problem can be addressed through various financing options and simple capital structure rather than solving asymmetry information problem.



Their findings are also confirmed by Noe (1988). Moreover, in 1993, Nachman and Noe put Brennan and Kraus theory into practice and also come to the same conclusion.

### **3. 2 Signal effect of debt ratio**

After discussing models which investigate the interplay of capital structure and investment, it is vital to turn to models in which investment is a fixed factor and only capital structure is regarded as a private information signal.

The investigation of this area starts with the work of Ross (1977). According to Ross's capital structure theory, only firms' insiders, such as managers, can get full information of the firm's return distribution, but investors cannot. The main empirical implication of Ross theory is that there is a positive relation between firm value and debt ratio. However, further research combines debt and dividend policy together to show an opposite opinion that a firm value is determined by dividend and debt ratio rather than a single factor of debt ratio (Vernimem et al, 2005). Furthermore, in 1982, Heinkel improve Ross model. His model is similar to Ross but does not have the same assumption. Instead, high market value firms are assumed to have high total value but low quality debt, thus high market value firms has high equity value. This finding has been consistent with further capital structure theoretical research (Franke, 1987; John, 1987).

Another debt ratio signal model is built by Poitevin (1989). He firstly points out the potential competition between an entrant and an incumbent under the asymmetric information. According to Poitevin model (1989), the marginal costs of entrant are private information obtained only by the

entrant, and in a stable situation, the capital of high cost entrants does not issue any debt while low cost entrants never issue equity.

However, Glazer and Israel (1990) cast a different conclusion against Poitevin. They maintain that low cost entrants are willing to issue equity since they can much easier use this finance approach to reduce marginal production costs than the high cost entrants. Nevertheless, Harris and Raviv (1991) point out the weakness of the Glazer and Israel model is that they ignore the dividends finance factor which has the same signal effect as debt. Normally, a capital structure theory should combine various basic finance factors together. In the end, Glazer and Israel recognize this weakness and claim that their results cannot be considered as a capital structure theory.

#### **4. 0 Summary and Conclusion**

To sum up, this literature review of capital structure theories is element arranged. The set of theories based on agency costs and the set of theories based on asymmetric information are separately presented in the passage. Moreover, each set of theories can also be divided into several subsections. Agency costs cause two types of conflicts among stakeholders, and these conflicts affect a firm's choice of capital structure. Moreover, capital structure theories show that under an asymmetric information situation, capital structure has a strong reaction with investment activities and debt ratio has a signaling utility for the determination of capital structure.

The range of the selected paper is from 1958 to 2005. These papers cover majority parts of the study including agency costs, interplay of capital structure and investment, imperfect information situations and debt signal

effect. Also these papers are all from core financial journals, e. g. Journal of Finance, Journal of Financial Economics, Journal of Financial Management, American Economic Review and Review of Financial Studies. Thus, this literature review can be considered to be efficient and thorough.

This essay covers a considerable number of literatures which can present modern theoretical findings of capital structure. However, it should be noticed that the blooming period of capital structure theory is between 1970s-1980s. After 1990, the theoretical research seems to have developed very slowly, and the majority of papers in this field just review former findings since few new theories of capital structure come out.

The direction of the theoretical research of capital structure should incline to be more practical. The future study should be extended in two areas. (1) Add psychosocial conditions and assumptions to improve extant capital structure theories. It is important to acknowledge that most capital structure theories cannot be used by companies in real life since these theories lack of more reality factors. Thus, behavior finance could provide a new approach to extant theories. (2) Combine agency costs and asymmetric information problems together in one capital structure theory. Currently, both problems are discussed separately. However, companies often suffer from these two problems at the same time when they determine their capital structure. Consequently, it is necessary to set up a new theory based on both problems.

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