

**CAPITAL STRUCTURE AND SOURCES OF FUNDS WITH PARTICULAR
REFERENCE TO PORTUGUESE INDUSTRIAL COMPANIES.**

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FIRST PAGE

To test the static trade-off theory and the pecking order theory in the publicly traded Portuguese industrial companies is the essential purpose of this project. By testing these two of the most important theories of capital structure, we will be able to better understand which criteria financial managers of these companies follow when they have to make financing decisions.

This dissertation comprises four different parts. The first one includes the two first chapters: the chapter of introduction – where the general ideas about the project can be found – and the chapter addressing the methodology used.

The second part constitutes the theoretical approach, including the chapter where the review of the relevant literature is addressed.

The third part includes the chapter where the results of the field research are exposed.

Finally, the fourth part includes the chapter where the conclusions reached by comparing the two theories analyzed in the second part with the results exposed in the third part are addressed, and also includes a checklist of factors managers should take into account when they face financing decisions.

SECOND PAGE

By comparing the survey results exposed in the third part of the report with the static trade-off and pecking order theories analyzed in the second part, four main conclusions were reached:

1. Portuguese financial managers of publicly traded industrial companies are more likely to follow a financing hierarchy than to establish a target debt-to-equity ratio.
2. Firms following a financing hierarchy prefer to finance investment opportunities with internal equity (retained earnings). If external financing is required, they prefer straight debt first and convertible debt after. Finally, firms only issue external equity when the previous sources of funds considered are exhausted.
3. Financial distress and bankruptcy costs seem to be the major concern to the financial managers included in the sample, when they are facing financing decisions.
4. The dividend policy, as far as following an established payout ratio is concerned, seems to be felt by managers as the most flexible one. The majority of managers prefer to deviate from established payout ratios than to deviate from the firm's capital structure policy, sell-off assets or simply put aside an attractive investment opportunity.

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FIRST PART – INTRODUCTION AND METHODOLOGY USED

CHAPTER I – INTRODUCTION

This project is concerned with company capital structure. Much has been written about this subject and the problem is to find anything new to say. A desk study would necessarily involve a review of only existing work and the only way to add something new would be by making some sort of fresh investigation.

Thus, the solution was to follow a practical approach based on a field work. Only this kind of approach could be interesting and would enable us to combine the two characteristics we would like our work to have: a consistent knowledge of the relevant literature about the theme – leading us to a strong control of the theoretical issues involved – and a practical approach – enabling us to feel that the theoretical issues must have adherence to reality.

At this point, another question had to be answered: what reality should be our target? Of course the best solution would be to approach worldwide reality, but was not viable. So, we decide to choose the Portuguese reality because it is the one we know best and, by approaching it, we could be giving some new insights, not by trying to solve the “*capital structure puzzle*” but for a better understanding of the criteria Portuguese industrial companies follow when they face financing decisions. The insights we try to bring with this study are not, therefore, situated on the theoretical ground; on the contrary, they are based on the results of the field research and on the comparison of these findings with the main theories of capital structure found in the literature.

So, the objective of this dissertation is to test the main capital structure theories on Portuguese industrial companies. We wanted to know how the financial managers of these companies decide when they have to face financing decisions. We wanted to know if they really establish and follow an ideal debt-to-equity ratio or, on the contrary, if they think that a pecking order must be followed where the most advantageous sources of funds are exhausted before considering using the others. We wanted to know if they issue debt rather than equity when external finance is needed, or if it is the other way around.

What we are going to find in this report is the answer to these questions, as well as others. We have analyzed a number of possible alternatives of how we could get answers to these questions, and we have decided to formulate and send a questionnaire to the financial managers of all the Portuguese industrial companies quoted on the stock exchange. In the next chapter, we will explain why we have chosen this alternative instead of others.

Capital structure is not an easy subject to study. It is a field where lots of contributions on how to solve the “puzzle” have been made throughout the years. Even before MM published their first paper, different streams of opinion have been formed in order to explain capital structure practice. Many empirical studies have been carried-out with the purpose of testing hypothesis, some of them based on strong sets of axioms, others less sophisticated. The same hypothesis has already been tested on several different countries and using different approaches. A lot of work has been made but the truth is that, even though we know some things about capital structure, we are far from knowing the whole story. The subject of capital structure is much more an enigma than, for example, investment analysis.

Of course we are not going to solve the capital structure “puzzle”. We do not want – first of all because we do not know how – to make contributions to one or some of the theories that already exist. We just want to test, mainly, two of them on the Portuguese reality. We decided to test the static trade-off theory and the pecking order hypothesis because they are the ones considered the most important until now.

Although the work of Modigliani and Miller – and further developments by Miller – are historically very important since they have set the basis to all the capital structure debate, we can surely say that their conclusions do not apply to Portuguese reality (and, as far as we know, they do not apply to any reality).

So, we have devoted the third chapter to the exposition of these relevant theories. We decided to also explain MM and Miller contributions because they comprise fundamental issues for a thorough understanding of the capital structure debate. After, we present the results of our field research based on the questionnaire we have sent to the companies. Finally, in the last part of our project, we transmit the conclusions reached through the comparison between the theories exposed and the survey results and we approach relevant issues we think a financial manager should be aware before making financing decisions.

CHAPTER II – THE METHODOLOGY USED

More than addressing the methodology we have used, we would like this chapter to tell the story of our work throughout the project period. As we said previously, this project sets its basis on three different parts: a theoretical approach, a field research and a final part where the conclusions reached through the comparison of the theories with the survey results are addressed.

We began by conducting a literature survey using the library data base and selected relevant articles and books as a basis for our theoretical discussion. This discussion is the topic of the next chapter.

Simultaneously, during the month of July, we decided to send a questionnaire to all the Portuguese industrial companies quoted in the Lisbon or Oporto Stock Exchanges. We have decided only to consider quoted companies because we wanted to be sure that – in our sample of companies – managers generally act in the best interests of their shareholders; thus, if we have decided to analyze only industrial companies because, as justified by Pinegar and Wilbricht (21) in a similar survey they have made, it seemed more appropriate to include only that type of companies that are not heavy regulated. So, financial companies and utilities, whose financing decisions are least likely to convey new information to the market, were excluded.

As we said in the previous chapter, we have considered different alternatives in how to approach the field research. We thought about the possibility of getting appointments with the financial managers of the Portuguese industrial companies quoted in the Stock Exchanges and ask the questions directly to them. But soon we realized that it would be impossible to analyze all the 72 industrial companies publicly traded and managed to have appointments with 72 managers; and we would have to travel around the country for, at least, two months. It was not possible.

Another alternative was trying to select a sample of the 72 companies and get appointments with the financial managers of the companies selected. We could still get some financial data from these companies and combine the information provided by these two different sources. However, since the beginning, we have doubted that a statistically significant study could be made analyzing only a small number of companies. Most likely, this sample would not be big enough to explain, with a good degree of confidence, the Portuguese reality.

