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Capital Structure Theory since Modigliani-Miller
Development in the search for the optimal leverage of the firm

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Eidesstattliche Erklärung

List of abbreviations

CAPM   Capital Asset Pricing Model

CFO   Chief Financial Officer

DCF   Discounted Cashflow

IAS   International Accounting Standard

LBO   Leveraged Buy-Out

M&M   Modigliani and Miller

WACC   Weighted Average Cost of Capital

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1 Introduction

1.1 Research issue and purpose of the thesis

„How does a practitioner use the theory to determine optimal capital structure? The answer to this question is the Holy Grail of corporate finance. There is no completely satisfactory answer, and the author of a sound, empirically validated theory will deserve the Nobel Prize in economics" (Copeland et. al., 2004, p.611).

Since the seminal work of Modigliani and Miller, 50 years of research has created a vast and unstructured body of literature on the topic of capital structure. An unmanageable number of publications and countless scientific studies have examined a wide range of theoretical and empirical aspects on the subject leading to different and often controversial results. Despite the great deal of discussion, the understanding of how firms make financing choices and what determines corporate capital structure is still limited and "it remains one of the most hotly contested issues in financial economics" (Rauh and Sufi, 2010, p.4243).

The theory of capital structure is critical because the financing mix of a company can have significant effects on it (Myers, 2001). If wealth could be enhanced by getting the leverage decision right, managers need to understand the key influences. Its actual relevance and the consequences on a business have been questioned in past research (Modigliani and Miller, 1958) but more recent empirical evidence clearly points out that capital structure does matter (Myers and Majluf, 1984). The regular discussion of capital structure related topics such as minimum equity ratios for banks and leveraged buy-outs (LBOs) in the daily press and professional journals illustrates the relevance of this matter.

Especially the search for optimal capital structure that maximises firms' value and shareholder wealth has received significant attention in the academic community and also in the real world (Baker and Martin, 2011). However, it could be argued that there is no reason to expect an all-purpose theory because an incalculable number of factors, circumstances and interests would have to be included to

generally explain every company's behaviour (Myers, 2001). For example, what is true for one company, industry or country might not be applicable to other cases with completely different influencing factors.

Nevertheless, the literature offers partial models that attempt to identify determinants of capital structure. One key theory widely cited in this area is the pecking order theory that states that firm's financing behavior follows a certain hierarchy (Myers, 1984). Myers and Majluf (1984) assert that businesses prefer to use internal funds first, then external debt, and only in exceptional circumstances, issue new equity. In contrast to this, the frequently-used trade-off theory suggests that there is an optimal capital structure for each individual firm which can be reached by balancing both the benefits and the costs of debt (Myers 1984).

The specifications and predictions of the two major theories are reviewed in this paper using central theoretical literature. Recent work on empirical tests is included to shed light on the still unresolved question of the actual practical relevance of the conflicting models. By carrying out a detailed literature review that evaluates, critisises, compares and synthesises research strategies, approaches, methods/methodologies and conclusions of the complex and at times controversial published academic research, I intend to establish an understanding of the present state of research in this area and to identify areas where further research is needed. Moreover, through own empirical research I attempt to work out whether the theoretical findings are relevant to the real world, i.e. to managers when making strategic and operational decisions.

1.2 Course of investigation and methodology

The paper is organized thematically and the subsequent section identifies and explains basic terms and corporate finance principles that are essential to understand the debate.

In view of the importance of Modigliani and Miller (1958) and the fact that their theory not only is a seminal piece of work but also underpins much of the research of later years providing an important foundation for the modern theories, this

paper then describes the underlying assumptions, rationale and conclusion of M&M models. The following parts are dedicated to the two main models including their theoretical implications and empirical evidence respectively. The last section discusses the most recent theoretical stream that advocates a unified approach and is based on the increasing recognition that the theories are not adequate when taken independently. The last part of the literature review discusses further theories, especially market timing considerations, and presents the most important single determinants of capital structure.

I primarily used Google Scholar, EBSCOhost, Emerald and Business Source Premier to identify the most highly cited articles in this area. I started my key word search with general terms such as "optimal capital structure" and later refined my research using specific terms such as "trade-off theory". As it is virtually impossible to include all relevant papers, I am specifically focusing on literature in the English language that examines capital structure issues using data from North American and European samples. Emphasis will be given to studies that have been advanced to explain actual gearing levels within the scope of specific theories. For that reason, I systematically excluded certain papers that use very broad analyses with rich specifications in order to identify general forces that determine capital structure. However, I will include important, but often non-quantifiable influences on the optimal gearing level question.

2 Definition of terms and corporate finance principles

2.1 Shareholder Value

The shareholder value model has become popular in the 1980s a result of the changing environment that companies are operating in influenced by the advanced globalisation of trading, the growing capital market orientation, the increased competition for available financial resources and consequently the higher pressure to perform (Sierke 1998).

Rappaport (1998, p.xiii) noted that "corporate boards and CEOs also universally embrace the idea of maximizing shareholder value [that] reflects the way rational participants in a market-based economy assess the value of an asset". Fundamental idea behind this concept is to measure a company's success and to evaluate alternative courses of action and decisions by the extent to which it enriches shareholders (Rappaport, 1998). So a primary goal for a company is to maximise the wealth of its shareholders by increasing the market value (Perridon and Steiner, 2012). This implies that an equivalent goal is to minimise the cost of capital and to provide returns for the owner that are adequate to the risks and above the opportunity costs which is the missed return on the best available investment alternative with the same level of risk (Perridon and Steiner, 2012).

2.2 Capital Structure

Capital structure refers to the sources of financing, particularly the proportions of debt (leverage/gearing) and equity that a business uses to fund its assets, operations and future growth (Jensen and Meckling, 1979).

2.2.1 Debt vs. Equity

Distinguishing equity and debt can be problematic in some cases because individual arrangements between lenders and borrowers can result in hybrid securities that have characteristics of both debt and equity, such as mezzanine capital (Kaiser, 1995). In order to avoid the issue of the difficult demarcation and to simplify this examination, it will be assumed that there are only two types of finance: equity through ordinary shares and debt.

International Accounting Standard (IAS) 32 defines an equity instrument as a contract that evidences a "residual interest in the assets of an entity that remains after deducting its liabilities" (Elliott and Elliott, 2012, p.243). The holders of ordinary shares are therefore entitled to all distributed profits after the claims of

holders of preference shares, debentures and other debt have been met (Arnold, 2008). Furthermore, as the owners, they have comprehensive information rights and are entitled to control the direction their company through their votes (Arnold, 2008).

On the other hand, there are financial liabilities, such as bank debt, commercial papers and corporate bonds that are contractual obligations "to transfer assets or provide services to other entities in the future as a result of past transactions" (Elliott and Elliott, 2012, p.243). This debt capital is typically raised with fixed principal and interest payments and finite maturity (Arnold, 2008).

Usually, debt finance is less expensive for the company because lenders require a lower rate of return than ordinary shareholders. Due to the fixed and prior claims on the annual cash flow and in liquidation debt present a lower risk than shares for the finance providers (Arnold, 2008). Additionally, in many cases there are securities provided and covenants included to further decrease the risk for the creditors (Arnold, 2008).

Secondly, in contrast to interest payments on debt, dividend payments to the holders of ordinary shares do not reduce the company's taxable profit (Scott, 1976). The lower corporate tax bill also reduces the effective cost of debt compared to the cost of equity.

Thirdly, the administrative and issuing costs of debt are lower than for ordinary shares (Pike and Neale, 2006). However, debt finance increases the risk of bankruptcy because the company is legally obligated to pay the agreed interest irrespective of whether or not the company is profitable (Pfeil, 2002). This exposes the shareholders to risk additional to the inherent business risk of the trading activities.

In conclusion, debt is beneficial because of its relatively low costs but there are limits to the excessive use of leverage (Pike and Neale, 2006).

2.2.2 Gearing

Capital or financial gearing refers to the extent to which a company's total capital consists of debt (Arnold, 2008). The terms gearing and leverage can be used interchangeably. However, leverage is used more frequently in North America and gearing in the United Kingdom (Arnold, 2008).

There are alternative approaches to determine leverage. Financial analysts, the press and managers often use book figures taken from balance sheets to calculate ratios because debt is better supported by assets in place than it is by growth opportunities (Myers, 1977). Book leverage might also be preferable because financial markets are extremely volatile and managers tend to believe that market leverage figures are unreliable as a guide to corporate financial policy (Frank and Goyal, 2009).

On the other hand, advocates of market leverage claim that the book value of equity is irrelevant for managers since it is basically a "plug number" used to balance both sides of the balance sheet (Welch, 2004). Furthermore, the book figures are backward looking while markets are generally forward looking (Frank and Goyal, 2009). Using a market value approach can be equally suitable depending on the purpose of the study. However, it should be noted that whereas determining the market value of a listed firm's equity by looking at the market capitalization may be unproblematic, finding the market valuation of debt securities, such as non marketable private or bank loans, can be difficult (Grinblatt and Titman, 2002).

There are also different formulae to calculate the proportion of debt in the capital structure that are presented and discussed briefly in the following. A commonly used measure is the debt to equity ratio that puts the long-term debt (due in >1 year) in relation to shareholders' funds (net asset or net worth) that is the difference between total assets and total liabilities in the balance sheet of the company (Arnold, 2008).

$$\text{Capital gearing (1)} = \frac{\text{Long-term debt}}{\text{Shareholders' funds}}$$

Many companies include total debt rather than long-term debt when relying heavily on overdraft facilities and other short-term borrowing, such as commercial bills (Elliott and Elliott, 2012). This is reasonable because many firms use short-term borrowing as a long-term source of finance and redeeming it is as critical as repaying long-term debt to avoid bankruptcy (Arnold, 2008).

The debt to equity ratio is useful because it allows conclusions to be drawn about the firm's ability to service its debt by selling assets in case of illiquidity (Pike and Neale, 2006). However, the book value of assets that is the historical purchase price minus depreciation can differ to a great extent from the actual selling price, especially if the company is forced to sell assets quickly (Pike and Neale, 2006). Replacing the shareholders' fund figure by the total market capitalization would minimize this issue and therefore is becoming more and more important.

The debt ratio that expresses debt as a fraction of total assets is an alternative measure that allows better comparisons between firms (Brigham and Ehrhard, 2010).

$$\text{Capital gearing (2)} = \frac{\text{Total debt}}{\text{Total assets}}$$

The debt ratio can help investors determine the financial health and potential risks the company faces considering its debt-load (Brigham and Ehrhard, 2010). A debt ratio greater than 1 indicates that a company has more debt than assets. Again, the market value approach could be used by replacing total assets by the sum of total debt and total market capitalization (Brigham and Ehrhard, 2010).

Both gearing measures, the debt-to-equity ratio and the debt ratio, are widely used and basically contain the same information but present them in a different way (Brigham and Ehrhard, 2010).

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2.2.3 Leverage effect

The leverage effect describes the fundamental link between a firm's level of gearing and the return on equity. The latter is defined as the "profit attributable to shareholders as a percentage of equity shareholders' funds" (Arnold, 2008, p.24). In contrast to all-equity companies, the return to the owners of leveraged firms is characterized by disproportionately high variations in relation to the underlying earnings (Arndt, 1995). However, the use of debt only increases the returns to shareholders as long as the cost of debt is less than the return on assets. If that is not the case, the geared firm's return on equity will drop equally dramatically (Perridon and Steiner, 2012). The amplification effect of gearing works in positive (leverage-chance) and negative (leverage-risk) directions and depends on the level of earnings before interest (Grinblatt and Titman, 2002; Arndt, 1995).

The example in the graph below illustrates that only if the earnings are greater than 1 million, the return on equity is increased by gearing. Otherwise the return is decreased because the financing costs outweigh the earnings or further increase the deficit (Perridon and Steiner, 2012).
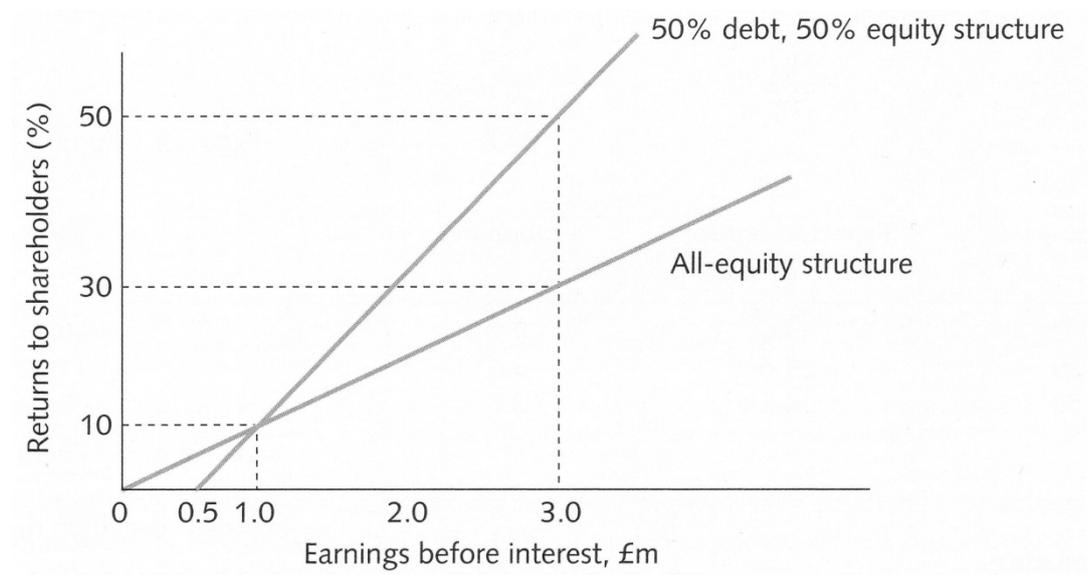
Exhibit 1: Changes in shareholder returns for ungeared and geared capital
structures
Source: Arnold, 2008

This interdependency demonstrates that it is important to consider both the business risk, which is defined as the variability of the firm's operating income, and the financial risk, which is the additional variability in returns to shareholders and the increased probability of bankruptcy for geared firms (Pike and Neale, 2006; Arndt, 1995). Firms operating with a low business risk can bear higher levels of financial risk, e.g. higher borrowing levels, without exposing their shareholders to excessive total risk.

