

AGENCY THEORY AND OPTIMAL CAPITAL STRUCTURE

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Abstract

In the corporate finance, the agency theory tries to explain the behavior of various agents that intervene in the company's funding (managers, shareholders and debt holders) and to analyze the impact of these behaviors on the financial structure.

Accordingly to the agency theory, the optimal financial structure of the capital results from a compromise between various funding options (equity, debts and hybrid securities) that allow the reconciliation of conflicts of interests between the capital suppliers (shareholders and creditors) and managers.

The indebtedness allows shareholders and managers to adhere to same objectives, but causes other conflicts (between managers and shareholders, on the one hand, and creditors, on the other side). The optimal level of indebtedness is the one that allows the minimization of overall agency costs.

Keywords: *agency theory, agency relationship, agency costs, optimal capital structure, equity, debts*

Introduction

The normative agency theory, named also the Principal-Agent Model, has as objective to issue optimal agreements between partners and to explain their behavior as soon as an agency relationship begins. An agency relationship is an agreement in which one or more persons, called principal(s), engages another person, called agent, to perform some service on their behalf which involves delegating some decision-making authority to the agent. The agency theory assumes that the interests of principal and agent diverge.

In a company there are many agency relationships: between shareholders (principal) and managers (agent); between a creditor (principal) and shareholders and managers (agents); between an employer (principal) and employee (agent), etc. The firm can be perceived as an assembly of principal – agent relationships, more or less ranked, in which the agents can also exercise the principal function in other relationships. Every stakeholder or group of stakeholders will attempt to act in order to satisfy its own interests:

- For the principal, the issue is to determine appropriate incentives for the agent and optimal control procedures designed to limit opportunistic action by the agent;
- For the agent, the issue is to relate the effort with the information¹ depending on which the primary judgment from the principal will be made; a great effort that cannot be reported to the principal will be useless but, on the opposite, a small effort will not be well seen.

A company's behavior is comparable to the market's one, meaning that is the result of a complex balancing process.²

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¹ by "information" is needed to understand all the elements that allow an organization to evaluate its members activity (presence, activity reports, financial and accounting statements; management control indicators, reputation etc.).

² M. Jensen, W. Meckling, "Theory of the firm: managerial behavior, Agency costs and ownership structure", Journal of Financial Economics, 3-4, 1976, p. 305-360.

In finance, the sources of conflict can be many and relate to the relatively classic financial problems: dividends payment policies, investment decision, determining the optimal capital structure etc.

The structure of the capital can affect two types of conflict of interests:

- Conflict of interests between managers and shareholders;
- Conflict of interests between shareholders and managers, on one side, and creditor, on the other side.

The reconciliation of these conflicts will determine the optimal capital structure that will allow the maximization of company's global value.

1. Equity - debts conflicts and optimal capital structure

An agency problem arises when managers own only a fraction of the shares of the firm. This partial ownership may cause managers to work less vigorously than otherwise and / or to consume more perquisites (luxurious offices, company cars, expensive hotels) because the majority owners bear most of the cost.

The managers can be motivated to act in the interests of the shareholders through contracts that repay the managers by the value of the company's shares. In addition, their decisions can be determined by the desire to keep their professional reputation. However none of these mechanisms is perfect.

The agency theory proposes the indebtedness as way to solve potential conflicts between managers and shareholders. The indebtedness has advantages, as has costs.

The advantages of indebtedness emerge on two levels:

- Indebtedness, through regular payments of capital rates and interest that result from it, becomes a mean of control for managers investment policies;
- Indebtedness allows the shareholders to discipline the managers and hold more information regarding the company's management.

There are three types of costs of indebtedness:

- Shareholders can give up investment projects that have positive net present value, if the difference between these and the present value of the amounts needed to be reimbursed is negative;
- The indebtedness can incite the shareholders to select risky investment projects;
- The costs of shareholders' investigations over the nature of the debts employed by the managers.

In order to maximize the value of the company, through resolving the conflicts of interests, is necessary to be taken into consideration the advantages and costs of indebtedness and own funds recourse.

The first researches in this manner were developed by M. Jensen and W. Meckling in 1976. They highlighted an optimal financial structure resulted from two divergences²:

- In the presence of income tax, the managers tend to indebt, because the financial expenses are deductible;
- The indebtedness attracts agency costs of three types: control and justification costs; high risk investments remuneration costs, demanded by the creditors; bankruptcy costs.

Companies thus have interest to indebt until the point on the increase of its value owed to the financed investments will be equal to the marginal costs generated by the indebtedness.