So, we decided to take a risk. We decided to send a questionnaire to all the 72 companies in question. Of course we knew from the beginning that we would not receive 72 fulfilled questionnaires one month later. We knew that a good proportion of financial managers would not waste five minutes to answer the questionnaire. Thus, we thought that the questionnaire would have to be brief, not exceeding one page. It had to be clear and simple to understand. It would only include four questions and should be easy to answer. Bearing in mind this set of conditions, we have formulated the questionnaire listed in the appendix.

We have received 35 fulfilled questionnaires explaining the aims of the project and emphasizing the importance of achieving good proportions of answers. Without the signatures of the Chancellor of Portuguese University and the Head of the Business Studies Department included in the letter, we are sure that the answering ratio would not be so overwhelming.

Finally, we spent the month of September finishing the review of the literature, analyzing the data provided by the questionnaires, reaching conclusions and writing down this project. Even though we felt that writing a dissertation in a foreign language is a hard task, we hope the ideas we want to transmit through these pages are exposed in a clear way.

The following chapters constitute the body of this report. So, get ready, the show is about to begin.

SECOND PART – THE THEORETICAL APPROACH

CHAPTER III – A REVIEW OF THE LITERATURE: THE MM THEORY AND FURTHER DEVELOPMENTS BY MILLER, THE STATIC TRADE-OFF THEORY AND THE PECKING ORDER THEORY.

SECTION I – INTRODUCTION

In this chapter we are going to examine the most relevant theories of capital structure. Capital structure is defined by Brealey and Myers (4) as being the firm's mix of different securities or, if we prefer, capital decisions are the ones which determine the balance of debt and equity, as Pike and Dobbins (20) stated.

Capital structure decision is a financing decision, not an investment one. When a firm faces an attractive investment opportunity, managers have to decide how this opportunity is going to be financed. Since capital markets generally offer a wide range of solutions, managers should consider the ones which bring bigger contributions to the value of the firm. However, the first decision managers have to make is if the firm is going to issue debt or equity or, on the contrary, if the investment will be financed by retained earnings (internal equity). The problem is that, not rarely, firms do not have sufficient internal equity to finance those opportunities, hence having to search for external funds. So, should managers issue debt rather than equity or should they finance the investment with retained earnings (if available)? Or, on the contrary, should the firm prefer equity to debt, or even if retained earnings are available, should managers keep them as a financial slack to face future investment situations?

Throughout the years, many people have tried to answer these questions – as well as others – by formulating models and theories and making empirical investigations. Assuming that managers always act in the shareholder's best interests, they should make the decision that maximizes the value of the firm hence maximizing shareholder's wealth.

Some theories state that the value of the firm can be maximized by reaching an optimal debt-to-equity ratio, whereas the theory published in 1958 by Modigliani and Miller argues that, under a restrictive set of assumptions, capital structure decisions do not affect the firm value. According to this MM paper, only investment decisions can affect the value of the firm and managers should only worry about the company assets and leave the financing decisions as matters to be attended, but not worried about.

We will exactly begin by analyzing the pure MM theory. Then, we move on analyzing the same theory with the inclusion of corporate taxes, as MM did in their paper of 1963. After, we will expose the Miller's theory of 1977 where personal as well as corporate taxes were included in the analysis. In the third section, we will analyze the pecking order theory, based on the work of Myers and Majluf (19).

SECTION II – THE MM THEORY AND THE MILLER MODEL OF 1977

Until MM published their work in 1958, the theories of capital structure were based on assertions about investment behaviour rather than on either a carefully constructed formal proof or formal statistic studies. In fact, the generally accepted view until then – the so called traditional view of capital structure – included some elements of irrationality, such as the idea that equity holders were expected to ignore the important factor of risk.

The traditional view was based on the idea that each company will have an optimal level of gearing at which the cost of capital will be minimized and the value of the firm maximized. According to the traditionalists, as Samuels, Wilkes and Brayshaw (23) stated, the increase in the level of gearing, until a certain point, would cause a lower weighted average cost of capital (WACC) because the cost of debt is lower than the cost of equity. Thus, this view stated that the point at which the WACC is minimized is the point where companies will be situated, hence issuing debt until that point is achieved. So, the traditionalists considered that moderate amounts of debt would not add significantly to the risks attached to holding equity. In fact, they considered that, until a certain stage, equity holders would not require higher returns due to the introduction of more debt financing in the capital structure.

Nowadays, it is questionable whether investors would be prepared to accept the same rate of return from firms in the same industry with different levels of gearing, as the traditionalists stated. As a response to this view, MM questioned if it was possible for firms to reduce the WACC by the way we have described above.

One important issue included in the MM analysis consists on the idea that perhaps minimizing the firm's WACC is not as important as the traditionalists supported. Through their analysis, MM reached three important conclusions, known as the MM propositions.

MM theory is based on a set of restrictive assumptions. In fact, the analysis included in their paper of 1958 was based on the existence of perfect capital markets. These assumptions are so restrictive that Ezra Solomon once said that *"a perfect capital market should be defined as the one in which the MM theory holds"*.

We can summarize the assumptions of this theory in the following points:

1. Perfect capital markets exist where individuals and companies can borrow unlimited amounts of money at the same risk-free rate of interest.
2. There are no taxes or transaction costs.
3. All projects and cash flows related thereto are perpetuities and any debt borrowed is considered to be perpetual.
4. Firms exist with the same level of risk but different levels of gearing.
5. Personal borrowing is a perfect substitute for corporate borrowing.

Under such assumptions, MM demonstrated that the following three ideas – the MM propositions were true:

I – the market value of any firm is independent of its capital structure; furthermore, the market value of any firm is given by capitalizing its expected total earnings at the capitalization rate considered appropriate to an all-equity company of that risk class. So, according to the MM theory and if capital markets exist, the investment decisions are independent of the financing decisions and what determines the market value of the firm is its investment schedule. Thus, gearing ratios could vary from firm to firm and within the same company throughout the years without causing any change in the firm's market value;

II – the expected rate of return on equity increases linearly with the gearing ratio; it is here where a big difference between the traditional view and the MM theory lies: as Lumbly (14) states, whereas in the MM theory the increased return required by shareholders as compensation for bearing more financial risk rises at a constant rate (linearly) as the level of gearing increases, the traditional view implies that this required expected return rises at an increasing rate, i.e., at a rate which is – at relatively low levels of gearing – below that hypothesized by MM – but which increases above the return required by equity holders in the MM model – at higher gearing ratios;

III – the cut-off rate to be used for investment appraisal purposes is the rate of return appropriate to an all-equity firm; this follows from proposition II where the cost of equity increases linearly to exactly off-set the advantage of lower cost debt financing; therefore, the WACC is constant and equal to the cost of equity in an all-equity financed firm.

Although we did not demonstrate how MM arrived at these propositions, departing from the set of assumptions mentioned, we may say that the three propositions are entirely consistent. As follows from the assumption mentioned, MM paper of 1958 did not consider the existence of corporate taxes, as well as personal taxes.