It also demonstrates that higher gearing levels expose shareholder earnings to greater variability making equity riskier and more expensive (Pike and Neale, 2006).

2.3 Cost of Capital

The concept of the cost of capital plays a significant role in corporate finance theory and practice and is closely related to a firm's capital structure (Watson and Head, 2010). It refers to the expected return demanded by investors of the entire firm's issued securities as well as the discount rate in the valuation and investment appraisal process when using techniques such as discounted cash flow and net present value (Myers, 2001).

The weighted average cost of capital (WACC) is calculated by weighting the cost of equity (k_E) and debt after tax (k_D (1 – T)) in relation to their proportion in the total capital of the firm (Arnold, 2008).

$$WACC = k_E * W_E + k_D (1 – T)* W_D$$

where $W_E = \dfrac{\text{Value of equity}}{\text{Value of equity and debt}}$

A major determinant of a company's average cost of capital is its cost of equity that can be calculated using the capital asset pricing model (CAPM) that offers a solid theoretical foundation (Coenenberg et. al., 2000). Based on Markowitz

(1952) theory of portfolio selection, Sharpe (1964) introduced the theory to price capital assets allowing for the individual risk.

The CAPM allows shareholders to determine their required rate of return of an investment, based on the risk-free rate of return (r_F) plus an equity risk premium which is calculated using the average market risk premium for shares (r_M - r_F) adjusted by the beta factor to reflect the individual risk of the share (Arnold, 2008). This risk premium [β ($r_M - r_F$)] reflects both the systematic risk of the company and the excess return obtained by the market, e.g. a stock index, relative to risk-free investments (Watson and Head, 2010).

CAPM-Formula:

$$k_E = r_F + \beta\ (r_M - r_F)$$

The beta factor expresses the relative co-movement of a share with the market and is the key determinant in this model (Arnold, 2008). The higher the systematic risk expressed by beta, the higher the expected return of shareholders. This linear relationship can be expressed by the security market line (Copeland et. al., 2004). Despite the fact that the CAPM has drawn criticism it is the most widely used model to determine the cost of equity and required rate of return due to a lack of superior alternatives (Copeland et. al., 2004).

To approximate the cost of debt, it is important to consider both the prevailing interest rates and the default risk. The cost of debt of redeemable bonds can be found using an internal rate of return approach or a bond approximation formula (Watson and Head, 2010). Untraded debt such as bank loans that have no market value can be valued with comparable tradable debt securities or by determining the opportunity costs for lenders (Watson and Head, 2010). If a company is in a tax-paying position, the cost of debt finance must be adjusted by the tax shield (1 – T) to take into account the benefit from interest being tax deductible (Copeland et. al., 2004).

As a final step in calculating the WACC, the cost of the individual sources of finance must be weighted according to their relative importance using either market or book values (Copeland et. al., 2004). Generally, it is recommended to

use market values when possible to reflect the true value of a company's securities and the current required return of providers of finance. Using book values for the cost of equity could lead to an underestimation of the WACC and the acceptance of possibly unprofitable projects (Watson and Head, 2010). For valuation purposes, long-run target debt or equity ratios instead of actual ratios should be used to determine the weightings based on estimated future market value changes, financing activities and peer group comparison (Arndt, 1995).

"The lower a company's cost of capital, the higher the net present value of its future cash flows and therefore the higher its market value" (Watson and Head, 2010, p.281). Hence, if there was a financing mix that results in a minimum WACC, then it would be wise for a company to identify it and move towards this optimal capital structure.

2.4 Business valuation

Capital structure theory is closely related to the valuation of an enterprise because the optimal debt ratio is determined by maximizing the firm value. There are a variety of different occasions, techniques and practices in firm valuation that can lead to different results. However, discounted cash flow analysis (DCF) that is oriented towards the future and takes into account the time value of money and opportunity cost of capital has become the most commonly used in practice (Coenenberg et. al., 2004). The valuation of a firm with the help of the DCF approach involves the discounting of its future payment surpluses, after the consideration of taxes using the appropriate cost of capital (Kruschwitz and Löffler, 2006). That means that a certain cash flow figure is adjusted for the time value of money by converting it into the common denominator of time zero money (Arnold, 2008).

The payment surpluses are expressed by the free cash flow which is the cash generated by a business that is not required for operations or for reinvestment and that "can be paid out to the firm's financiers, namely the shareholders and the creditors" (Kruschwitz and Löffler 2006, p.3).

The free cash flow is profit before depreciation, amortization and provisions, but after interest, tax, capital expenditure and increases in working capital that are necessary to preserve the firm's competitive position and accept all investments with a positive net present value (Arnold, 2008).

2.5 Traditional view on capital structure

Since the basic principles of corporate finance that are necessary to understand the capital structure theory have been introduced, we can enter the debate by looking at the traditional view that prevailed before the 1950s.

It was thought beneficial to substitute cheaper funds for equity so long as the company's capacity to service the debt was ensured because the WACC, whose curve with respect to the amount of debt is u-shaped (see exhibit 6, p.20 for illustration), is reduced and the discounted future cash flows result in higher present values (Wrightsman, 1978).

The risks of excessive levels of gearing including the increasing volatility of shareholders' earnings and probability of financial distress would inevitably be punished by the stock market by a deterioration of share prices of a highly geared company (Pike and Neale, 2006; Arnold, 2008).

So the traditional view assumed that there was a specific optimal gearing level that eventually minimizes the cost of capital and maximizes the value of the firm, hence shareholders' wealth (Wrightsman, 1978).

However, this concept of an optimal capital structure with its critical gearing ratio turned out to be "highly desirable but illusory and difficult to grasp (Pike and Neale, 2006, p.479).

Some finance academics believed that a more solid theoretical foundation was needed to enhance the analysis of capital structure decisions and to increase the relevance to practitioners. Since then, several sophisticated models have been developed that attempt to expose and analyse the key theoretical relationships (Pike and Neale, 2006).

3 Literature review on theoretical models of capital structure theory

3.1 Modigliani and Miller

3.1.1 M&M without tax

Research papers on the theory of optimal capital structure frequently refer to the seminal work of the Nobel laureates Modigliani and Miller (1958, 1963). This stream of research tried to identify the depth of the relationship between leverage and market value of companies and marks the starting point of modern theory of capital structure (Myers, 1984). Modigliani and Miller (1958) managed to prove that in complete capital markets, changes in the capital structure of a firm do not affect its market value.

Modigliani and Miller (1958) created a fictional world without taxes, transaction costs, bankruptcy costs, growth opportunities, asymmetric information between insider and outsider investors and differences in risk between different firms and individuals. They proved that under these perfect conditions financing is irrelevant for shareholder's wealth and there is no optimal debt to equity ratio. However, the series of simplifying assumptions have often been questioned by subsequent literature.

While most recent papers about capital structure theory, such as Harris and Raviv (1991), just mention the theory briefly in their introduction, Myers (2001) actually examines the implications in his literature review. He concluded that the first M&M proposition implies that the total value of a firm and the shareholder wealth - no matter whether the firm had a leverage of 99% or 1% - are constant and cannot be improved through financing decisions.

To fully understand this key statement of capital structure literature and its significance, it is necessary to briefly explain the basic theoretical link between cost of capital and firm value.

Arnold (2008) explains that in corporate finance generally, the total market value (V) of a firm that has no future growth, as assumed in the M&M framework, is calculated by dividing the constant income stream (C) by the cost of capital (WACC):

$$V = \frac{C}{WACC}$$

Myers (2001, p.84) argues that "debt has a prior claim on the firm's assets and earnings, so the cost of debt is always less than the cost of equity". However, an increase in leverage using relatively cheaper debt leaves the overall cost of capital constant because the now riskier equity becomes expensive enough to outweigh the benefit of debt (Myers, 2001). Therefore, a firm's cost of equity (k_E) increases linearly with the debt-to-equity ratio as illustrated in the graph below and the cost of capital (WACC) depends only on the firm's risk class (Neus and Walter, 2008).
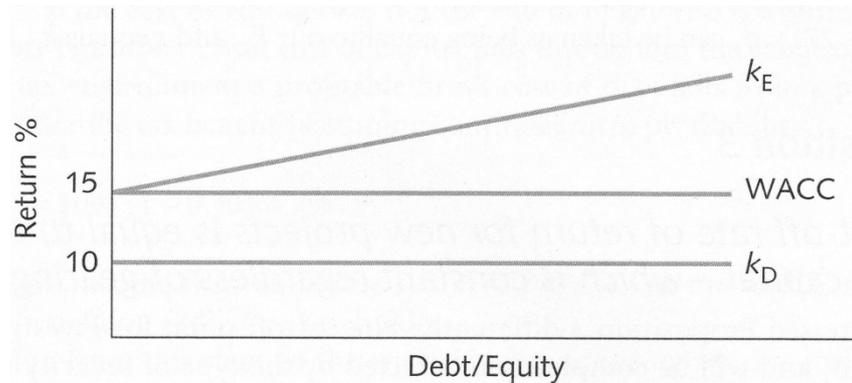
Exhibit 2: The cost of debt (k_D), equity (k_E) and WACC under the M&M no-tax model
Source: Arnold, 2008

In short, this is the reason why Modigliani and Miller (1958) claim that under perfect conditions the combination of financing sources is irrelevant and there is no optimal debt to equity ratio that maximises a company's value.
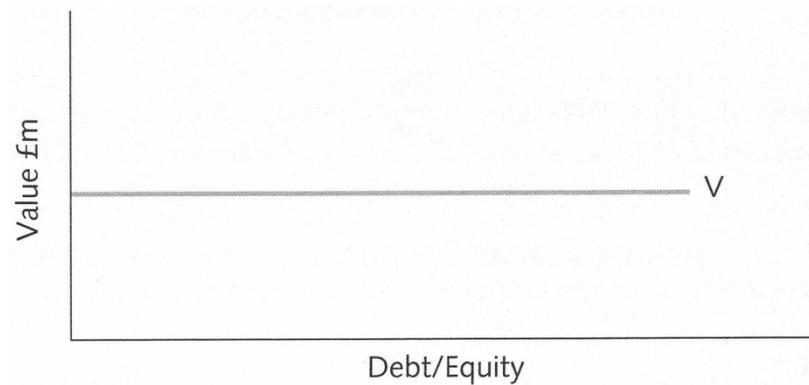
Exhibit 3: Value of the firm under the M&M no-tax model
Source: Arnold, 2008

Regarding the methodology, it is important to note that Miller and Modigliani (1958) used an abstract mathematical model which did not include the collection and analysis of data to arrive at this conclusion (Frank and Goyal, 2008). This is in contrast to recent approaches in the capital structure literature that mainly use quantitative (Shyam-Sunder and Myers, 1999) or less commonly qualitative (Graham and Harvey, 2001) research methods to empirically test the modern theories.

3.1.2 M&M with tax

Miller (1988) later argued that their proposition resulted in a highly controversial debate for the simple reason that researchers often failed to realize that the framework has a very limited and conditional validity. He re-emphasised that "the view that capital structure is literally irrelevant or that 'nothing matters' in corporate finance, though still sometimes attributed to us [Modigliani and Miller], […] is far from what we ever actually said about the real-world applications of our theoretical propositions" (Miller, 1988, p.100).