Therefore, the optimal level of indebtedness is the one that allows the minimization of overall agency costs, meaning the costs related to indebtedness and to appeal to external own funds.

² S. Rifki, A. Sadq "La structure financière de la firme a-t-elle une influence sur sa valeur?", Problèmes économiques, nr. 2728/2001, p. 28.

The indebtedness allows shareholders and managers to adhere to same objectives.

For managers, the indebtedness has the power to incite to performance. More the company is indebted, more its bankruptcy risk is higher. For managers the bankruptcy means generally losing their jobs, the remunerations and other advantages. This is considered to be a sufficient thread to incite to efficient management that will bring maximum cash-flow in order to reimburse the debt, and to lead to the choice of investments projects with positive net present value. In the absence of indebtedness, the bankruptcy risk is limited but the market will assume that the managers do not aim maximum performance. The value of the company will decrease and, if there exists a managers' co-interest system (remuneration related to the value of company shares), they will lose.

For the shareholders, the indebtedness has a leverage effect over the financial return. In addition to the new shares issue funding, applying to a loan has the advantage that it does not lead to the dilution of the share capital.

Indebtedness generates new conflicts (between shareholders and managers, on one side, and creditors on the other side) and costs: bankruptcy and reorganization costs, costs for surveillance over the managers by the creditors, justification cost for managers to justify in front of creditors.

Allying, shareholders and managers can divert in their advantage part from the company's assets to the detriment of the creditors. For example, they can lead a policy of risky investments or can decide to take a loan from which a part can be redistributed as dividends.

In the situation of a company with high debts reported to the equity, the owners could be tempted by risky investments. Shareholders will practically benefit from all the advantages if the investments turn out to be profitable. The creditors know this situation and can include in the loan agreement articles that can restrain the managers' abilities to conduct risky investment on the duration of the loan agreement.

In order to find solutions for the emerging conflicts between the shareholders and managers on one side and the creditors on the other side, new means to restrain the shareholders and managers to acquire the company's assets must be provided. Therefore there is needed to limit or avoid the decisions that raise the risk of company's assets or lead to sub-investment and tend to reduce the value of existing debts, even though this aspect prevents a decrease of the company's value.

Beside various juridical subtleties that can be inserted in the loan agreements, in practice we also find other solutions³:

- Real or insurance guarantees clauses that suppress the temptation of giving up project with positive net present value, but reduce the variation of future cash-flows in order to avoid a transfer of wealth to borrowers.

- Certain loan agreements provide clauses that restrain the liberty of the company's managers to indebt more. This clauses, in generally set a maximum level of certain rates (debts/equity, financial expenses/turnover, debts/gross accumulation margin, chargeability/cash, etc). When these values are exceeded, the loan can immediately become chargeable.

- Paying dividends to shareholders decreases the net assets of the company and so the guarantees for the creditors. Because of this, some clauses have as subject the limitation of dividend payment on the duration of receivables. Also, the reserves distribution or reimbursements of own shares by the company are limited or forbidden.

- Harmonizing of assets and liabilities maturity aims the prohibition of de-investment behavior which, resulting from shareholders refuses to act in the creditors' interests, would have as result the decrease of company's global value.

³ G. Hirigoyen, J-P. Jobard "Financement de l'entreprise: évolution récente et perspectives nouvelles", Encyclopédie de gestion, Economica, Paris, 1989, p. 1226 – 1228.

- Resorting to indebtedness on short term, constantly renewable, can be assimilated to a long term disguised liability, designed for example to finance the global treasury shortage. But the investment decision becomes later to the short term liability maturity. The creditors have therefore the possibility to sanction at any time the management of shareholders and managers. In consequence, short term indebtedness incites them to seek out more rentable investment projects.

- Convertible to shares bonds or bonds with subscription receipts issuance is another solution to solving the conflicts between shareholders and managers on one side and creditor on the other side. The convertibility clause or the use of the subscription receipt into shares option can determine the current shareholders to change the structure and the portfolio of assets risks in order to increasing the long term profit because this could go to the bond owners, who are potentially shareholders. These clauses can incite to choosing projects that contribute more to the increase of company's value rather than their own interest.

- Resorting to lease can be interpreted as an alternative to giving real guarantees, aiming to the limitation of risks for substitution of assets and sub-investments. However, lease agreement implies specific agency costs. Therefore, the potential costs because the bad maintenance general tendency of leasers can be reduced by a high value guarantee deposit or a flat rate maintenance agreement. Also, the purchase option at the end of the contract can be considered to be an agency cost reduction option.