However, in 1963, Modigliani and Miller published another article, where their theory is adapted to include corporate taxes. The other assumptions, listed above, stayed valid to support the new analysis. This new analysis caused changes in the three conclusions (MM propositions) reached without taking into account corporate taxes. MM propositions, considering corporate taxes, are:

I – the market value of the firm is no longer independent of its capital structure. Value is increased as debt is added to the capital structure because of the present value of the tax shield on interest payments. The market value of the firm is now given by summing its value if all equity financed and the value of the tax shield on interest payments. So, according to this conclusion, firms should gear themselves up to a maximum of 99%. At this level, the market value of the firm would be maximized, hence shareholders wealth maximized too. Only 1% of the firm's capital structure would be formed by equity, just the sufficient percentage to ensure the company's ownership.

II – Although the expected return on equity increases as debt is added to the capital structure, the rate of increase is lower due to the existence of corporate taxes. Thus, when corporate taxes are included in the analysis, the expected return on equity still increases (as in the previous analysis without including taxes), but less than linearly (not at a constant rate, as before). The difference is due to the effect of corporate taxes.

III – The cut-off rate to be used for investment appraisal purposes is the rate of return used as if the company was all-equity financed plus an adjustment due to the existence of tax deductibility on debt interest. According to this proposition, the approach to be used is the one known as the Adjusted Present Value (APV). This technique suggests that the firm's investment project - and the way it is financed – should be split and analyzed separately; the project should still be evaluated as though all equity financed, using an appropriate cost of capital, with separate and explicit adjustment being made for any financing involved, as Van Horne (26) and many others, like Brealey and Myers (4), Pike and Dobbins (20), Samuels, Wilkes and Brayshaw (23) explain.

Again proposition III follows from the previous ones. The WACC is no longer constant irrespective of the level of gearing. Now, the WACC decreases progressively as more debt is included in the capital structure.

Regardless of considering that MM assumptions are realistic or not, we think – as Gordon (8) wrote - that MM theory has remained the dominant theory of corporate finance (since their work does not include only the capital structure analysis). In fact, the advances in the theory either show an apparent violation of the theory or that can not exist when the full implications of the perfect capital market assumptions are followed, or they establish modifications in the theory that result when one more – but not all – of the assumptions are relaxed.

That was what happened when Miller (16) published his 1977 article where personal taxes - as well as corporate taxes – were included in the analysis. Miller showed that, when these two types of taxes are taken into account, the expression for the value of the tax shield (the present value of the tax relief on corporate debt) changes. Thus, the MM expression:

$$V_{og} = V_{eug} + V_{td}$$

Changes to:

$$Vog = Veug + \left(1 - \frac{(1-Tc)(1-Te)}{(1-Td)}\right) Vd$$

Where:

Vog = the market value of a geared firm

Veug = the market value of an ungeared firm

Te = the personal tax rate on equity income

Tc = the corporate tax rate

Td = the personal tax rate on debt income.

In a homogeneous personal tax regime where all personal income is taxed at the same rate, then Te equals Td and so Miller's expression for Vog reduces back to:

$$Vog = Veug + Vd \times Tc$$

In other words, homogeneous personal taxes were an implicit assumption of the MM approach including tax analysis.

However, in the real world, the personal tax regime is heterogeneous, where Te differs from Td. In this case, Miller argued that, effectively, Te = 0 as shareholders can avoid taxes on dividends by taking dividends as capital gains for which there is a large tax-free allowance. In addition to this, he put forward a macroeconomic argument that, in an equilibrium market for corporate debt, Td = Tc.

It is in this latter argument that lies the heart of Miller's analysis and it is the most controversial part of his thesis. He argued that the existence of tax relief on debt interest – but not on equity dividends – would make debt capital more attractive than equity capital in companies. However, given that the market for corporate debt capital operates under the laws of supply and demand, companies would have to offer a higher return on debt (Kd) in order to generate a greater supply of debt.

Assuming a certain world in which investors hold either debt or equity, to persuade an equity supplier to switch over to become a debt supplier (because the company would prefer debt), the company must offer an after-personal tax return on debt at least equal to the after-tax return on equity. Then, remembering that $T_e = 0$, the after-personal tax return on debt must, at a minimum, be:

$$K_d (1 - T_d) = K_e$$

Therefore, the minimum interest rate the company must pay on debt capital is:

$$K_d = \frac{K_e}{1 - T_d}$$

If the previous expression gives the minimum debt interest rate the company must offer to persuade equity investors to switch to debt, the maximum interest rate the company will be willing to pay would be where the after-corporate tax cost of debt equaled the cost of equity:

$$K_d (1 - T_c) = K_e$$

At that point, the company would stay indifferent between equity and debt finance since the effective cost of each would be the same. In other words, the highest interest rate they would be willing to pay would be:

$$K_d = \frac{K_e}{1 - T_c}$$

Given a supply and demand market for corporate debt, companies would want to issue debt as long as the interest rate $K_d < K_e / (1 - T_c)$. And, as long as $K_d > K_e / (1 - T_d)$, investors would be willing to supply debt. Thus, an equilibrium position in the corporate debt market – where supply and demand equated – would occur where:

$$\frac{K_e}{1 - T_c} = K_d = \frac{K_e}{1 - T_d}$$

Therefore, equilibrium would occur when $T_c = T_d$, i.e., when the corporate tax rate equals the personal tax rate of the marginal (or incremental) investor in debt capital.

From this analysis, a conclusion can be drawn that, from the point of view of an individual company, it will be indifferent between raising debt or equity as the effective cost of each will be the same. All the advantages of the tax relief on debt interest will go to the suppliers of debt capital whose own personal T_d is less than T_c . This conclusion can be observed from the fact that Miller's expression for V_{og} :

$$V_{og} = V_{eug} + (1 - \frac{(1-T_c)(1-T_e)}{(1-T_d)})$$

Reduces when $T_e = 0$ and $T_d = T_c$, to:

$$V_{og} = V_{eug}$$

The value of the tax shield now becomes zero. There is no advantage in gearing and one capital structure is, therefore, as good as any other. Hence, the financing decision is relegated to being a matter of little importance for the management of company finance.

It is not very clear if Miller's theory holds true in practice. Nevertheless, Lumbly (14) draws attention to the fact that Miller's argument warns about exaggerating the virtues of tax advantages of debt capital and it provides another way of explaining observed gearing ratios: companies do not gear up to high levels – not only because there are hidden costs in doing so – but also because the gains (even at times when the corporate taxes are high) are not so big as MM model of 1963 suggested.

We have explained the main issues involved the two MM papers and their models – before and after the inclusion of corporate taxes – and we went briefly through the 1977 Miller's argument. Many Authors (if not all) agree that MM theory, as well as Miller's model, are not free from criticisms. These criticisms arrive essentially from the fact that their assumptions do not reflect actual market conditions, as we can realize from this list proposed by Brigham (5):

1 – Both MM and Miller assumed that personal and corporate gearing are perfect substitutes. However, an individual investing in a geared firm has less loss exposure, which means a more limited liability than if he or she used a “homemade” gearing.

2 – Some arguments in MM and Miller work only are valid if issue and transaction costs do not exist. However, they exist in the real world.