In order to make it more realistic, Modigliani and Miller (1963) later modified their model by lifting one restriction. They identified taxation as the primary reason why the combination of financing sources does matter because interests on debt may be deducted from the firm's income and thereby reduces the net taxable

earnings. As a result, this tax saving that constitutes an additional advantage to using debt capital lowers the effective cost of debt capital. The graph below illustrates that the required rate of return on debt itself is not reduced; rather the tax bill and therefore the overall cash outflow to the tax authorities is lower (Arnold, 2008).
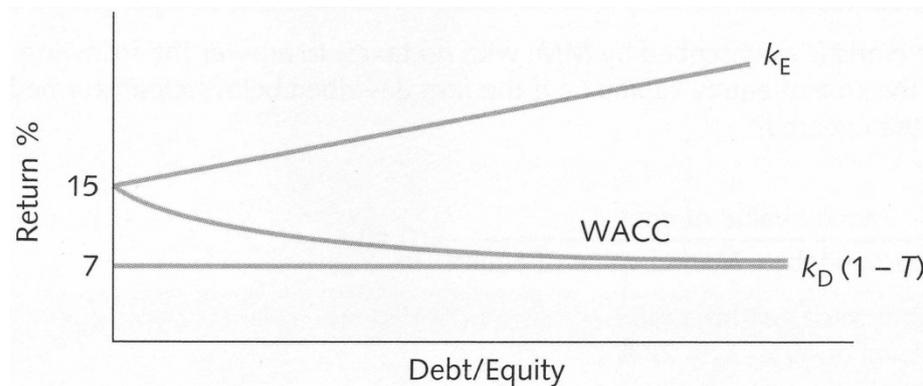
Exhibit 4: The cost of debt (k_D), equity (k_E) and WACC under the M&M tax model
Source: Arnold, 2008

"The WACC declines for each unit increase in debt so long the firm has taxable profits" while the value of the company rises (Arnold, 2008, p.809). Miller (1988, p.112) later noted that "in many ways this tax-adjusted MM proposition provoked even more controversy than the original invariance one" because it lead to the even more peculiar theoretical conclusion: The optimal gearing level is the highest possible in order to secure the tax shield.
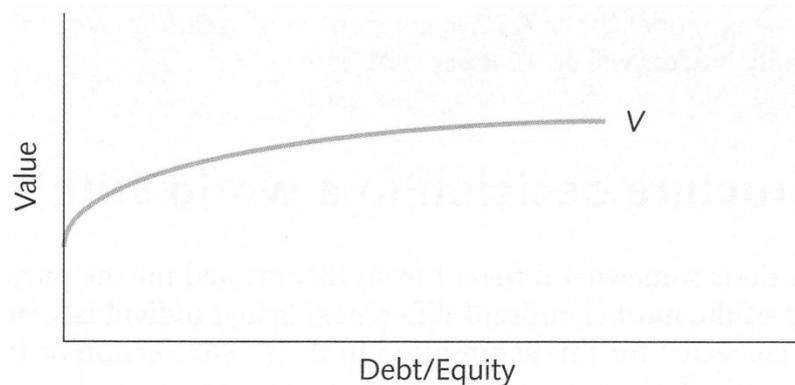
Exhibit 5: Value of the firm under the M&M no-tax model
Source: Arnold, 2008

Modigliani and Miller (1963, p.442) acknowledged that "there are limitations imposed by lenders […] as well as many other dimensions (and kinds of costs) in the real-world[....]". Miller (1988) later agreed to the common critique that firms may not always be profitable which would immediately offset or even reverse the tax benefit and increase the risk of bankruptcy. Furthermore, Merton (1974) argued that the ability to handle the burden of debt depends on various factors and is not constant but changes overtime and leaves the tax shield unpredictable and volatile. And according to Myers (2001, p.88) there might be "no net gain for investors once both corporate and individual taxes are considered". This statement is supported by Miller (1977).

Despite these imperfections and the fact that it fails to provide normative statements of practical relevance Modigliani and Miller's contribution to the theory of capital structure was considered "pathbreaking" (Jensen and Meckling, 1976, p.1975; Neus and Walter, 2008). Frank and Goyal (2008, p.141) conclude that "while the Modigliani-Miller theorem does not provide a realistic description of how firms finance their operations, it provides a means of finding reasons why financing may matter." As Merton Miller (1988, p.100) suggested, "[…] showing what doesn't matter can also show, by implication, what does." Today, the overall theoretical concept is widely accepted and has become a substantial part of economic theory and the very foundation for the modern finance theories (Scott, 1976; Miller, 1988).

Especially the trade-off theory directly advances the model by including further important factors such as bankruptcy costs. Myers (1984) used this systematic framework as a theoretical starting point for the "capital structure puzzle", removing the underlying constraints of the irrelevance propositions one by one.

3.2 Trade-off Theory

The trade-off theory which clearly dominates the literature on capital structure claims that a firm's optimal financing mix is determined by balancing the losses and gains of debt (Myers; 1977). This stream of literature predicts a unique capital structure for every firm where the marginal benefit equals the marginal cost of debt and changes in debt "should be dictated by the difference between current level and optimal debt level" (DeAngelo and Masulis; 1980, p.5).
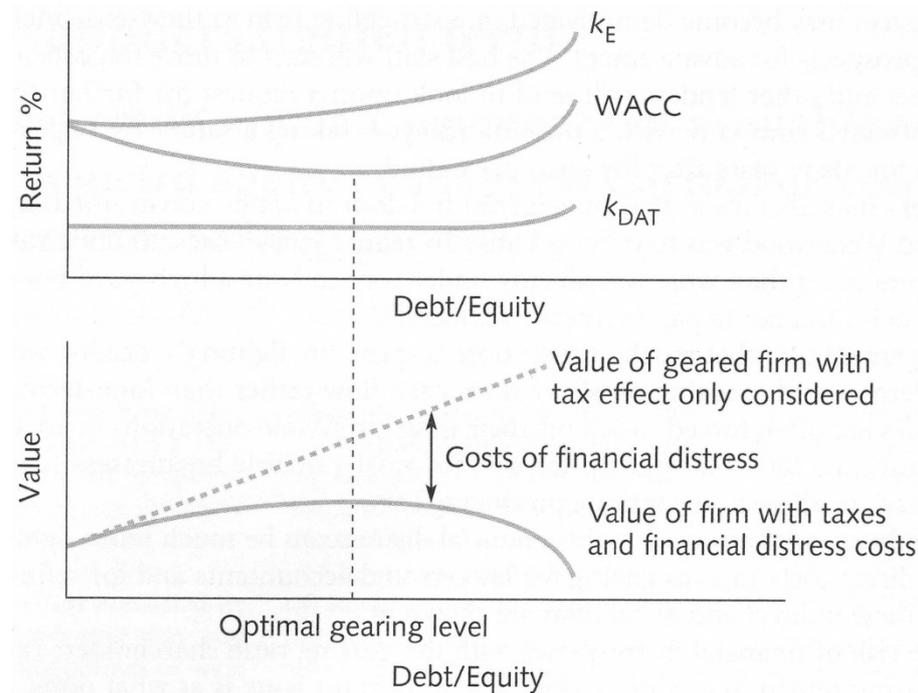
Exhibit 6: Cost of capital and the value of the firm with taxes and financial
distress, as gearing increases
Source: Arnold, 2008

3.2.1 Implications and explanations

Modigliani and Miller (1963) showed that the benefit of debt is primarily the tax-shield effect that arises due to the deductibility of interest payments. Basically, Myers (1977) combined this model with the bankruptcy cost framework of Kraus and Litzenberger (1973) and Scott (1976). Hence, in the classic, so-called static trade-off theory the costs of debt are mainly associated with direct and indirect

costs of bankruptcy. These include legal and administrative costs and more subtle costs resulting from the loss of reputation among customers and the loss of trust among staff and suppliers due to uncertainties (Myers, 1984; Bradley et.al., 1984). However, the consensus view is that "bankruptcy costs alone are too small to offset the value of tax shields" (Ju et.al., 2005, p.261) and additional factors must be included in a more general cost-benefit analysis of debt (Miller, 1977). For that reason, the agency costs framework of Jensen and Meckling (1976) that is known as a principal-agent problem is also considered in the trade-off model.

According to Jensen and Meckling (1976, p.1) agency costs arise due to the "separation of ownership and control" in situations in which agents make decisions affecting the welfare of the principals. The finance providers (principals) try to incentivise the managers (agents) to act in their best interest. The agency costs are the direct and indirect costs resulting from this attempt as well as the failure to make the agents to act this way (Arnold, 2008).

However, Frank and Goyal (2008) argue that the impact of the various agency conflicts on capital structure has not been completely clarified. Bradley et.al. (1984, p.860) contend that these costs which could include "costs of renegotiating the firm's debt contracts and the opportunity costs of non-optimal production/investment decisions" become economically significant especially when the firm is having difficulties to meet the obligations to creditors. Therefore, the broader term "costs of financial distress" is often used to refer to both bankruptcy and the various agency costs of debt (Myers, 2001).

This illustrates that the static trade-off theory is based on the original theory of capital structure by Modigliani and Miller (1958) because the perfect market assumption are loosened by including taxes, bankruptcy and agency costs (Ozkan, 2001). In contrast to the M&M framework, this stream of literature justifies moderate gearing levels. Furthermore, it plausibly substantiates the existence of an optimal or target capital structure that firms gradually try to achieve and maintain in order to increase shareholder wealth (Myers, 1984; Brounen et.al., 2005). According to this model, a value-maximizing firm facing a low probability

of going bankrupt should use debt to full capacity. Thus, one key prediction of the trade-off model is the positive correlation between profitability and gearing. Hovakimian et.al. (2004) argues that high profitability suggests that the firm can yield higher tax savings coupled with a lower possibility of bankruptcy.

Different variations of trade-off models can be found in the literature taking even more factors into account. For example, Auerbach (1985) created and tested an adjusted trade-off model and arrived at the conclusion that risky and fast-growing firms should borrow less. Furthermore, Fisher (1989) conducted a study with a variety of rich specifications arguing that capital structure also depends on restrictions in the debt-contracts, takeover possibilities and the reputation of management. But none of these theoretical and empirical further developments have managed to fully replace the traditional version. So most researchers still refer to the original assumptions described above when testing the trade-off theory.

There is one stream that tries to expand the literature, other studies reproduce tests with minor adjustments on different samples. Hence, there are richer and more specific models of firm behavior with more complex predictions and implications to be found in the body of literature that I exclude on purpose.

3.2.2 Empirical evidence

Because of its profound theoretical foundation, the literature about the model itself including its theoretical predictions and explanations shows little controversy. However, since the introduction of this model, a central and still unresolved issue in the capital structure research has been whether the trade-off theory sufficiently explains firms' financing behavior in the real world (Myers, 1984). In the contradictory empirical literature, evidence in favor and against the trade-off theory and optimal capital structure can be found. Frank and Goyal (2008, p.145) conclude that "tests face the problem that the main elements of the model are not directly observable" but proxies, i.e. measurable entities used to represent abstract concepts, have to be used.

It is noticeable that capital structure research is predominantly based on data from big U.S. corporations but it has become increasingly international in recent years (Ozkan, 2001). Standard and Poor's Compustat seems to serve as the main source of financial data even though many authors report incomplete data records which makes a significant number of firms unsuitable to include in samples (Titman and Wessels, 1988). A more detailed but more time-consuming way to collect data would be to work with the financial reports of the individual firms. Furthermore, there is a distinct preference for quantitative methods such as cross-section regression analyses because according to Frank and Goyal (2008, p.193) "it measures actions rather than beliefs". To present a more diversified choice of papers, it is important to include the unusual studies investigating European samples and those using different methodologies.

Schwartz and Aronson (1967) and Scott (1976) show the significant impact of the industry on debt ratios which corroborates the existence of optimal debt ratios. Bradley et.al. (1984) were able to confirm these results on a sample of 851 firms covering 25 different industries. More direct evidence is provided by Taggart (1977) and Auerbach (1985). Using target-adjustment models, they were able to identify significant adjustment coefficients which they take as an indicator that gearing is actively optimized. Jalilvand and Harris (1984) actually reach the same results with the same method but they claim that their approach is more valid because in contrast to Taggart (1977) they use data for individual firms instead of aggregated data.

Hovakimian et.al. (2001), Cai and Gosh (2003) and Fama and French (2002) support the trade-off model because their studies suggest that firms tend to adjust their financing mix towards target debt ratios. Ozkan (2001), using European and UK-based samples, has also documented that firms make their financing decisions as though they had target levels. Finally, Graham and Harvey (2001) conducted one of the most significant qualitative surveys in the field which showed that 71% out of 392 Chief Financial Officers indicated to consider a target debt-equity ratio when making debt decisions. This study is exceptional because of its normative

approach which is intended to actually advise practitioners on how to increase firm value with leverage (Frank and Goyal, 2008).

A substantial part of the recent literature has examined forces that justify variations from the optimal debt ratio in order to reconcile fluctuations with the trade-off theory. Marsh (1982, p.127) found that companies "try to maintain long term target debt levels, although they may deviate from these in the short run in response to timing considerations and capital market conditions". Similarly, Leary and Roberts (2005) refer to frictions in the capital markets that cause the rather infrequent rebalancing activities and "extended excursions away from […] targets" (Myers, 1984, p.578). They argue that shocks to gearing can have a prolonged effect when firms are confronted with considerable adjustment costs that outweigh the benefits of moving back to optimal capital structure immediately (Leary and Roberts, 2005). In this context, Kayhan and Titman (2007) discovered that several factors such as cash flows, investment needs, and stock price realization can provoke firms to move away from their debt targets.

However, firms try to gradually eliminate these deviations but according to Fama and French (2002, p.25) this "mean reversion of leverage" takes place at a slow rate. Ozkan (2001) disagrees with this statement because he found that UK firms adjust ratios relatively quickly but with a time lag. According to Fischer et.al. (1989) and Flannery and Rangan (2006) this delay argument is a key issue when testing the trade-off theory because researchers have to include multiple time periods in their models to allow firms to achieve their target capital structure. This is consistent with recent trade-off models, such as Fischer et.al. (1989) and Titman and Tsyplakov (2005). They provide evidence that firms adopt dynamic capital structure policies and accept variations in a certain range rather than following a strict and unique gearing ratio. This new stream of research, focusing on dynamic aspects, has become an important part of the capital structure literature (Frank and Goyal, 2008). It assumes that the link between the debt ratio and firm value is less strong when firms operate close to the optimum which makes the cost of deviating small. On this basis, Flannery and Rangan's (2006) approach takes into account that optimal debt ratios may circle around a vague

target. Their study shows that firms adjust capital structure toward their long-term targets at a rate higher than 30% per year.