2. Agency costs depending on funding sources

Determining the optimal financial structure doesn't imply only the settlement of debts and own funds but also determining the part of equity owned by managers and the one owned by other shareholders. Therefore there are three variables:

- S_i = internal own funds (owned by managers);
- S_e = external own funds (owned by other shareholders);
- D = debts

The total amount of own funds is $S = S_i + S_e$ and the total value of the company is $V = S + D$.

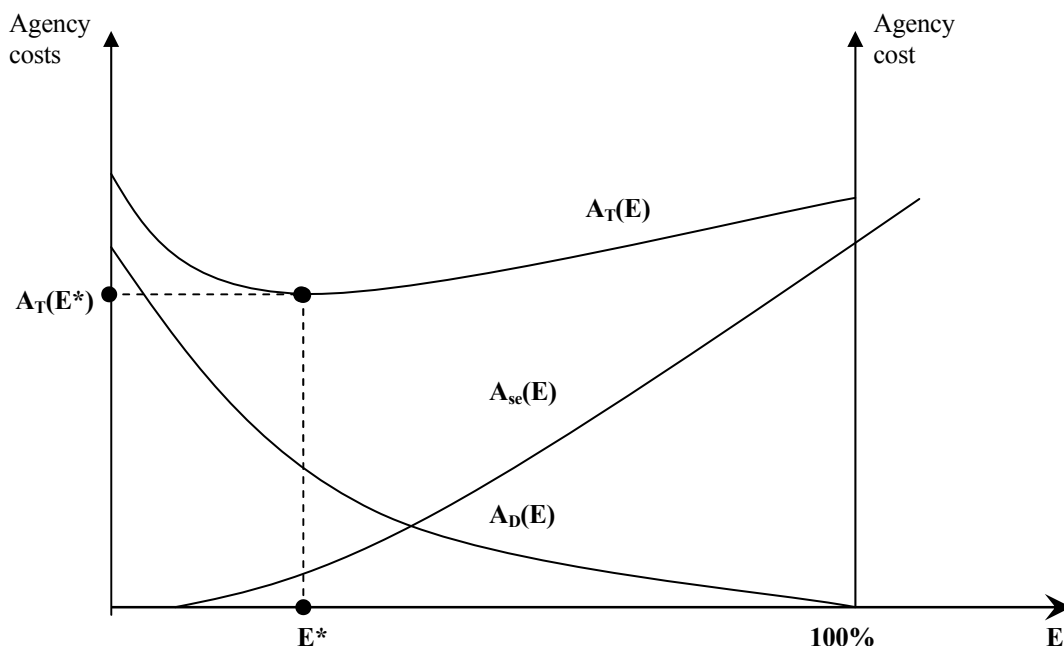
We will determine the optimal rate of external own funds reported to debts $\left(\frac{S_e}{D}\right)$, assuming that the size of the company and the amount of needed external funding ($S_e + D$) are constant.

Knowing that an amount of external funding is needed to be settled, the issue is to determine the optimal part (E^*) of external own funds in the total external funding:

$$E^* = \frac{S_e}{S_e + D}$$

In the rational expectancy markets, the prices set to certain assets such as bonds (for debts) or shares (for own funds) issued by the company reflects correct estimations of control costs and wealth transfer costs determined by the agency relationship. Furthermore, in case of conflict of interests, the one that will pay for these agency costs is the managing shareholder. On his side of view, for a given level of internal own funds, the optimum amount of external own funds in the total external funding must correspond to an E^* level for which the total agency costs, noted $A_T(E^*)$ are minimal. This situation is illustrated at figure no.1.

Fig. no. 1. Agency costs depending on funding sources



The agency costs graphically represented are:

- $A_{sc}(E)$ = agency cost depending on E , associated to own external funds;
- $A_D(E)$ = agency cost also depending on E , associated to debts. To be remarked that when maximum (100%) is reached for every of the two external funding sources, $A_D(E)$ is lower than $A_{sc}(E)$;
- $A_T(E)$ = total agency costs, equal to $A_{sc}(E) + A_D(E)$.

We will attempt to interpret these functions, on managerial behavior related to agency cost, presented in the previous section.