3 – MM assumed that corporations and investors can borrow at a risk-free rate. Although risky debt has been introduced in the analysis by others, to reach the MM and Miller conclusions it is necessary to assume that both corporations and investors can borrow at the same rate. Even though major institutional investors probably can borrow at the corporate rate, most individual investors have to borrow at higher rates than those paid by large companies.

4 – In his article, Miller implicitly assumed that the tax benefit from corporate debt is the same tax rate for all firms and constant for an individual firm, regardless of the amount of debt used. However, we know that the tax benefit varies from firm to firm: highly profitable companies gain the maximum tax benefit from gearing, whereas firms with low growth ratios have smaller benefits.

5 – Both MM and Miller theory ignored the existence of costs related with financial distress, as well as agency costs. As we will see in the next section, these costs play a key-role when capital structure debate “goes down to earth”.

As we already mentioned, MM theory have largely contributed for stimulating a stream of important theoretical and empirical literature about capital structure and Miller’s article, published 30 years after MM’s first paper, is a good example of that. Nobody denies the crucial importance of this work. Some authors, such as Weston (28), go even further and compare the influence of MM propositions on Financial Economics to the impact of Keynes’s model on Macroeconomics.

Nevertheless, other theories have emerged which, in our view, may explain a lot better corporate behaviour in practice. Our next sections are devoted to them.

SECTION III – THE STATIC TRADE - OFF THEORY

In their 1963 paper, MM agreed that when there is corporation tax relief on interest payments, the cost of capital is not independent of the debt-to-equity ratio. The existence of this tax relief provides advantages which favour borrowing.

However, MM analysis did not include other imperfections, such as the existence of costs of financial distress. The static trade-off theory is exactly based on a model that considers this type of costs, as well as the advantages of corporate borrowing.

As we know, as the proportion of debt increases in the firm's capital structure, the risk of equity owners also increase since shareholders demand a higher expected rate of return on their investment, due to the fact that they are investing in a company that has more financial risk.

Moreover, if the firm's policy is to issue large amounts of debt, not only the shareholder's risk is increased: eventual new debtholders in the future will require greater rates of return on their investment due to the same reasons. This means that, when company decides to issue large amount of debt today, its management should be aware that a new debt issue in the future will become more expensive than the one taken today. Thus, as more debt is introduced in the capital structure, the more expensive will future debt issues become and the more demanding shareholders will become too.

In practice, we realize that, generally, companies do not gear themselves beyond a reasonable point. According to Lumbly (14), companies' capital structures contain more than 50% equity capital and the average level of gearing is around 25% debt capital and 75% equity capital.

According to the static trade-off theory, this is due to the existence of bankruptcy costs. With increasing proportions of debt, the likelihood of incurring costs of financial distress increases as does the cost of the ultimate financial distress – bankruptcy. Potential financial distress has a cost and as companies take on higher and higher levels of debt, this cost will have a negative effect on the firm's value, offsetting the value of the tax shield from extra interest payments made. Thus, according to this theory, the value of the firm is given by the following expression:

Value of a geared firm = Value if firm is all equity financed + PV of tax shield on borrowing – PV of costs of financial distress.

As can be seen from the equation above, the threat of financial distress costs reduces the benefits of tax relief due to corporate borrowing. The authors of static trade-off models, such as Scott (24), and Kraus and Litzenberger (11) argue that there is an optimal level of gearing at which the bankruptcy costs, the cost of capital and the tax relief are balanced. Thus, we can conclude that the WACC is not independent of the company's capital structure and the value of the firm will be maximized when the optimal debt-to-equity ratio is achieved.

The costs of financial distress can be divided into two different groups: the direct costs and the indirect costs. Whereas direct costs are tangible – fees for accountants and lawyers and other fees as well managerial time used in the administration – the indirect costs are less tangible and much more difficult to quantify. The indirect costs can be seen as caused by uncertainties in the minds of suppliers and customers. They include lost sales, lost profits and lost goodwill.

As Brealey and Myers (4), Samuels, Wilkes and Brayshaw (23) and others state, the costs of financial distress vary with the type of asset each firm owns. These authors say that a company which owns a large proportion of easily saleable assets – and those are likely to be tangible – has lower bankruptcy costs, mainly due to the fact that reorganization of activities will be much easier with those assets. On the contrary, firms owning large amounts of intangible assets – such as advertising agencies – tend to have greater bankruptcy costs.

Moreover, it is generally accepted that the type of asset held by the company affects the amount borrowed. In fact, recent empirical research confirms that firms holding largely intangible assets borrow less. Long and Malitz (13), for example, provide empirical support for the proposition we have been discussing: they have demonstrated that companies with relatively high levels of intangible investment, such as expenditures for R&D and advertising, tend to use significantly less debt financing, all else equal, than firms with large proportional investments in tangible assets.

However, some controversy can be found in the literature about the real costs of financial distress. Some authors, such as Lumby (14) and Altman (1), consider that these costs are significant. For example, Altman found evidence that average indirect costs (only) were 17,5% of value of one year prior to bankruptcy – even though this work was based on a small sample of 12 firms.

On the contrary, other authors, such as Warner, Chatterjee and Ross consider that bankruptcy costs are relatively small. Research made by Warner (27) led to the conclusion that “the expected direct costs of bankruptcy are unambiguously lower than the tax savings on debt to be expected at present tax rates in standard valuation models”. Moreover, work by Chatterjee and Scott (6) confirmed earlier findings that the direct cost of bankruptcy are not statistically significant. Finally, Ross (22), based on studies by Haugen and Senbet, pointed out that it is very unlikely bankruptcy costs can be large.

This discussion about the real cost of bankruptcy is very important since it implies the validity or non-validity of the trade-off model between debt shield and financial distress. If the bankruptcy costs are not significant, the theory will be less relevant since firms will not “fear” them too much, hence moving into higher debt ratios. In the limit (no bankruptcy costs), the firm will gear itself to the highest level, as MM theory of 1963 states; so, if bankruptcy costs are trivial, then another explanation for optimal capital structure is needed.

The static trade-off model we have been examining only includes financial distress costs – besides the tax advantage of corporate borrowing – as market imperfections. However, another approach to static trade-off model includes the so called «agency costs», as well as financial distress costs. For the supporters of these models, the market value of a geared firm is given by the following expression:

Value of a geared firm = market value of the firm if all equity financed + PV of tax shield on borrowing – PV of financial distress costs – PV of agency costs.

Agency costs only exist when managers do not act in the best interest of the suppliers of capital – the debtholders and the shareholders. So, it is obvious that models which include agency costs, as a market imperfection, are not based on the assumption that managers always act according to shareholders' best interests. This is the reason why we did not include the discussion of agency costs in the model we have examined before. However, agency costs are a fact in the real world and a broad discussion about them can be found in the literature.

The pioneer work about agency costs was carried-out by Jensen and Meckling (10); they have built the agency theory which concluded that the optimal capital structure is the one that minimizes agency costs. But what are agency costs? Let's take a look at a good example given by Copeland and Weston (7).