But there are many authors that only report mixed evidence such as Titman and Wessels (1988), who question the relevance of the factors included in the static trade-off theory. In contrast to the prediction of the model, they found that non-debt tax shields, such as a high depreciation, and the use of debt are positively correlated. However, Mackie-Mason (1990) found that firms with tax loss carry forwards - acting as tax shields - are less likely to issue debt which is consistent with the Miller and Modigliani (1963) framework. Wright (2004) also challenges the tax factor because he discovered that gearing levels of corporations were fairly steady between 1900 and 2002 even though tax rates fluctuated to a great extent. Furthermore, in Graham and Harvey's (2001) survey merely 45% of the interviewed CFOs stated that their capital structure choices are influenced by tax considerations.

Serious doubts have emerged because firms seem to be geared rather conservatively despite the large economic benefits of debt (Ju et.al., 2005). While Wald (1999, p.161) found that profitability was "the single largest determinant of debt ratios" in an international capital structure study, Myers (2001, p.89) acknowledges that "in contrast to the logic of the model, empirical studies of the determinants of actual debt ratios consistently find that the most profitable companies […] tend to borrow the least". This negative relation between profitability and leverage is supported by many large-scale studies (Titman and Wessels, 1988; Rajan and Zingales, 1995; Fama and French, 2002)

According to Fama and French (2002) the negative relationship between profits and leverage is in line with the pecking order theory which is discussed in the subsequent section. However, Frank and Goyal (2003) offer an alternative explanation trying to justify this relationship from the trade-off theory perspective. Based on Fischer et.al. (1989) work, they argue that profitable firms can legitimately have less debt when adjustment costs are taken into account that cause firms to make large debt readjustments only periodically. Furthermore,

Frank and Goyal (2008, p.29) state that "the evidence on profitability is much less robust than is generally recognized" due to missing data biases.

To conclude, this review of empirical literature on the trade-off theory shows that the evidence generally confirms that firms appear to adjust their capital structures towards target ratios. There are other areas, especially the importance of the tax factor, where mixed results prevail. The profitability issue is evidence that rejects this model and rather supports the pecking-order model.

3.3 Pecking Order Theory

The pecking order theory has become a widely used model to analyse and explain firms' financing behavior. In contrast to the previous discussed approach, this theory challenges the existence of a well-defined optimal gearing ratio (Myers, 1984). Instead, firms seem to follow a hierarchical order of financing practices which can be traced back to Donaldson (1961, p.671) who was the first to observe that "management strongly favored internal generation as a source of new funds [….]". Based on this finding, Myers and Majluf (1984) developed the theory suggesting that firms will not seek external finance at capital markets until the reserve of retained earnings is exhausted. Then, "the debt market is called on first, and only as a last resort will companies raise equity finance" (Arnold, 2008, p.818).

In contrast to the trade-off theory, this stream of research considers interest tax shields and the potential threat of bankruptcy to be only of secondary importance. In fact, gearing ratios are adjusted when there is a need for external funds which results from the imbalance between internal cash flow, net of dividends, and real investment opportunities (Shyam-Sunder and Myers, 1999). In other words, only firms whose investment needs exceeded internally generated funds would borrow more debt. Myers (2001, p.93) concludes that "each firm's debt ratio therefore reflects its cumulative requirement for external financing" and that profitable companies with limited growth opportunities would always use their cash surplus to reduce debt rather than repurchasing shares.

3.3.1 Implications and explanations

There is an agreement in the literature about the key implications of the pecking order theory: due to the preference for internal funds, it predicts lower debt levels than the trade-off theory (Shyam-Sunder and Myers, 1999). Furthermore, Myers and Majluf (1984) state that the theory justifies why firms tend to create financial slack to finance future projects.

Several motivations for pecking order behavior can be found in the literature. Initially, the principal-agent problems associated with the separation of ownership and control served as an explanation why firms try to avoid capital markets (Myers, 2001). Baumol (1965, p.70) argued that firms with no or relative infrequent use of stock can "proceed to make its decisions confident in its immunity from […] punishment from the impersonal mechanism of the stock exchange".

Another stream of literature highlights the signaling effects of capital structure choices to outside investors (Ross, 1977). Many researchers have empirically proven that the announcements of equity issues result in significantly more severe stock price reactions than debt issues (Eckbo, 1986). Some scholars go further by saying that debt issues can signal confidence to the capital market that the firm is in fact an excellent firm and that the management is not afraid to borrow money (Frydenberg, 2004).

Myers and Majluf (1984), whose paper is one of the most often cited papers in finance, extended this approach by taking asymmetric information between managers and investors and its effects on investment and financing decisions into account.
But before, it is important to mention Akerlof's (1970) adverse selection argument that explains why prices of used cars drops significantly compared to new cars. The seller of a used car will usually have more information about the true performance of the car than the prospective buyer. The buyers require a discount to compensate for the possibility that they might purchase an "Akerlof lemon",

i.e. a car that appears to be in good condition but has a major flaw that is not visible from the outside.

Analogically, Myers and Majluf (1984) claim that managers have access to inside information and are able to make better statements regarding the true value, the riskiness and future prospects of the firm than less informed outside investors who are unable to accurately value the securities issued. Hence, it is likely that the market misprices a firm's shares since investors are unable to accurately value the securities issued (Myers and Majluf, 1984; Harris and Raviv, 1991; Myers, 2001). Therefore, equity investors demand an increased level of return for the informational disadvantage which represents additional risk. That means that for firms who are unable to convince rational investors of their true quality and future performance, equity finance has an "adverse selection premium" making it more expensive (Akerlof, 1970; Myers and Majluf, 1984).

A key statement in this matter was made by Stewart (1990, p.391) who contends that any equity issue raises doubts because "investors suspect that management is attempting to shore up the firm's financial resources for rough times ahead by selling over-valued shares". This is in line with the adverse selection problem that states that firms will only issue new equity when the stock is overpriced.
Issuing overpriced shares would transfer value from new investors to existing shareholders (Myers, 2001). This argument drives down share prices which can lead to an underinvestment problem so severe that potential profitable projects have to be rejected (Myers and Majluf, 1984).

This illustrates how the signaling effects and the consequences of the informational disadvantage taken together influence equity investors to require a "risk premium". It makes equity finance more expensive and therefore less attractive for companies as a financing instrument.

Harris and Raviv (1991) argue that within the original pecking order framework, capital structure decisions are designed to avoid inefficiencies that are caused by the information asymmetry, particularly the mispricing of shares. The logical conclusion is that from a firm's point of view, internal finance is most preferable

because sending a signal is avoided. Furthermore, debt dominates equity because it leads to less severe value impacts and minimizes chances of any misinterpretation (Neus and Walter, 2008). In other words, if external financing is inevitable, firms would rather issue securities that are less affected by asymmetric information, such as riskless debt.

However, this explanation has been criticised because it does not take into account the mentioned principal-agent conflict. In the signaling model, managers are assumed to act in the shareholder's best interest and to not take advantage of their superior information to serve their own interests (Neus and Walter, 2008). Whereas the pecking order model by Myers and Majluf (1984) recommends that managers should have high discretionary power over free cash flows, Jensen and Meckling (1976) advise the opposite. They argue that managers would make use of financial slack to invest in unprofitable projects such as empire building expansion strategies which would not benefit the shareholders (Jensen and Meckling, 1976). The idea that managers have a tendency to hold cash excessively to avoid the scrutiny of external investors is part of behavioral finance theory, in which agents behave irrationally (Elsas and Florysiak, 2008). In order to reduce the related agency costs, shareholders have an interest to reduce the managers' access to internal funds, thereby inducing them to raise external finance (Grossman and Hart, 1982; Jensen, 1986). This argument is based on the model's assumption that the efficiency of the capital markets would inevitably lead to the best allocation of funds to profitable projects (Neus and Walter, 2008). Furthermore, Grossman and Hart (1982) and Jensen (1986) imply that debt is a more effective mean to discipline managers and to reduce agency costs than equity because the implicit obligation to pay interests is more binding than a pledge to pay dividends.

The literature suggests additional factors but Myers (1984) contends that they are not significant enough to serve as single explanations. According to Myers (1984) firms tend to take the "path of least resistance" when internal funds are available because the process to obtain external financing is more complex and time-consuming. Communicating with outside investors and convincing them to invest with the help of prospectus and roadshows is expensive. If external financing is

inevitable, debt is next in the pecking order because "the degree of questioning and publicity associated with a bank loan or bond issue is usually significantly less than that associated with a share issue" (Arnold, 2008, p.819). Hence, funds with low transaction costs, such as administrative costs, are preferred.

3.3.2 Empirical evidence

Compared to the trade-off theory, research on the implications of the pecking order theory is less controversial because fewer studies have tried to expand or alter the model (Myers, 2001). However, this is in complete contrast to the empirical literature which is characterized by an ongoing debate about the predictive ability of the model. Myers (1984, p.582) acknowledges that "the pecking order hypothesis can be quickly rejected if we require it to explain everything".

The strongest evidence in favour for the pecking order is that it plausibly explains the mentioned negative correlation between profitability and leverage (Fama and French, 2004). Profitable companies often borrow very little not because they have a low target debt ratio but because profits are used for growth instead of external funds (Arnold, 2008). In other words, there is just no need for profitable firms to raise debt or equity, so they end up with low levels of gearing.
On the other hand, firms with low profitability may not have enough retained earnings to take promising investment opportunities and therefore have to use outside finance, first of all debt, to a greater extent (Fama and French, 2004).

However, supporting evidence is provided by Brounen et.al. (2005) who use data from four European countries and claim that their results are in line with the predictions of the pecking order theory. Similarly, Jordan et.al. (1998) found that the pecking order theory is a very important determinant of capital structure for UK firms. The seminal paper by Shyam-Sunder and Myers (1999) proposed an empirical test to investigate the pecking order theory and thereby has created an interesting discussion in capital structure literature. According to their frequently used model, the financing deficit in a certain period is directly reflected in their

new debt issued (Shyam-Sunder and Myers, 1999). When correlating these two factors, the slope coefficient should be close to one, meaning that a unit increase in deficit is fully financed by debt. Using a sample of 157 firms with consistent financing records between 1971-1989, Shyam-Sunder and Myers (1999) have documented a coefficient of 0.75 concluding that the pecking order model is an excellent first-order descriptor of financing behavior.

Chirinko and Singha (2000) were the first to question the interpretation of Shyam-Sunder and Myers (1999) regression test arguing that their empirical evidence does not allow any explicit statement about the relevance of neither the pecking order nor the trade-off theory. They challenge the assumption regarding the slope coefficient of the financing deficit and state that it "is neither a necessary nor a sufficient condition for the pecking order theory to be valid" (Chirinko and Singha, 2000, p.420). On the other hand, Shyam-Sunder and Myers (1999, p.221) justify their oversimplified approach by saying that "elaborate models have their own dangers, because variables may proxy for several different effects." This argument was further sharpened by Myers (2001) who identified that the issue with the quantitative tests of capital structure theories is that they usually depend on indirect measures for the unobservable factors that are expected to affect financing choices.

Frank and Goyal (2003) have stimulated further discussions by criticising the rather small data set of only US-traded firms used by Shyam-Sunder and Myers (1999) which arguably limits the generalisability of their model. Myers (2001) argues against it that both the trade-off and the pecking order theories are not general, but conditional and testing them on large, heterogeneous samples of firms can lead to inaccurate results. However, Frank and Goyal (2003) tried to reproduce the results using a more comprehensive sample of 768 firms and found significantly lower coefficients. They claim that traditional explanatory variables affecting financing decisions, such as the tangibility of assets, market to book ratios, size, and profitability, that are implicitly disregarded by the pecking order model are not wiped out by the finance deficit factor. Indeed, this argument raises legitimate doubts about Shyam-Sunder and Myers' (1999) assumption that a single factor could replace all other determinants that have been identified by a

vast body of literature over decades. Frank and Goyal (2003) findings also demonstrate that larger firms show greater pecking order behavior than smaller firms. This is supported by Fama and French (2002). As discussed above, this is in complete contrast to the logic of the pecking order theory because small firms are expected to be exposed to asymmetric information and more severe adverse selection problems since they receive less attention from equity analysts.

Finally, Bharath, Pasquariello, and Wu (2009) argue that the major pecking order shortcomings are revealed when examining firms confronted with a low degree of asymmetric information.

This contradiction induced a number of studies attempting to prove that information asymmetry is a questionable factor and does not lead to a strict financial hierarchy but to different financial policies (Frank and Goyal, 2008). According to Leary and Roberts (2010), distinguishing among the alternative possible sources of pecking order behavior remains an underexplored area in the literature. Leary and Roberts (2010) also question the validity of the pecking order theory because they find little support throughout their sample. They also show that pecking order behaviour is attributed to incentive conflicts rather than asymmetric information. They conclude that the divergence of empirical results have two sources. First of all, many authors still use the simple financing deficit regressions introduced by Shyam-Sunder and Myers (1999) even though its testing ability can be considered as disproved. Furthermore, "empirical implementations have employed a variety of interpretations of the [pecking order] hypothesis, further exacerbating the tension among existing studies" (Leary and Roberts, 2010, p.333).

However, based on a modified Shyam-Sunder and Myers (1999) test, Lemmon and Zender (2010) confirm that the pecking order theory is a good description of financing behavior for a broad cross-section of firms, independent of size. As an attempt to reconcile the findings presented by Fama and French (2002) and Frank and Goyal (2003), they conclude that equity issues by small firms are not inconsistent with the pecking order theory because they have relatively high growth options and "face the most restrictive debt capacity constraints" (Lemmon and Zender, 2010, p.1162).