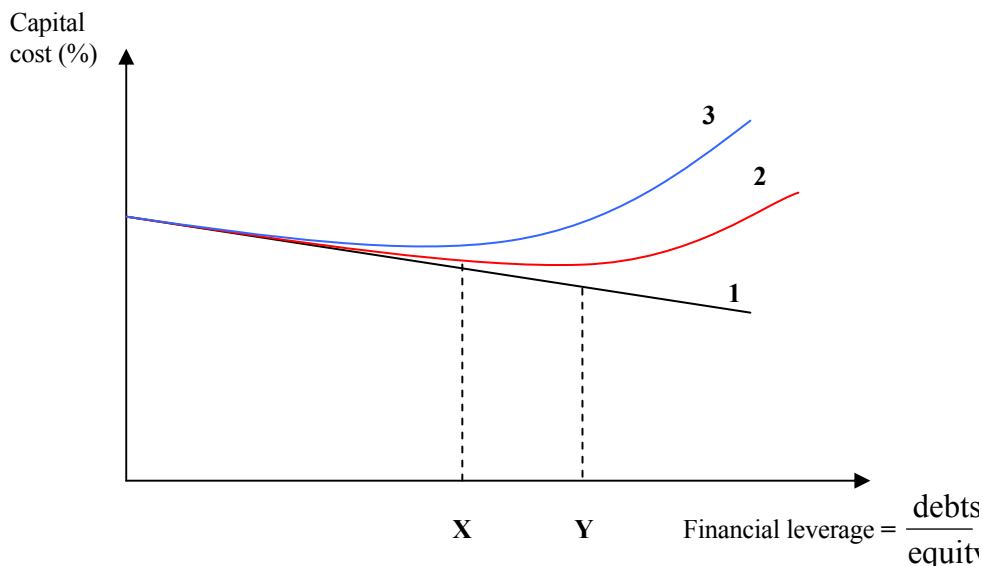
Thereby, for $A_{sc}(E)$, when $E = 0$ (meaning there are no external own funds), the manager isn't motivated to exploit external own funds. Besides, in this extreme case, any change in the value of the external own funds is equivalent to the change of value in the own funds owned by the manager; therefore the agency costs are null. Hence, any increase of E implies a manager's increase of motivation and for $E=100\%$, the agency costs will be maximal.

For $A_D(E)$, representing the agency cost resulted from the indebtedness, it must be noted that this cost exist only because the manager is tempted to transfer a part of the profit from the benefit of the creditors to itself, given that this transfer increases the own fund value.

Starting from this, in order to explain the $A_D(E)$ function behavior we will apply the reverse reasoning used in the $A_{sc}(E)$ function analysis.

This allows the representation of a curve for total agency cost whose minimum indicate an optimal financial structure of the capital. If we take into consideration the fiscal effects of indebtedness (reducing the income tax amount owed to the deductibility of interest in the determination of taxable income), we got a new global representation of indebtedness limit (figure no.2).

Fig. no. 2. Capital cost



- 1 = capital cost considering fiscal effects;
- 2 = capital cost considering fiscal effects and bankruptcy costs;
- 3 = capital cost considering fiscal effects, bankruptcy costs and agency costs.

This graph allows understanding why the companies do not indebt to the maximum despite the fiscal advantages of indebtedness. If we take into consideration the fact that bankruptcy costs are as high as the financial leverage (rate of indebt) is higher, the optimal financial structure will be at Y level. If we also take into consideration the agency costs, which increase as the level of indebtedness increases, the weighted average cost of capital will increase and the optimal financial structure will be at a lower level (X).

Conclusions

In the financial domain the agency theory re-analyses the issue of optimal financial structure and stands as ground for new financial products development.

The agency theory starts with the hypothesis that stakeholders (managers, shareholders, creditors, employees, customers, suppliers, state etc.) have specific objectives and interests that are not necessarily spontaneous reconcilable; in consequence there are conflicts between them, especially in the large companies, based on the separation between ownership and management.

Accordingly to the agency theory, the optimal financial structure of the capital results from a compromise between various funding options (own funds or loans) that allow the reconciliation of conflicts of interests between the capital suppliers (shareholders and creditors) and managers.

The structure of the capital can affect the value of the company, by acting on the ways of managerial motivation and inciting the shareholders and creditors to supervise the managers and limit their abuses.

The agency relationships are mostly based on the theory of options. The junction between the two theories is proven useful for understanding the investment and funding behavior and for explaining the existence and role of some specific financial products such as bond convertible to shares or bonds with share subscription receipts, etc.

The agency theory has some limitations. It often gives partial models for identifying potential sources of conflicts and for finding appropriate solutions (sometimes idealistic). It is to be remarked that in order to formalize approached issues, some complex conditions have to be fulfilled. These conditions can refer, for example, to the sequences of events and decisions that are needed to be respected, in the simplified frame of single period, in order to highlight the sub-optimal investments issue.

The main limitation of the agency theory remains the insufficient studying or empirical verification of theoretical concepts. This methodological and scientific gap is firstly explained by the difficulty to measure the agency costs.

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