Consider this situation: the firm has two different investment projects, both having the same systematic risk, but different variances. The first has a 50/50 chance of yielding an end-of-period cash-flow of 9,000 or 11,000. The second has a 50/50 chance of yielding 2,000 or 18,000. Let's consider that both have an initial outlay of 3,000; of course that the two projects have the same expected return. Suppose the firm shows only the first project to lenders and asks them to borrow 7,000. From the lenders point of view, this request seems reasonable because project 1 will always earn enough to pay off the loan. Of course, if creditors lend 7,000 and if the owners of the firm can switch to project 2, they will probably do it. The result is the transfer of wealth from debtholders to shareholders. Consequently, debtholders may insist on various types of protective covenants and monitoring devices, in order to protect their wealth from raids made by shareholders. However, the costs of writing and enforcing such covenants might not be small. Debtholders must charge higher "ex-ante" yields to compensate from possible wealth expropriation by shareholders. Furthermore, these costs may increase as more debt is provided by debtholders, as Jensen and Meckling pointed out in their paper.

Until now, we have only considered the agency costs of debt. However, there are also agency costs associated with external equity.

Copeland and Weston give another example of this second type of agency costs. Suppose a firm is owned only by one individual, the owner-manager (O-M). The O-M will, of course, make everything possible to increase his or her wealth as the benefit or cost of each decision he or she takes is directly reflected on him or her. Now, suppose the O-M sells a portion of the rights by selling external equity to new shareholders. If the O-M buys, say, an executive jet, he or she will be doing it at the expense of the new shareholders. So, co-ownership of equity can imply agency problems. The new shareholders will have to incur in monitoring costs of one form or another in order to ensure that the original owner-manager acts in their interest.

It is assumed that the agency costs of external equity increase as the percentage of financing supplied by external equity goes up. Jensen and Meckling suggest that, given increasing agency costs with higher proportions of equity, on one hand, and higher proportions of debt on the other, there is an optimal combination of outside debt and equity that will be chosen because it minimizes total agency costs. However, some recent doubts about Jensen and Meckling idea that agency costs of debt increase as more debt finance is included in the capital structure have emerged, as Green and Talmor (9) pointed out. Nevertheless, the agency theory is considered as having adherence to the real world and the existence of agency costs is underlined by all the relevant authors.

We have devoted this section to the explanation of the static trade-off theory. Now, it is time to finally conclude if this theory is strong in explaining how companies actually behave. We agree with Brealey and Myers (4) when they say their answer is yes and no. Yes because the theory explains why companies do not take as much debt as possible, hence explaining the general existence of moderate debt ratios, and because it explains why companies – which own risky and mostly intangible assets – normally use relatively little debt. In fact, empirical research made by Long and Malitz (12) found a significant negative relationship between rates of investment in advertising and R&D and the level of borrowing.

However, there are things the trade-off theory can not explain. It can not explain why some of the most successful companies include little debt in their capital structures. In fact, the trade-off theory does not explain an old fact about real-life capital structure: the most profitable companies generally borrow the least. Here, the trade-off theory fails because it predicts exactly the opposite: profitable companies have more debt-servicing capacity and more taxable income to shield. As a consequence, they should have higher target debt ratios. This problem will be addressed again in the following section.

SECTION IV – THE PECKING ORDER THEORY

The pecking order theory appeared as an answer to the impossibility, showed by the static trade-off model, to explain some aspects related with financing choices and some evidence found by empirical research. Although Donaldson, in 1961, had already examined some relevant issues related with this theory, the paper of Myers and Majluf (19) and Myers (17) can be considered as being the main articles where a coherent and fully structured hypothesis can be found, based on the idea that managers follow a pecking order when facing financing decisions.

Myers described the pecking order theory in 4 summarized points:

1 – Firms prefer internal finance, i.e., retained earnings. This means that, when firms face investment opportunities, they prefer to finance them with retained earnings, when they exist.

2 – Firms adapt their target payout ratios to their investment opportunities, although dividends are sticky and target payout ratios are only gradually adjusted to shifts in the extent of valuable investment opportunities.

3 – Sticky dividend policies, plus unpredictable fluctuations in profitability and investment opportunities, mean that internally generated cash flow is sometimes more than capital expenditures and other times less.

4 – If external finance is required, firms issue the safest security first. That is, they start with debt. Then, possibly hybrid securities such as convertible debentures. Then, perhaps equity as a last resort. In this hypothesis, there is no well defined target debt-equity mix because there are two kinds of equity – internal and external – one at the top of the pecking order and one at the bottom; each firm's observed debt ratio reflects its cumulative requirements for external finance.

So, as we see, the pecking order theory does not imply the existence of an optimal debt-equity ratio, like the static trade-off models predicted. According to this theory, what we have is a list of sources of funds that are ranked from internal equity until external equity, with debt in the middle. When facing investment opportunities, firms prefer to finance projects with retained earnings, at least because there are no costs involved. On the other hand, at a certain moment, companies might not have sufficient internal equity to finance investment opportunities. In this case, companies will issue debt. Finally, companies will only issue new external equity if all the other previous sources are not available. This is related with the fact that the cost of issuing equity is higher than the costs of debt issues.

There is another good reason why companies are reluctant to issue new debt or external equity, when they have access to retained earnings. This fact is explained by the theory of information or the signaling approach, developed by Myers and Majluf (19). According to them, the fact managers possess information about investment opportunities that investors do not have, can be an explanation for heavy reliance on retentions.

So, besides the obvious reason that raising external finance carries issue costs, there is a stronger reason for that. In fact, only issue costs could not explain it fully since they are not large enough to override the costs and benefits of gearing emphasized in the static trade-off theory.

The signaling approach states that issuing new equity conveys information to the market. Suppose, for example, managers know – due to their access to more information about the firm – that the value of the shares is greater than the current market value based on a semi-strong market imperfection. If new shares were issued in this situation, there is the possibility that they would be issued at a too low price, hence transferring wealth from existing shareholders. Thus, we can understand why managers are reluctant to issue new external equity when they are in possession of favorable inside information. Furthermore, if market participants know that managers do not like to issue new shares when they have favourable inside information, they might assume that management will be more likely to favour new issues when they are in possession of unfavorable inside information, which leads to the suggestions that new issues might be regarded as bad news.

As we have seen, asymmetric information affects capital structure by limiting access to outside finance. In fact, empirical research made by Asquith and Mullins (2) and Masulis and Korwar (15) observed that announcements of new equity issues are followed by sharp declines in share prices. Thus, managers acting in the best interests of their shareholders would prefer debt when external finance is required, rather than equity.

After the development of the theory of information or signaling approach, Myers (17) proposed a *modified pecking order*, which is essentially based on that theory and generally consistent with the empirical evidence. This modified approach is summarized in the following four points:

1 – Firms have no good reasons to avoid having to finance real investments by issuing common shares or other risky securities. What really seems important to conclude is that managers do not want to run the risk of falling into the indefinable of either passing by projects with positive NPV or issuing shares at a price they think is too low.

2 – Firms establish target dividend payout ratios so that normal rates of equity investment can be met by internally generated funds.