Overall, this evidence explains why the pecking order theory is only partially successful in explaining all of firms' capital structure decisions. There is definitive supporting evidence to be found in the literature such as the negative correlation between debt and profitability and the less severe share price reactions after debt issues compared to equity issue announcements.

The evidence is mixed about whether or not firms actually adopt the financing hierarchy and whether or not the asymmetric information argument is valid because it does not seem to be applicable to small firms.

3.4 Synthesis approach

As discussed above, a significant stream of the empirical literature has tried to put both theories in a race against each other. Due to the set of precisely opposite predictions (Myers, 2001) it has been common practice to test the models independently. It is conspicuous that many researchers seem to take a position either for or against one of the models and then persist in their viewpoint throughout subsequent papers (Frank and Goyal, 2008). One should be aware that research such as the choice of statistical methods is subject to biases and adopting a "black or white" thinking in this field can be distortive. In this context, Frank and Goyal (2008, p.139) argue that the current models are not explicit but rather "point-of-view theories with a set of principles that only guide the development of specific models and tests".

Overall, the research so far has revealed that both models separately have serious problems (Fama and French, 2005) and neither of the two is able to classify and capture the complexity that exists in practice. Fama and French (2005, p.581) concluded with the obvious solution to regard pecking order and trade-off models ''as stable mates, each having elements of the truth that help explain some aspects of financing decisions". Frank and Goyal (2008) support this by stating that the underlying considerations are not inherently conflicting.

Cai and Ghosh (2003) actually provide evidence that both theories at the same time explain significant variations in a firm's capital structure. Mayer and Sussman (2004, p.19) suggest the pattern of "pecking order in the short run, trade-off in the long run". Their results support that firms on the one hand appear to avoid equity issues as long as possible but eventually return back to a certain gearing. This strand of literature was also substantially influenced by Beattie et.al. (2006) who state that by including the concept of a target range it is possible to reconcile the two competing theories. Using an interesting mixed method approach they found that within an optimal range, gearing ratio variations can be explained with the pecking order theory. Their large-scale regression analyses show that only extensive deviations from the optimum drive businesses to make costly adjustments. Moreover, their survey-based research revealed that both models "are not viewed by respondents as either mutually exclusive or exhaustive" (Beattie et.al., 2006, p.1404).

Beattie et.al. (2006) highlight the need to examine the predictions of a theory from different perspectives and they actually put the methodological approach used by the majority of researchers into question. They argue that large-scale and cross-sectional regression methods fail to capture the complexity and diversity of different financing strategies but merely identify the average behaviour of firms (Beattie et.al. 2006). For example, dynamic adjustments to capital structure cannot be captured with those types of studies (Elsas and Florysiak, 2008). Moreover, it is essential to consider the "firm specific heterogeneity" when working with panel data in order to avoid wrong inferences (Elsas and Florysiak, 2008, p.65). Beattie et.al. (2006) and Frank and Goyal (2008) advocate that it is necessary to shift the focus on different empirical tests, such as survey-based research that are able to provide greater insight into the actual decision processes.

Hovakimian et.al. (2001) and Flannery and Rangan (2006) are further approaches that highlight the importance of combining elements of both theories because they show concurrent explanatory power in their tests. Similarly, Leary and Roberts (2010) found that a unified approach is able to accurately explain over 80% of the observed financing decisions. Moreover, Tucker and Stoja (2011, p.226) conclude that the reconciliation is "not only theoretically desirable but readily observable".

Nevertheless, more research exploring this area is needed in order to become a widely accepted approach.

3.5 Further theories on capital structure

Another theoretical idea that competes with trade-off and pecking order theories is the so called market-timing explanation (Elsas and Florysiak, 2008). The market-timing theory states that firms sell or rebuy shares, when market prices are over-priced or low, respectively, using the "window of opportunity" (Baker and Wurgler 2002).

Similar to the pecking order theory, market timing indicates that firms do not move to some target leverage (Elsas and Florysiak, 2008) since equity transactions are solely timed to stock market conditions (Baker and Wurgler, 2002). Capital structure changes induced by market timing are therefore long-lasting (Bessler et. al. 2008). Hence, Baker and Wurgler (2002) advocate an ad-hoc theory of capital structure where the observed capital structure is not the result of a trade-off theory rationale but reflects the cumulative outcome of past market timing decisions.

According to this proposition, gearing ratios are negatively related to past stock returns (Bessler et. al., 2004). In a recent empirical study, Welch (2004) confirmed that stock returns are the most important determinant of capital structure changes.

However, Alti (2006) shows that effect of market timing efforts on gearing completely disappears within two years. Furthermore, many studies of US and European firms invalidate market timing as the primary explanation for capital structure decisions but find that the financing behaviour is consistent with a modified version of the dynamic trade-off theory, one that includes market timing as a short-term factor (e.g.; Kayhan and Titman, 2007; Flannery and Rangan, 2006, Bessler, et. al., 2008).

Leary and Roberts (2005) attribute the observed market timing effects to the high costs of making changes to the capital structure, such as transaction costs, and

argue that firms gradually move towards a target debt to equity range in the long term. This is supported by Frank and Goyal (2007) who argue that mean reversion of leverage is a stylised fact.

As an extension of existing capital structure theory, Kisgen (2006, p.1037) introduced the Credit Rating–Capital Structure hypothesis (CR-CS) that states that "credit ratings are a material consideration in managers' capital structure decisions due to the discrete costs (benefits) associated with different rating levels". Furthermore, the potential impact of credit rating changes directly influences capital structure because firms near a ratings change seem to issue less debt than firms not near a ratings change (Kisgen, 2006).

3.6 Stylised facts

Some significant empirical studies approach the capital structure problem by examining influencing factors separately, without the intention to prove a specific theory. A first comprehensive list of variables was provided by Harris and Raviv (1991, p.334) who argue that the available studies "generally agree that leverage increases with fixed assets, non-debt tax shields, growth opportunities, and firm size and decreases with volatility, advertising expenditures, research and development expenditures, bankruptcy probability, profitability and uniqueness of the product."

However, this strand of literature is not free of contradiction either because the explanatory power of some of those determinants has been questioned by Titman and Wessels (1988, p.17) who conclude their "results do not provide support for an effect on debt ratios arising from non-debt tax shields, volatility, collateral value, or future growth." Only recently, scholars managed to "at least reach consensus on some variables and financing patterns that appear sufficiently robust empirically" and that can be referred to as "stylised facts" (Elsas and Florysiak, 2008, p.44). Rajan and Zingales (1995) identified the factors growth, size, tangibility of assets and profitability as the most significant and reliably important

for predicting leverage of companies in industrialized nations. Later in their survey article, Frank and Goyal (2009) identified the same factors from a long list from prior literature and added expected inflation and median industry debt ratios.

In the following, I will give a brief overview over the six key factors of capital structure and their effect on leverage while considering the pecking order and trade-off theories when applicable.

Growth, measured by Tobin's Q, i.e. market-to-book ratios, has been proved to be negatively correlated with gearing ratios (Shyam-Sunder and Myers, 1999). This evidence is line with the theoretical predictions of the trade-off theory because growth could lead to rising costs of financial distress and therefore lower debt levels (Elsas and Florysiak, 2008). It is not, however, in line with the pecking order logic that predicts a positive correlation because investments in growth would be financed by issuing more debt (Elsas and Florysiak, 2008).

Size. Firms that are mature and large in terms of assets tend to have higher leverage (Frank and Goyal, 2009). This empirical evidence is consistent with the trade-off theory because large, more diversified companies face lower default risk and older companies face lower debt-related agency costs due to better reputations in debt markets (Frank and Goyal, 2009). The prediction of the pecking order theory in an environment with reduced asymmetric information is ambiguous (Elsas and Florysiak, 2008).

Tangibility of assets, measured by the ratio of fixed assets to total assets, has been found to have a positive effect on gearing ratios (Frank and Goyal, 2009). This result is confirmed by the trade-off theory because "tangible assets serve as collateral for debt financing, thereby reducing costs of financial distress and increasing the debt capacity of firms" (Elsas and Florysiak, 2008, p.45).

Profitability. As discussed above, the relationship between profitability and leverage is generally found to be significantly negative which can only be explained using the pecking order theory (Fama and French, 2004). Profitable

firms are predicted to prefer internal funds, the accumulate profits, over external funds which leads to lower debt levels over time (Frank and Goyal, 2009).

Industry median leverage. Hovakimian et. al. (2001) found that firms actively adjust their debt ratios towards the industry average. To explain this pattern, Frank and Goyal (2009) argue that managers use industry median leverage as a benchmark.

Expected inflation: When inflation is expected to be high, firms tend to have high leverage. This positive correlation is predicted by the trade-off theory because the real value of tax deductions on debt is higher when inflation is expected to be high (Taggart 1985).

Frank and Goyal (2009) conclude that in contrast to the trade-off theory, a model within the pecking order approach would need substantial theoretical development to account for those main robust factors. Furthermore, market timing provides no direct explanation for the key patterns (Frank and Goyal, 2009).

3.7 Conclusion of literature review

"Modigliani and Miller have ignited five decades of intensive and fruitful corporate finance research" (Bessler et. al., 2008, p.141). In contrast to Modigliani and Miller (1958) irrelevance proposition, it seems that there is definitely an optimal debt to equity ratio or range that maximizes shareholder wealth. However, my review demonstrates that the existing literature is far from being able to scientifically determine the exact optimum, most likely because financing decisions are influenced by various motives, forces and constraints. Capturing this real-world complexity and creating a simple and testable model for empirical researchers that is able to provide useful information for managers, represents a particular challenge. That means that existing theories inevitably are trade-offs between generality, simplicity and accuracy that only seem to work well under certain conditions (Myers, 2001).

The capital structure debate faces a seemingly futile dilemma with basically two opposing camps. The overall empirical situation is quite interesting: Despite the mixed results considering the importance of the tax factor and agency costs, the trade-off theory seems to have a good predictive ability. Especially further developments towards dynamic models provide valid evidence that firms adopt rational optimizing behaviour. However, only the pecking order theory is consistent with the phenomenon that profitable companies verifiably tend to borrow least. This negative correlation between debt and profitability and the less severe share price reactions after debt issues compared to equity issue announcements support the model but my review demonstrates why it is only partially successful. It has not been conclusively clarified whether or not firms actually adopt the financing hierarchy and whether or not the asymmetric information argument is valid because it does not seem to be applicable to small firms.

The only way out of this seems to be the synthesis and reconciliation of the two theoretical camps in the form of a unified approach which I recommend to be subject for future research. In doing so, more qualitative work and inductive methods should be used to generate new theory rather than testing the same old theories over and over again with quantitative models that have methodological issues. Frank and Goyal (2008, p.193) commented that "despite the benefits, the survey approach remains rare in corporate finance." The problem with the current stage of capital structure is that it fails to provide useful advice to CFOs on how to increase firm value (Frank and Goyal, 2008, p.139). In the future, more studies with normative character that are relevant to practitioners should be conducted in corporate finance. Frank and Goyal (2009) six core factor framework provides a useful basis for further studies of leverage.

Further theoretical and empirical work is necessary with regards to modern capital markets. Only recently, the importance of rating agencies for capital structure decisions has gained attention in the literature (Elsas and Florysiak, 2008).

4 Empirical study

4.1 Purpose and design of survey

"One unresolved question is whether and to what extent managers incorporate and implement the ideas from the literature in their financial decision making process" (Bessler et. al. 2008, p.114). With the help of a survey-based analysis I attempt to bring some light into the discussion by examining the practical relevance of the theoretical models, thereby complementing the numerous large-scale quantitative studies that can be found in the literature. The questionnaire that contains 23 questions about financing decisions and capital structure policy is partly based on Graham and Harvey (2001) who conducted one of the most significant qualitative surveys in the field.

The questions are organised into three categories. In the first section, I enquire what key factors affect how firms choose the appropriate amount of debt. In the following parts, specific statements are presented in order to gather information about what other factors affect a firm's debt policy and firm's decisions about increasing capital stock.

Respondents are asked to rate those statements on a scale from 0 ("Trifft nicht zu" / "Not Important") to 3 ("Trifft voll zu" / "Very important"). This allows me to report the overall mean (score) for every question as well as the percentage of respondents that answered either 2 or 3, thereby indicating whether a certain statement is considered relevant. I also included the fifth option "Nicht anwendbar" / "Not applicable" because some questions specifically address listed companies.

Every question is designed to provide insights to either one or more theoretical concepts. Similar to my literature review, I focus on the trade-off theory, the pecking-order theory and market timing considerations. Some questions also allow drawing conclusions about the determinants of capital structure presented in the "stylised facts" section.

The study was constructed as an anonymous survey because I think this is important in order to obtain truthful answers and to increase participation. Some of the questions, especially those about stock market behavior, could provide sensible information. For that reason, the identities of the survey respondents are unknown. However, I ask for a few firm-specific characteristics, such as size and the industry in which the company operates.

4.2 Issues of qualitative research

In contrast to traditional large-sample studies, a survey study has the advantage that qualitative problems can be analysed. However, when performing the analysis, drawing and interpreting the conclusions, it is important to keep in mind that there may be issues with the gathered data.
While pure quantitative studies are based on facts and objectively measurable conditions and circumstances, survey-based data is highly subjective.