3 – Companies may also have to cover part of normal investment outlays with the new borrowing, but they will try to restrain themselves enough to keep the debt safe – that is – reasonable close to the default risk-free. There are two reasons for this self-imposed restriction: first, in order to avoid any material costs of financial distress; and second, in order to maintain financial slack in form of reserve borrowing power. This means that firms want to keep some debt capacity if an emergency issue is needed in the future.

4 – Since target payout ratios are so sticky and investment opportunities fluctuate relative to internal cash flow, the firm will, from time to time, exhaust its debt capacity to issue safe debt. When this happens, firms “search for help” issuing less risky securities first (e.g., convertible debentures) and only common shares as a last resort.

Still according to Myers, the crucial difference between the static trade-off theory and the “modified pecking order” hypothesis is that in the “modified pecking order” hypothesis, observed debt ratios are explained as being the result of the cumulative requirements for external financing. In fact, it seems obvious that if an unusually profitable company has a low debt-to-equity ratio (due to the fact that it generates a high level of internal equity), it will not gear itself up because industry’s average ratio is much lower. So, according to Myers arguments, debt ratios exist because companies often lack retained earnings to finance their investment projects hence needing to raise external finance in the form of debt.

We can conclude that the modified pecking order not only is essential based on the theory of asymmetric information but also recognizes bankruptcy costs as a market imperfection and includes them in the analysis. As pointed out in item 3 above, financial distress plays an important role in managers’ way of thinking when debt issues are required. In fact, according to Myers, each time management has to cover a part (or all of it) of financing requirements, it does take into account the risk of incurring in costs of financial distress. However, unlike the trade-off theory – which is based on the existence of those costs – the pecking order approach successfully, provides an explanation to the problem announced in the last section. Whereas the static trade-off theory could not explain why the most profitable firms generally borrow the least, the pecking order theory does it easily. Since the profitable firms are the ones having bigger amounts of retained earnings (naturally), managers have sufficient internal funds to finance investment opportunities, therefore not needing to search for external finance (eg, debt). This negative relationship between firm’s profitability and their debt-to-equity ratio is strongly supported by empirical studies, such as the one carried out by Baskin (3). As we will see later, the relationship mentioned above is one of the few ideas about capital structure that is generally accepted.

THIRD PART – THE PRATICAL APPROACH

CHAPTER IV – SURVEY RESULTS

The survey is based on a questionnaire sent to all the 72 Portuguese industrial companies quoted on the Lisbon or Oporto Stock Exchanges. We have received 36 responses, although two of them were not considered valid. So, the answering ratio was 50%, but our sample only includes 47, 2% of all companies (34/72).

The questionnaire included four questions. We will give the results of each one of them in this chapter, even though conclusions will only be taken in the next chapter.

FIRST QUESTION – The purpose of the first question was to know if Portuguese industrial companies follow a static trade-off model approach – which states firms set a target debt ratio – or if they follow the pecking order hypothesis, which predicts firms finance themselves according to a financing hierarchy in which the most advantageous sources of funds are exhausted before other sources are used.

The results were the following: 24 financial managers (72%) preferred the pecking order approach and only 10 stated that they seek to maintain a target debt-to-equity ratio.

SECOND QUESTION – Only financial managers that stated in the first question that follow a financing hierarchy (24 of the total) when facing financing decisions, were required to answer this question. From a list of five alternative long term sources of funds, financial managers had to rank them by order of preference. The alternative sources of funds considered were:

- 1 - Internal equity
- 2 - External common equity
- 3 – Straight debt
- 4- Convertible debt
- 5 – Preferred shares,

And firms should rank these sources, on a scale of 1 to 5, where 1 point is given to the first choice, until 5 points, to the last choice. The results are contained in the following table, based on the sample of 24 firms that follow a financing hierarchy:

PREFERENCE RANKING OF LONG TERM SOURCES OF FUNDS AMONG 24 PORTUGUESE INDUSTRIAL COMPANIES THAT FOLLOW A FINANCING HIERARCHY

Percentage of responses within each rank

Sources by order of preference	first	second	third	fourth	fifth	mean
1. internal equity	91.7	0	8.3	0	0	4.83
2. straight debt	8.3	75	12.5	4.2	0	3.87
3. convertible debt	0	8.3	62.5	12.5	16.7	2.63
4. external common equity	0	16.7	16.7	33.3	33.3	2.17
5. preferred shares	0	0	0	50	50	1.5

Means are calculated by assigning scores of 5 to 1 for ranking of 1 to 5, respectively, and by multiplying each score by the fraction of responses within each rank. A score of 0 is assigned when a source is not ranked.

So, as we can easily see in the table presented, internal equity is the most preferred source (91,7% of the financial managers ranked it as first choice) and preferred shares – as well as common equity, are the ones with lower preference among Portuguese industrial firms.

THIRD QUESTION – The purpose of this question is to know which financial principles financial managers bear in mind when they face financing decisions. The list provided in the questionnaire included six of those general principles:

- 1 – Maximizing security prices.
- 2 – Maintaining financial flexibility.
- 3 – Maintaining financial independence.
- 4 – Ensuring the long term survivability of the firm.
- 5 – To pursue a high debt-to-equity ratio.
- 6 – Maintaining comparability with other firms in the same industry.

When asked to rank these principles in a scale of 1 to 5, where 1 meant unimportant and 5 very important, the findings among our sample of 34 financial managers were that «to maintain financial independence» and «to ensure the firm's long term survivability» have been considered the most important principles, both with 47,2% of first choices. The ones considered to be the less important were «maintaining comparability with other firms in the same industry» with 38,2% of last choices, and «to pursue a high debt-to-equity ratio» with 32,4%. . The other two principles, «maintaining financial flexibility» and «maximizing security prices» were positioned somewhere in the middle.

FOURTH QUESTION – The purpose of this question was to know to what extent managers obey to established capital structure and dividend policies when they have an attractive new growth opportunity in hands. The question formulated was: “ given an attractive new growth opportunity that could not be taken without departing from your target debt-to-equity ratio or financing hierarchy, cutting the dividend or selling off other assets, what action is your firm most likely to take?».

The alternatives and the percentages were:

- 1 – Cut the dividend – 47, 1% (16/34)
- 2 – Deviate from target debt-to-equity ratio or financing hierarchy – 38, 2% (13/34)
- 3 – Sell off other assets – 11, 8% (4/34)
- 4 – Forgo the growth opportunity – 2, 9% (1/34)

Thus, companies seem to prefer any solution but to forgo a good positive NPV opportunity since only one financial manager stated that forgo that opportunity would be the decision his or her firm would most likely make.

Full conclusions to all the results are taken in the following chapter.

FOURTH PART – CONCLUSIONS

CHAPTER V – THE CONCLUSIONS

SECTION I – INTRODUCTION

In this chapter, we will examine thoroughly the survey results in order to conclude which of the theories, presented in the third chapter, is best supported by our sample of 34 Portuguese industrial companies. Conclusions about the relative importance Portuguese financial managers attribute to capital structure and dividend policies, will be addressed. Finally, in the second section, we will provide a possible checklist for financial managers to decide about capital structure, where the most determinants of capital structure are referred.

SECTION II – COMPARING THE THEORETICAL APPROACH WITH THE PRACTICAL APPROACH: THE INTERPRETATION OF THE SURVEY RESULTS.