The responses represent beliefs and there is "no way of verifying that the beliefs coincide with actions" (Graham and Harvey, 2001, p.197). The responses can deliberately or unknowingly diverge from the truth. This is especially problematic when respondents try to hide the true motives and reasons on purpose and reply opportunistically (Drobetz, 2006). This is the case when the person surveyed tends to give those answers that he or she believes are expected or desirable (Drobetz, 2006). Furthermore, there is the risk that survey questions, "no matter how carefully crafted, either might not be properly understood or might not elicit the appropriate information (Graham and Harvey, 2001, p.239).

4.3 Interpretation and evaluation of results

I sent out numerous E-Mails to invite companies to participate in my survey. I also made a number of calls to enquire personal details of the directors and CFOs in order to improve the response rate. Due to the fact that information given by

publicly traded companies is most relevant for my study, I focused on contacting listed companies as well.

Since this was only moderately successful, I changed my strategy to rely more on personal contacts through family members, friends and internships that I did myself.

Altogether, 11 companies of which three were publicly traded company completed my survey. Although the representativeness of my survey is limited due to the rather small number of respondents and their homogeneity in terms of industry and size, I was able to create meaningful results. The results will be structured thematically and presented as evidence for or against a certain theory or concept.

Exhibit 7: Edited survey results in condensed form

#	EN	DE	No of Answers	%	Trade-off Theory
1	**Does your firm have an optimal or target debt to equity ratio?**	**Angaben zum Zielverschuldungsgrad**			
	No target ratio or range	Kein Zielverschuldungsgrad	3	27%	
	Flexible target	Flexibler/dynamischer Zielverschuldungsgrad	2	18%	
	Somewhat tight target or range	Grober Zielverschuldungsgrad	5	45%	
	Very strict target	Fixer Zielverschuldungsgrad	1	9%	
			11	100%	

#	EN	DE	Score[1]	Relevance[2]	Evidence for theory or concept
	What factors affect how you choose the appropriate amount of debt for your firm?	**Welche Faktoren beeinflussen die Höhe der Verschuldung Ihres Unternehmens?**			
2	The potential costs of bankruptcy, near-bankruptcy, or financial distress.	Die zunehmende Insolvenzgefahr oder drohende Liquiditätsschwierigkeiten bei höherer Verschuldung.	1,64	64%	Trade-off Theory
3	The volatility of our earnings and cash flows (business risk).	Die Schwankungen der Gewinne und Cashflows.	1,55	55%	Trade-off Theory
4	The debt levels of similar firms in our industry.	Der Verschuldungsgrad vergleichbarer Unternehmen bzw. der Branchendurchschnitt.	1,55	55%	Determinant: Industry median leverage
5	Changes in the share price.[3]	Die Kursschwankungen unserer Aktie.[3]	1,33	33%	Dynamic Trade-off Theory
6	The credit rating (as assigned by rating agencies).	Das Kredit- bzw. Bonitätsrating unseres Unternehmens.	1,27	36%	Trade-off Theory & Credit Rating
7	The tax advantage of interest deductibility.	Die steuerliche Abzugsfähigkeit von Zinszahlungen.	1,00	18%	Trade-off Theory

#	EN	DE	Score[1]	Relevance[2]	Evidence for theory or concept
	What other factors affect your firm's debt policy?	**Welche weiteren Faktoren beeinflussen die Höhe der Verschuldung Ihres Unternehmens?**			
8	We issue debt when our recent profits (internal funds) are not sufficient to fund our activities.	Wir nehmen Fremdkapital auf, wenn wir nicht über ausreichend interne Finanzierungsquellen verfügen.	1,73	64%	Pecking order Theory; Determinant: Profitability, Growth
9	Tangible assets that can serve as collateral for financial liabilities.	Bei der Fremdkapitalaufnahme spielen unsere tangiblen Vermögenswerte, die potenziellen Kredite bei denen als Sicherheiten dienen können, eine wichtige Rolle.	1,45	55%	Determinant: Tangible assets
10	Financial flexibility (we restrict debt so we have enough internal funds available to pursue unexpected projects).	Wir begrenzen Fremdfinanzierung, damit stets ausreichend interne Mittel für Investitionen bzw. Akquisitionen und zur Abdeckung operativer Risiken zur Verfügung stehen.	1,27	45%	Pecking order Theory
11	We raise debt to lower our weighted average cost of capital.	Wir nehmen zusätzliches Fremdkapital auf, um unsere durchschnittlichen Kapitalkosten zu senken.	0,91	27%	Trade-off Theory
12	We even issue debt when we have accumulated substantial profits.	Wir nehmen Fremdkapital auf, selbst wenn wir über ausreichende Gewinnrücklagen verfügen.	0,82	18%	Pecking order Theory; Determinant: Profitability
13	We limit debt so our customers/suppliers are not worried about our firm going out of business.	Wir begrenzen Fremdfinanzierung um unsere Kunden und Lieferanten nicht zu beunruhigen.	0,82	36%	Trade-off Theory - Indirect cost of Financial Distress
14	Using debt gives investors a better impression of our firm's prospects than issuing common stock.[3]	Eine Fremdkapitalaufnahme gibt den Investoren bessere Hinweise auf die Perspektiven des Unternehmens als die Ausgabe neuer Aktien.[3]	0,67	0%	Pecking order Theory - Signaling
15	We delay issuing debt because of transactions costs and fees.	Wir verzögern eine Fremdkapitalaufnahme aufgrund der damit verbundenen Transaktionskosten und Gebühren.	0,64	27%	Dynamic Trade-off Theory
16	To ensure that upper management works hard and efficiently, we issue sufficient debt to make sure that a large portion of our cash flow is committed to interest payments.	Mit unserer Verschuldung stellen wir einen effizienten Umgang mit Unternehmensressourcen sicher, weil dadurch ein Teil der zukünftigen Cashflows für Zinszahlungen reserviert ist.	0,45	9%	Trade-off Theory with Agency Costs (FCF)
17	We issue debt when interest rates are particularly low.	Wir nehmen Fremdkapital auf, wenn die Zinsen sehr tief sind.	0,36	0%	Market Timing

#	EN	DE	Score[1]	Relevance[2]	Evidence for theory or concept
	What factors affect your firm's decisions about increasing capital stock?	**Welche Faktoren sind bei der Entscheidung über die Durchführung einer Kapitalerhöhung für Ihr Unternehmen relevant?**			
18	We are concerned about issuing stock because the announcement could drive down share prices.[3]	Wir haben bedenken, dass die Ankündigung einer Kapitalerhöhung eine negative Kursreaktionen hervorrufen kann.[3]	2,33	67%	Pecking order Theory - Signaling/Asymmetric Information
19	We raise equity when there are no possibilities to obtain funds using debt, convertibles, or other sources.	Wir nehmen Eigenkapital auf, wenn keine anderen externen Finanzierungsmöglichkeiten zur Verfügung stehen (insb. Fremdfinanzierung und hybride Wertpapiere).	1,91	73%	Pecking order Theory
20	Maintaining a target debt-to-equity ratio.	Wir streben die Einhaltung einer Ziel-Kapitalstruktur an.	1,64	55%	Trade-off Theory
21	Whether our recent profits have been sufficient to fund our activities.	Wir nehmen Eigenkapital auf, wenn wir nicht über ausreichende interne Finanzierungsquellen verfügen.	1,55	55%	If no: Pecking order Theory; Determinant: Profitability
22	The amount by which our stock is undervalued or overvalued by the market.[3]	Wir orientieren uns daran, ob eine Unter- bzw. Überbewertung unserer Aktie am Markt vorliegt.[3]	1,33	33%	Market Timing
23	We issue equity if stock price has recently risen.[3]	Wir begeben neue Aktien, wenn der Kurs unserer Aktie stark angestiegen ist.[3]	0,67	0%	Market Timing

[1] Score - arithmetic mean of all answers on the scale of 0 (not important) to 3 (very important)

[2] Relevance - % of respondents identifying factor as "important" (2) or "very important" (3)

[3] Question concerns listed companies only

Factor	Relevance
The potential costs of bankruptcy, near-bankruptcy, or financial distress	64%
The debt levels of similar firms in our industry	55%
The volatility of our earnings and cash flows (business risk)	55%
The credit rating (as assigned by rating agencies)	36%
Changes in the share price*	33%
The tax advantage of interest deductibility	18%

■ Relevance - % of respondents identifying factor as "important" (2) or "very important" (3)
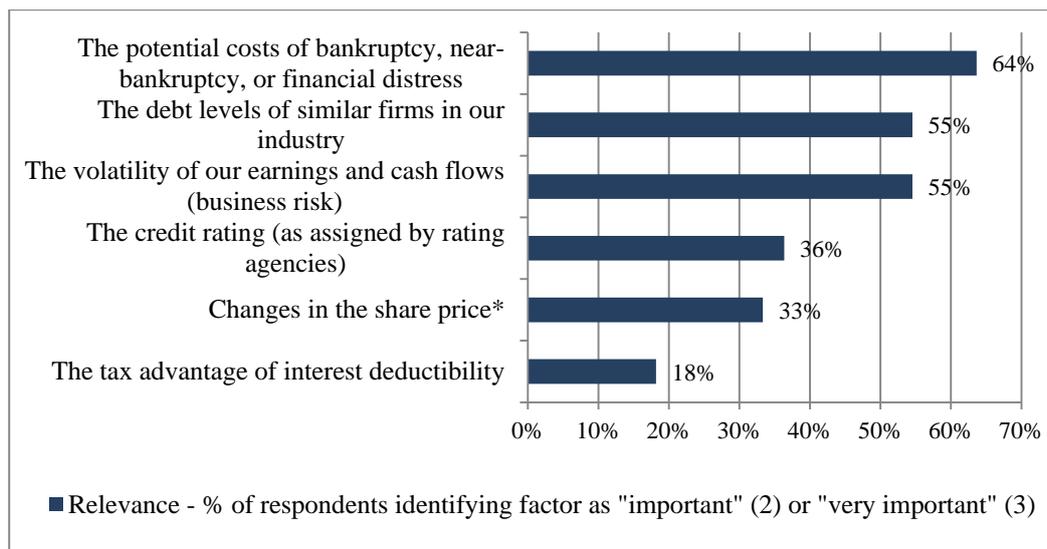
*Question concerns listed companies only
Exhibit 8: "What factors affect how you choose the appropriate amount of debt for your firm?"
Source: Own illustration based on survey results

It is first of all apparent that the companies questioned do not consider the tax deductibility of interest payments as an important factor when choosing the appropriate amount of debt. The respective score of 1,00 (Exh. 7; #7) is relatively low even though it is considered a major advantage of increasing debt levels in the literature about the trade-off theory.

A striking point is that the credit rating with a score of 1,27 (Exh. 7; #6) and the potential costs of bankruptcy, near-bankruptcy, or financial distress with a score of 1,64 (Exh. 7; #2) are more important influencing factors. This observation can be viewed as an indication that companies try to balance the potential costs and benefits of debt.

Further support for the trade-off theory is provided by the fact that the volatility of earnings and cash flows (score of 1,55; Exh. 7; #3), that according to Fama and French (2002) increases the risk of financial distress, do affect financing decisions.
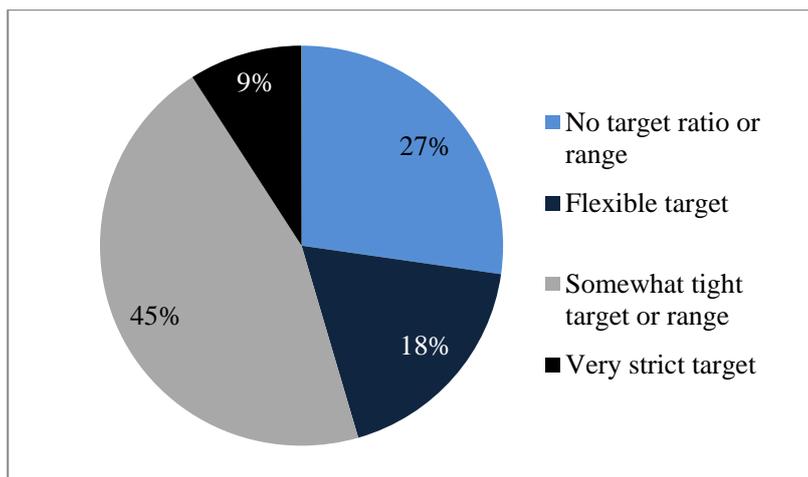
Exhibit 9: "Does your firm have an optimal or target debt to equity ratio?"
Source: Own illustration based on survey results