The first question included in the questionnaire was, perhaps, the most important one. When confronted with two different alternative policies – one is reflecting the static trade-off approach and the other reflecting the pecking order hypothesis, the big majority of Portuguese financial managers of manufacturing companies state that they follow a financing hierarchy, where the most advantageous sources of funds are exhausted before consider using other sources. Thus, these results will add to several others reached by many empirical studies already made, where the pecking order theory seems to describe better corporate practice, as far as capital structure decisions is concerned.

The second question comprised the list of five alternative sources of long-term funds available in the Portuguese capital markets. Only the companies that follow a financing hierarchy were requested to rank those sources by order of preference. Still, the findings are coherent with the pecking order theory: internal equity (retained earnings) was the source which received more preferences (92,7%) as the first choice, when capital is needed to finance investment opportunities. As a second choice, straight debt

was the source that had the biggest percentage of managers preference (75%), followed by convertible debt (62,5%) as the third choice.

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Finally, on the bottom of the Portuguese pecking order, we find external common equity and preferred shares, both with equal percentages (33,5% and 50%, respectively, as fourth and fifth choices). However, when we calculated the means of each source, preferred shares stayed on the fifth and last place. So, the list by order of preference is:

- 1 – Internal equity
- 2 – Straight debt
- 3 – Convertible debt
- 4 – External common equity
- 5 – Preferred shares.

The ranking established by the sample examined is strongly consistent with the pecking order approach. So, we can finally conclude that the majority of Portuguese manufacturing companies publicly traded follow a financing hierarchy which is basically the same as the one supported by the pecking order hypothesis. The only difference is that the list of alternative long term sources of funds presented had to be modified in order to meet specific Portuguese market conditions. The third question was formulated in order to know which general financial principles Portuguese financial managers bear in mind when they face capital structure decisions. The two principles which had the highest percentages – as considered very important – were «to ensure the firm's long term survivability» and «to maintain the firm's financial independence». This result may implicitly lead us to the conclusion that financial managers are worried with the possibility (even if a remote one) of being in a situation where financial distress and, ultimately, bankruptcy might occur.

This conclusion seems to be supported by the fact that «to pursue a high debt-to-equity ratio» was considered to be a non-important principle by a large percentage of managers (32,4%). However, the financial principle that gathered the biggest percentage as “non-important” was «to maintain comparability with other firms in the same industry». Thus, it seems obvious that results imply a natural concern with the

possible existence of financial distress and bankruptcy costs, as both static trade-off approach and 1984 Myers's pecking order theory support.

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Finally, the fourth question had the purpose to test to what extent managers follow their capital structure policies when facing a difficult situation. In response to the situation where a new growth opportunity could not be financed without departing from established target ratio or financing hierarchy, cutting the dividends or selling off existent assets, the results were quite surprising: 47,1% answered that they would cut the dividends in order to meet capital needs and only 38,2% said that they would deviate from established capital structure policies. Although the questionnaire did not specifically asked if firms set a payout ratio, it seems reasonable to conclude that they do so since all of them are publicly traded and are among the largest Portuguese companies. Thus, these results do not seem to be consistent with the idea that the *financing decision* is the most flexible of all the decisions in corporate finance.

In fact, from our sample of 34 financial managers, 16 would prefer to cut the dividends (hence to deviate from eventually established payout ratios), 13 would prefer to deviate from debt ratios or financing hierarchy followed until then, and only 4 said they would decide to sell off existent assets. Finally, only one financial manager said that her or his company would forgo the new growth opportunity.

Even though we decided to make a somewhat limited kind of questionnaire (which, we think, increased enormously the rate of responses), four important conclusions could be taken. They are summarized below:

1 – Financial managers in this sample are more likely to follow a financing hierarchy than to maintain a target debt-to-equity ratio.

2 – Firms would prefer to finance investment opportunities with internal equity. If this is not possible, they will issue straight debt first and convertible debt after. Finally, they will issue external equity only if the previous sources of funds are exhausted.

3 – Financial distress and bankruptcy costs seem to be a major concern manager's bear in mind when they make financing decisions, at least after the company has reached a reasonable debt ratio. This is implied by the fact that «to ensure the firm's financial independence» and «to maintain long term survivability» are the superior financial planning principles managers consider more important. This

conclusion is also confirmed by the fact that «pursuing a high debt ratio» is considered by a large proportion of managers to be «non important. »

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4 – Managers appeared to be flexible with regard to the dividend payout policy established. The majority of managers would prefer to deviate from established payout ratios, rather than to deviate from the firm's capital structure policy, sell off assets or simply put aside an attractive investment opportunity.

SECTION III – WHAT DETERMINES THE FIRM'S CAPITAL STRUCTURE: A CHECKLIST.

To reach conclusions about capital structure is a hard task. The fact that we still do not have an accepted coherent theory of capital structure, as Brealey and Myers (4) stated, does not provide managers with a complete consistent framework to decide about capital structure. However, we can find in the literature several attempts to list some factors which seem reasonable for managers to bear in mind when they face capital structure decisions. Some authors refer to these factors as determinants of capital structure choice because they think they have the capacity to determine a particular capital structure instead of another. Some of these factors were mentioned previously because they have assumed crucial importance as relevant issues included in the explanation of the analyzed theories.

Nevertheless, we did reach some conclusions about the way Portuguese industrial companies finance themselves. We strongly believe that the pecking order theory is more capable in explaining Portuguese reality than the static trade-off approach. We also believe that Portuguese companies prefer to finance their investment opportunities with internal equity rather than searching for external finance. Our study also concluded that managers do worry about bankruptcy costs. But all these conclusions can not provide us with a full explanation to how companies – in general – should finance themselves in a particular moment of their lives. In summary, we do not know how to thoroughly advise managers in setting the firm's optimal capital structure. Perhaps because there is no such thing as an optimal capital structure.

However, we think there are some advices that may be given to financial managers. At least, we can tell them that there are some factors they should take into account when facing financing decisions. Some authors, such as Brealey and Myers (4), Myers (18) and Titman and Wessels (25), provide checklists of those factors. The generally accepted ones are listed below:

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1. **TAXES** – If the company is in a taxpaying position, an increase in the level of gearing reduces the income tax paid by the company. The reduction is bigger if the marginal tax rate is high. The higher this rate is, the bigger the tax shield effect will be. Obviously the problem is not only related to whether or not the company is in a tax paying position: the fact that the firm will be in that position throughout the life of the debt is also fundamental. So, companies that have high and stable income streams are able to take full advantage of the interest tax shield effect but only if they did not borrow too much. If they do so, the costs of financial distress might start to be a threat managers do not like. However, borrowing is not the only way to shield income. As Titman and Wessels (25) pointed out, non-debt tax shields, such as accelerated write-offs of plants and equipment can also be used to reduce corporate taxes. Thus, firms which are able to take advantages of non-debt tax shield, might include less debt in their capital structures.
2. **RISK** – Even if ultimate bankruptcy does not occur, financial distress is costly. If two companies are equal in everything except business risk, the company possessing the highest business risk faces a bigger likelihood of incurring in distress costs. Thus, some firms with high business risks should borrow less than the others, all else equal.
3. **ASSET TYPE** – Firms whose assets are suitable as security for loans tend to use significant amounts of debt. In fact, companies having a big proportion of tangible assets tend to borrow more than those whose assets are largely intangible. Here, managers should be aware of the type of assets their companies have before choosing a particular debt-to-equity ratio. They should not forget that, to an extent, the asset type determines the amount of debt considered to be reasonable.
4. **PROFITABILITY** – Profitable firms tend to use less debt than less profitable ones. This behaviour is consistent with empirical observation. The explanation is that profitable firms are the ones generating lots of cash. Thus, and if we believe that

firms prefer internal funds to external finance (and we do), as the pecking order theory states, profitable firms would include less debt in their capital structure.