The answer to the question whether the surveyed firms have an optimal or target debt to equity ratio gives direct information about the practical relevance of the trade-off theory. 27% (Exh. 9) of companies answered that they do not have a target ratio or range and actually 9% have very strict target. However, the majority of firms (64%) indicated that they follow a flexible target or range.
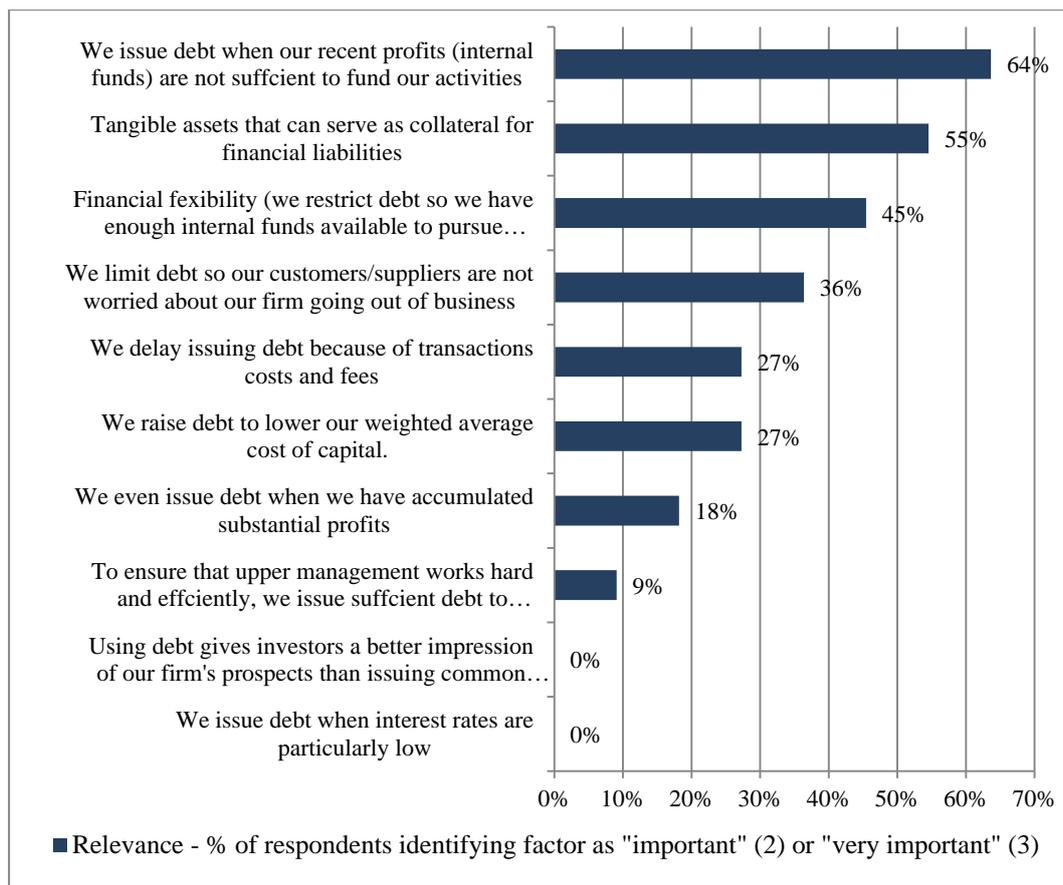
*Question concerns listed companies only
Exhibit 10: "What other factors affect your firm's debt policy?"
Source: Own illustration based on survey results
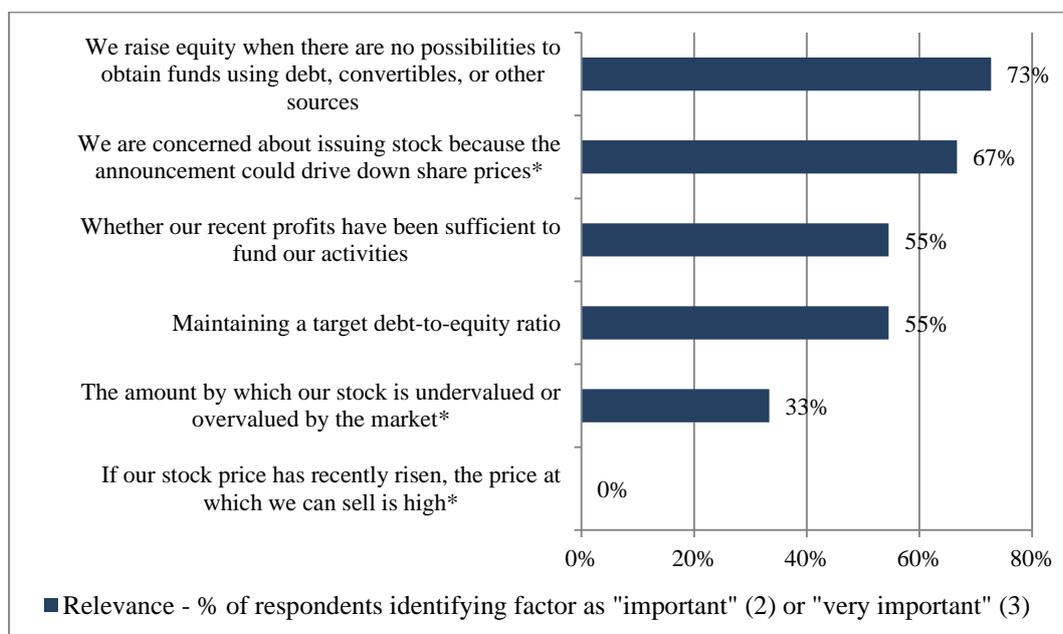
*Question concerns listed companies only
Exhibit 11: "What factors affect your firm's decisions about increasing capital stock?"
Source: Own illustration based on survey results

Furthermore, the respondents reported that maintaining a target debt-to-equity ratio is a rather important issue when deciding whether to increase capital stock (score of 1,64; Exh. 7; #20).

The majority of surveyed companies did not agree that debt is a mean to discipline upper management (score of 0,45; Exh. 7; #16). Only 9% of companies categorises this free cash flow problem as „important" or "very important". This is in complete contrast to the theoretical findings in the literature about the trade-off theory with agency costs. Generally, the questionnaire evaluation does not indicate that agency-conflicts play an important role in financing decisions.

Empirical support for the pecking order theory is provided by the survey questions about the financing activities in case of limited internal funds. It becomes apparent that the availability of recent profits seems to influence the amount of debt to a great extent (score of 1,73; Exh. 7; #8). Furthermore, the hypothesis that capital stock is increased when internal funds are insufficient received less approval (score of 1,55; Exh. 7; #21) which is consistent with the predictions of the pecking order theory. Equity appears to be only a last resort for providing funds when all other financing sources have been exhausted (score of 1,91; Exh. 7; #19).

The companies were asked about their preference for financial slack which 45% of companies referred to as "important" or "very important" (score of 1,27; Exh. 7; #10). This need for financial flexibility supports the pecking order theory.

It becomes obvious that companies are concerned about equity issues due to the negative price reactions usually following the announcement (score of 2,33; Exh. 7; #18). This is in line with the pecking order theory with asymmetric information. However, the results only provide mixed results for the signaling hypothesis. Only one out of the three listed companies agrees that debt gives investors a better impression of the firm's prospects than issuing common stock (score of 0,67; Exh. 7; #14)

The survey results provide only moderate evidence for the market timing theory. The three listed companies do not fully agree that changes in the price of common stock (score of 1,33; Exh. 7; #5) and the current share valuation by the market (score of 1,33; Exh. 7; #22) are important issues when making financing

decisions. Furthermore, firms were specifically asked whether they perform a capital increase after stock price has recently risen, thus the price at which they can sell is high (score of 0,67; Exh. 7; #23). This question and the question whether firms issue debt when interest rates are particularly low (score of 0,36; Exh. 7; #17), received a very low degree of support.

Furthermore, the determinants "industry median leverage" (score of 1,55; Exh. 7; #4) and "tangibility of assets" (score of 1,45; Exh. 7; #9) taken form Frank and Goyal (2009) six factor model scored relatively high and appear to be relevant in practice.

5 Conclusion

Modigliani and Miller (1958) have created a solid theoretical foundation for the modern research on capital structure. However, scholars have established that a firm's capital structure mix does matter and there is a perception amongst directors and Chief Financial Officers that there is an optimal gearing level or at least a range of gearing levels that has an effect on shareholder wealth. Since determining this level, that certainly does not range at either extreme of the spectrum, is very complex in such multifaceted analysis, one cannot expect an all-purpose theory of capital structure that embraces all important factors. For this reason, literature on capital structure is highly fragmented with an ongoing debate and controversial study results. The theories that have been developed since M&M, especially the trade-off theory and the pecking order theory, seem to work well under certain conditions but taken individually, they are not able to explain everything. Therefore, it is important to have a more comprehensive view on capital structure to explain the actual gearing levels adopted by firms. Regarding those theories as complements instead of substitutes and taking into account further concepts such as market timing and key determinants such as size, growth, tangibility of assets is the way to go for future research.

By surveying 11 German companies, this study attempted to analyze key determinants of capital structure and financing decisions within the scope of theories and concepts taken from the current body of literature.
The companies in the sample are particularly concerned about the potential costs of bankruptcy, debt levels of similar firms, the inherent business risk, the sufficiency of internal funds and the tangibility of assets when issuing debt. When issuing equity the target debt-to-equity ratio, the negative share price reactions upon announcement and the availability of alternative sources of finance are taken into account.

In contrast to the previous empirical findings, the survey results indicate that firm's financing decisions are not significantly influenced by attempts to time the market. In general, the theoretical models of capital structure decisions,

particularly the trade-off theory and the pecking order theory obtain a fair amount of empirical support. However, the existing theoretical approaches such as signaling, agency conflicts and transaction costs that have been used to explain those concepts have failed to receive support. More qualitative research is needed to investigate this issue.

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6. Appendix

Appendix-Exhibit 1: Unedited survey results

Zeitstempel	Welcher Branche gehört Ihr Unternehmen an?	Wie ist die Größe Ihres Unternehmens einzuordnen?	Hat Ihr Unternehmen ein optimales Verhältnis zwischen Eigenkapital- und Fremd- festgelegt?	Handelt es sich bei Ihrem Unternehmen um eine börsennotierte Aktiengesellschaft?	[Die zunehmende Insolvenzgefahr oder drohende Liquiditätsschwierigkeiten bei höherer Verschuldung]	[Die Schwankungen der Gewinne und Cashflows]	[Die steuerliche Abzugsfähigkeit von Zinszahlungen]	[Der Verschuldungsgrad vergleichbarer Unternehmen bzw. der Branchendurchschnitt]	[Das Kredit- bzw. Bonitätsrating unseres Unternehmens]	[Die Kursschwankungen unserer Aktie]	[Wir nehmen Fremdkapital auf, wenn wir nicht über ausreichend interne Finanzierungsquellen verfügen.]	[Wir nehmen Fremdkapital auf, wenn wir ausreichende interne Gewinnrücklagen verfügen.]	[Wir nehmen Fremdkapital auf, wenn die Zinsen sehr tief sind.]	[Wir nehmen zusätzliches Fremdkapital auf, um unsere Kapitalkosten zu senken.]	[Wir begrenzen Fremdfinanzierung, damit stets ausreichend interne Mittel für Investitionen bzw. Akquisitionen und zur Abdeckung operativer Risiken zur Verfügung stehen.]	[Wir begrenzen Fremdfinanzierung um unsere Kunden und Lieferanten nicht zu beunruhigen.]	[Mit unserer Verschuldung stellen wir einen effizienten Umgang mit Unternehmensressourcen sicher, weil dadurch ein Teil der zukünftigen Cashflows für Zinszahlungen reserviert ist.]	[Bei der Fremdkapitalaufnahme spielen unsere tangiblen Vermögenswerte, die potenziellen Kreditgebern als Sicherheiten dienen können, eine wichtige Rolle.]	[Wir verzögern eine Fremdkapitalaufnahme aufgrund der damit verbundenen Transaktionskosten und Gebühren.]	[Eine Fremdkapitalaufnahme gibt den Investoren bessere Hinweise auf die Perspektiven des Unternehmens als die Ausgabe neuer Aktien.]	[Wir streben die Einhaltung einer Ziel-Kapitalstruktur an.]	[Wir nehmen Eigenkapital auf, wenn wir nicht über ausreichende interne Finanzierung verfügen.]	[Wir nehmen Eigenkapital auf, wenn wir keine anderen externen Fremdfinanzierungs- und hybride Wertpapiere stehen (insb.) verfügen.]	[Wir haben bedenken, dass die Ankündigung einer Kapitalerhöhung eine negative Kursreaktion hervorrufen kann.]	[Wir orientieren uns daran, ob eine Unter- bzw. Überbewertung unserer Aktie am Markt vorliegt.]	[Wir begeben neue Aktien, wenn der Kurs unserer Aktie stark angestiegen ist.]
11.07.2013 11:53:02	Maschinen und Anlagenbau	Mittleres Unternehmen MA: ≤250 // Umsatz ≤50	Flexibler/dynamischer Zielverschuldungsgrad	Nein	Trifft voll zu	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft weniger zu	Nicht anwendbar	Trifft weniger zu	Trifft weniger zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft zu	Trifft weniger zu	Trifft zu	Trifft nicht zu	Nicht anwendbar	Trifft nicht zu	Trifft nicht zu	Trifft weniger zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
12.07.2013 17:22:07	Medien (Print, Film, TV), Funk, Software	Großes Unternehmen (MA: >250 // Umsatz >50)	Grober Zielverschuldungsgrad	Ja	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft weniger zu	Trifft nicht zu	Trifft nicht zu	Trifft weniger zu	Trifft weniger zu	Trifft nicht zu	Trifft weniger zu	Trifft nicht zu	Trifft weniger zu	Trifft nicht zu	Trifft weniger zu	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft weniger zu
15.07.2013 12:26:07	Internet, Multimedia	Großes Unternehmen (MA: >250 // Umsatz >50)	Grober Zielverschuldungsgrad	Ja	Trifft weniger zu	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft zu	Trifft zu	Trifft zu	Trifft nicht zu	Trifft zu	Trifft zu	Trifft weniger zu	Trifft nicht zu	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft voll zu	Trifft zu	Trifft voll zu	Trifft voll zu	Trifft zu
17.07.2013 10:32:39	Internet, Multimedia	Mittleres Unternehmen (MA: ≤250 // Umsatz >50)	Fixer Zielverschuldungsgrad	Nein	Trifft zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft nicht zu	Nicht anwendbar	Trifft weniger zu	Trifft weniger zu	Trifft nicht zu	Trifft weniger zu	Trifft zu	Trifft nicht zu	Trifft weniger zu	Trifft weniger zu	Trifft weniger zu	Nicht anwendbar	Trifft zu	Trifft voll zu	Trifft zu	Trifft zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
24.07.2013 08:46:13	Baugewerbe, Handwerk, Fertigung	Kleines Unternehmen (MA: ≤50 // Umsatz ≤10)	Kein Zielverschuldungsgrad	Nein	Trifft zu	Trifft zu	Trifft nicht zu	Trifft weniger zu	Trifft weniger zu	Nicht anwendbar	Trifft nicht zu	Trifft nicht zu	Trifft nicht zu	Trifft nicht zu	Trifft weniger zu	Trifft nicht zu	Trifft zu	Trifft nicht zu	Trifft nicht zu	Trifft voll zu	Trifft zu	Trifft zu	Trifft weniger zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
25.07.2013 13:37:06	Energiewirtschaft, Rohstoffe	Großes Unternehmen (MA: >250 // Umsatz >50)	Grober Zielverschuldungsgrad	Nein	Trifft zu	Trifft voll zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Nicht anwendbar	Trifft voll zu	Trifft zu	Trifft zu	Trifft nicht zu	Trifft weniger zu	Trifft weniger zu	Trifft voll zu	Trifft nicht zu	Trifft nicht zu	Trifft voll zu	Trifft voll zu	Trifft zu	Trifft zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
25.07.2013 15:13:12	Automobilindustrie, Maschinen- & Anlagenbau	Mittleres Unternehmen MA: ≤250 // Umsatz ≤50	Grober Zielverschuldungsgrad	Nein	Trifft voll zu	Trifft zu	Trifft nicht zu	Trifft weniger zu	Trifft weniger zu	Nicht anwendbar	Trifft voll zu	Trifft weniger zu	Trifft weniger zu	Trifft nicht zu	Trifft zu	Trifft nicht zu	Trifft zu	Trifft nicht zu	Trifft nicht zu	Trifft weniger zu	Trifft zu	Trifft zu	Trifft weniger zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
26.07.2013 12:19:03	Internet, Multimedia	Kleines Unternehmen (MA: ≤50 // Umsatz ≤10)	Kein Zielverschuldungsgrad	Nein	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft zu	Trifft nicht zu	Nicht anwendbar	Trifft nicht zu	Trifft nicht zu	Trifft zu	Trifft nicht zu	Trifft weniger zu	Trifft nicht zu	Trifft zu	Trifft nicht zu	Trifft nicht zu	Trifft weniger zu	Trifft zu	Trifft zu	Trifft weniger zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
29.07.2013 17:49:34	Banken, Finanzen, Unternehmensberatung	Kleines Unternehmen (MA: ≤50 // Umsatz ≤10)	Flexibler/dynamischer Zielverschuldungsgrad	Nein	Trifft nicht zu	Trifft zu	Trifft zu	Trifft zu	Trifft zu	Nicht anwendbar	Trifft weniger zu	Trifft zu	Trifft zu	Trifft nicht zu	Trifft zu	Trifft zu	Trifft zu	Trifft nicht zu	Trifft zu	Trifft zu	Trifft zu	Trifft zu	Trifft weniger zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
30.07.2013 12:53:24	Immobilien	Großes Unternehmen (MA: >250 // Umsatz >50)	Grober Zielverschuldungsgrad	Ja	Trifft zu	Trifft voll zu	Trifft zu	Trifft zu	Trifft voll zu	Trifft weniger zu	Trifft weniger zu	Trifft zu	Trifft weniger zu	Trifft zu	Trifft voll zu	Trifft zu	Trifft weniger zu	Trifft zu	Trifft voll zu	Trifft voll zu	Trifft zu	Trifft zu	Trifft weniger zu	Trifft voll zu	Trifft weniger zu	Trifft nicht zu
30.07.2013 18:57:08	Maschinen und Anlagenbau	Mittleres Unternehmen MA: ≤250 // Umsatz ≤50	Kein Zielverschuldungsgrad	Nein	Trifft nicht zu	Trifft zu	Trifft zu	Trifft weniger zu	Trifft weniger zu	Nicht anwendbar	Trifft weniger zu	Trifft nicht zu	Trifft nicht zu	Trifft nicht zu	Trifft nicht zu	Trifft nicht zu	Trifft zu	Trifft nicht zu	Nicht anwendbar	Trifft weniger zu	Trifft zu	Trifft weniger zu	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar

Appendix-Exhibit 2: Unedited survey results (scores)

Zeitstempel	Welcher Branche gehört Ihr Unternehmen an?	Wie ist die Größe Ihres Unternehmens einzuordnen?	Hat Ihr Unternehmen ein optimales Verhältnis zwischen Fremd- und Eigenkapital festgelegt?	Handelt es sich bei Ihrem Unternehmen um eine börsennotierte Aktiengesellschaft?	[Die zunehmende drohende Insolvenzgefahr bei höherer Verschuldung]	[Die Schwankungen der Gewinne und Cashflows]	[Die steuerliche Abzugsfähigkeit von Zinszahlungen]	[Der Verschuldungsgrad vergleichbar Unternehmen bzw. der Branchendurchschnitt]	[Das Kreditrating bzw. Bonitätsrating unseres Unternehmens]	[Die Kursschwankungen unserer Aktie]	[Wir nehmen Fremdkapital auf, wenn wir nicht über ausreichend interne Finanzierungsquellen verfügen.]	[Wir nehmen Fremdkapital auf, wenn wir selbst über ausreichende Gewinnrücklagen verfügen.]	[Wir nehmen Fremdkapital auf, wenn die Zinsen sehr tief sind.]	[Wir nehmen zusätzliches Fremdkapital auf, um unsere Kapitalkosten zu senken.]	[Wir begrenzen Fremdfinanzierung, damit stets ausreichend interne Mittel für Investitionen bzw. Akquisitionen zur Verfügung stehen.]	[Wir begrenzen Fremdfinanzierung, damit unsere Kunden und Lieferanten nicht zu Abdeckung operativer Risiken zur Verfügung stehen.]	[Mit unserer Verschuldung stellen wir einen effizienten Umgang mit Unternehmensressourcen sicher, weil dadurch ein Teil der zukünftigen Cashflows für Zinszahlungen reserviert ist.]	[Bei der Fremdkapitalaufnahme spielen unsere Vermögenswerte, die als Sicherheiten dienen können, eine wichtige Rolle.]	[Wir verzögern eine Fremdkapitalaufnahme aufgrund der damit verbundenen Transaktionskosten und Gebühren.]	[Eine Fremdkapitalaufnahme gibt den Investoren bessere Hinweise auf die Perspektiven des Unternehmens als die Ausgabe neuer Aktien.]	[Wir streben die Einhaltung einer Ziel-Kapitalstruktur an.]	[Wir nehmen Eigenkapital auf, wenn wir nicht über interne Finanzierungsquellen verfügen.]	[Wir nehmen Eigenkapital auf, wenn keine externen Fremdfinanzierungsmöglichkeiten zur Verfügung stehen (insb. interne und hybride Wertpapiere).]	[Wir haben bedenken, dass die Ankündigung einer Kapitalerhöhung eine negative Kursreaktion hervorrufen kann.]	[Wir orientieren uns daran, ob eine Unter- bzw. Überbewertung unserer Aktie am Markt vorliegt.]	[Wir begeben neue Aktien, wenn der Kurs unserer Aktie stark angestiegen ist.]
11.07.2013 11:53:02	Maschinenbau und Anlagenbau	Mittleres Unternehmen (MA: ≤250 // Umsatz: ≤50)	Flexibler/dynamischer Zielverschuldungsgrad	Nein	3	2	1	1	1	Nicht anwendbar	1	1	1	1	2	2	1	2	0	Nicht anwendbar	0	0	1	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
12.07.2013 17:22:07	Medien (Print, Film, Funk, TV), Software	Großes Unternehmen (MA: >250 // Umsatz: >50)	Grober Zielverschuldungsgrad	Ja	2	1	1	2	1	1	2	1	0	0	1	0	0	1	0	0	2	1	2	1	1	1
15.07.2013 12:26:07	Internet, Multimedia	Großes Unternehmen (MA: >250 // Umsatz: >50)	Grober Zielverschuldungsgrad	Ja	1	2	1	1	2	2	1	2	0	1	1	1	1	1	0	1	2	1	2	3	2	1
17.07.2013 10:52:39	Internet, Multimedia	Großes Unternehmen (MA: >250 // Umsatz: >50)	Fixer Zielverschuldungsgrad	Nein	2	1	1	2	0	Nicht anwendbar	1	1	0	1	0	0	0	0	1	Nicht anwendbar	3	2	2	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
24.07.2013 08:46:13	Baugewerbe, Handwerk, Fertigung	Kleines Unternehmen (MA: ≤50 // Umsatz: ≤10)	Kein Zielverschuldungsgrad	Nein	2	2	0	1	1	Nicht anwendbar	2	0	0	0	1	0	0	2	2	Nicht anwendbar	1	3	3	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
25.07.2013 13:37:06	Energiewirtschaft, Rohstoffe	Großes Unternehmen (MA: >250 // Umsatz: >50)	Grober Zielverschuldungsgrad	Nein	2	3	2	1	1	Nicht anwendbar	2	0	1	2	0	0	1	3	0	Nicht anwendbar	2	2	3	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
25.07.2013 15:13:12	Automobilindustrie, Maschinenbau und Anlagenbau	Mittleres Unternehmen (MA: ≤250 // Umsatz: ≤50)	Grober Zielverschuldungsgrad	Nein	3	2	2	1	2	Nicht anwendbar	3	1	1	1	2	2	0	2	0	Nicht anwendbar	2	1	2	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
26.07.2013 12:19:03	Internet, Multimedia	Kleines Unternehmen (MA: ≤50 // Umsatz: ≤10)	Kein Zielverschuldungsgrad	Nein	1	1	1	2	0	Nicht anwendbar	2	0	0	0	1	0	0	0	0	Nicht anwendbar	1	2	2	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
29.07.2013 17:49:34	Banken, Finanzen, Unternehmensberatung	Kleines Unternehmen (MA: ≤50 // Umsatz: ≤10)	Flexibler/dynamischer Zielverschuldungsgrad	Nein	0	1	2	2	2	Nicht anwendbar	2	0	0	2	0	0	0	0	2	Nicht anwendbar	1	1	1	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar
30.07.2013 12:53:24	Immobilien	Großes Unternehmen (MA: >250 // Umsatz: >50)	Grober Zielverschuldungsgrad	Ja	2	2	1	2	3	1	2	2	1	2	3	2	2	3	2	1	3	2	2	3	1	0
30.07.2013 18:57:08	Maschinenbau und Anlagenbau	Mittleres Unternehmen (MA: ≤250 // Umsatz: ≤50)	Kein Zielverschuldungsgrad	Nein	0	0	0	1	1	Nicht anwendbar	1	0	0	0	3	2	0	0	0	Nicht anwendbar	1	2	1	Nicht anwendbar	Nicht anwendbar	Nicht anwendbar

XII

Appendix-Exhibit 3: Cover letter for capital structure survey

Empirische Studie zum Thema Kapitalstruktur und optimaler Verschuldungsgrad

Sehr geehrte Damen und Herren,

mein Name ist Bennet Frentzel. Ich bin Student an der Hochschule für Wirtschaft und Recht in Berlin und bearbeite zurzeit meine Bachelorarbeit zum Thema:

„Capital Structure Theory since Modigliani-Miller – Development in the search for the optimal leverage of the firm"

In diesem Rahmen führe ich eine empirische Studie zum Thema Kapitalstruktur und optimaler Verschuldungsgrad durch. Mit Hilfe eines kurzen Online-Fragebogens möchte ich die praktische Relevanz der theoretischen Erkenntnisse der Literatur testen und die wichtigsten Einflussfaktoren auf die Kapitalstruktur und den Verschuldungsgrad von deutschen Unternehmen untersuchen.

Link zum Online-Fragebogen:
https://docs.google.com/forms/d/1UwROKTxv4AymXBK0w94xoQEY7o4lpTa0VHvmqMpwrH0/viewform

Sie und Ihr Unternehmen bleiben in dieser Umfrage als Befragte komplett anonym. Weiterhin versichere ich, dass die gesammelten Informationen ausschließlich für akademische Zwecke verwendet werden.

Bei Fragen stehe ich Ihnen gerne zur Verfügung:

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E-Mail: bennet.frentzel@gmail.com
Mobil: 0163 6937809

Mit freundlichen Grüßen

Bennet Frentzel

Eidesstattliche Erklärung zur Bachelorarbeit

Hiermit erkläre ich an Eides Statt, dass ich die vorliegende Abschlussarbeit selbstständig und ohne fremde Hilfe verfasst und andere als die angegebenen Quellen und Hilfsmittel nicht benutzt habe. Die den benutzten Quellen wörtlich oder inhaltlich entnommenen Stellen (direkte oder indirekte Zitate) habe ich unter Benennung des Autors/der Autorin und der Fundstelle als solche kenntlich gemacht. Sollte ich die Arbeit anderweitig zu Prüfungszwecken eingereicht haben, sei es vollständig oder in Teilen, habe ich die Prüfer/innen und den Prüfungsausschuss hierüber informiert.

Berlin, den_____   Unterschrift: _____