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5. FINANCIAL SLACK – In the long run, a company's value rests more on its capital investment and operating decisions than on financing. Therefore, it seems logical managers would like to make sure they have sufficient financial slack so that financing is quickly accessible when good investment opportunities arise. Managers would like to have a reasonable amount of cash available or, at least, a good reserve borrowing capacity in order to finance those attractive opportunities. This also explains why, generally, firms do not gear themselves too much. If they do so, they may have to face the difficult situation of passing up a good investment opportunity or issue equity.

We did mention some factors that might help managers to decide about capital structure. However, we do not have a fully consistent theory explaining them how to do it. Perhaps we do not have that theory because corporate borrowing reflects the attitudes of financial managers and can not be simply represented in a financial model. Perhaps those attitudes are not consistent with what we would expect from financial theory. Nevertheless, we think the pecking order theory contributes with a good basis for further thoughts and research. Anyway, we are tempted to sympathize with one of the biggest contributors to the capital structure debate. As Stewart Myers (18) wrote, checklists are important because they do tell the financial manager what is important and what is not. It gives him or her framework for thinking about how to set up a capital structure. As always, the final decision rests on the manager's shoulders.

Birmingham, January of 1992

(João Adelino N. P. Ribeiro)

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REFERENCES

1. ALTMAN, E., "A further empirical investigation of the bankruptcy cost question", *Journal of Finance*, September 1984, 1067-1089.
2. ASQUITH, P., MULLINS, D., "Equity Issues and offerindg dilution", *Journal of Financial Economics*, January 1986, 61-89.
3. BASKIN, J., "An empirical investigation of the pecking order hypothesis", *Financial Management*, Spring 1989, 26-35.
4. BREALEY, R., MYERS, S., "Principles of Corporate Finance", McGraw-Hill, New York, 1988.
5. BRINGHAM, E., "Intermediate Financial Management", the Dryden Press, Orlando, 1990.
6. CHATARJEE, S., "Explaining differences in corporate capital structure: theory and new evidence", *Journal of Banking & Finance (Netherlands)*, vol.13, 238-309.
7. COPELAND, WESTON, "Financial Theory and Corporate Policy", Adison-Wesley Publishing Company, Los Angeles, 1989.
8. GORDAN, M., "Corporate finance under MM theorems", *Financial Management*, Summer 1989, 19-28.
9. GREEN, R., TALMOR, E., "Asset substitution and agency costs of debt financing ", *Journal of Banking & Finance (Netherlands)*, October 1986, 391-399.
10. JENSEN, M., MECKLING, W., "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, October 1976, 391-399.
11. KRAUS, A., LITZENBERGER, R., "A state preference model of optimal financial leverage", *Journal of Finance*, September 1973, 911-922.
12. LONG, M., MALITZ, L., "The investment-financing nexus: some empirical evidence", "Modern Developments in Financial Management", the Dryden Press, New York, 1976.

13. LONG, M., MALITZ, L., "Investment patterns and financial leverage", working paper, National Bureau of Economic Research, 1983.
14. LUMBY, S., "Investment appraisal and financing decisions", the Lumby Family Partnership, Oxford, 1988.
15. MASULIS, R., KORWAR, A., "Seasoned equity offerings", Journal of Financial Economics, January 1986, 91-118.
16. MILLER, M., "Debt and taxes", Journal of Finance, July 1984, 575-592.
17. Myers, s., "The capital structure puzzle", Journal of Finance, July 1984, 575-592.
18. MYERS, S., "The search for optimal capital structure", in "Modern Developments in Financial Management", the Dryden Press, New York, 1976.
19. MYERS, S., MAJLUF, N., "Corporate financing and investment decisions when managers have information investors do not have", Journal of Financial Economics, vol. 13, 187-221.
20. PIKE, R., DOBBINS, R., "Investment decisions and financial strategy", Philip Allan Publishers, Oxford, 1986.
21. PINEGAR, J., WILBRICHT, L., "What managers think of capital structure: a survey", Journal of Finance, Winter 1989, 82-91.
22. ROSS, S., "Corporate Finance", Mosby College Publishing, St. Louis, 1988.
23. SAMUELS, J., WILKES, F., BRAYSHAW, R., "Management of Company Finance", Chapman and Hall, London, 1990.
24. SCOTT, J., "A theory of optimal capital structure", Bell Journal of Economics, Spring 1976, 33-54.
25. TITMAN, S., WESSELS, R., "The determinants of capital structure", Journal of Finance, Spring 1988, 1-20.
26. VAN HORNE, J., "Financial management and policy", Prentice-Hall International Editions, New Jersey, 1989.
27. WARNER, J., "Bankruptcy costs: some evidence", Journal of Finance, May 1977, 377-397.
28. WESTON, J., "What MM have wrought", Journal of Finance, Summer 1989, 24-38.

APPENDIX

QUESTIONNAIRE

This questionnaire includes four questions. Please answer bearing in mind that it is about the decisions you make when your company requires long-term financing.

1. Make a cross in one of the following sentences;

When your company needs to raise new funds, you:

- a) try to keep a target value for your company's long term debt-to-equity ratio, hence using constant proportions of equity and medium / long term debt. Follow a hierarchy of sources of funds, where you use the cheapest ones before considering to use the others.

NOTE: If you have made a cross in sentence A, please answer questions 3 and 4 only. On the contrary, if you have chosen sentence B, please answer questions 2, 3 and 4.

2. Establish a ranking of the following sources of funds by order of preference, when you face the need to finance a new investment opportunity (from 1 = first choice until 5 = last choice);

- Retained earnings.
- Preferred shares.
- External common equity.
- Convertible debt
- Straight debt.

2. Indicate the relative importance of the following factors in your firm's financing decisions (on a scale where 1 = non important until 5 = very important);

- maximizing prices of publicly traded securities
- maintaining a flexible capital structure
- ensure the long term survivability of the company
- maintaining the financial independence of the company
- maintaining comparability with other firms in the same industry
- maintaining a high debt-to-equity ratio

3. Given an attractive growth opportunity that can not be taken without departing from your target capital structure, cutting the dividend or selling off other assets, what decision is your firm most likely to make:

- forgo the growth opportunity
- deviate from the target capital structure or financing hierarchy

- cut the dividend

- sell off other assets