Charles University in Prague

Faculty of Social Science

Institute of Economic Studies

Bachelor Thesis

2008 Martin Mendroš

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The Impact of Thin Capitalization Rules on Capital Structure of Firms in the Czech Republic

Author: ***Martin Mendroš***

Supervisor: ***Mgr. Magda Pečená Ph.D.***

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Prohlášení:

Prohlašuji, že jsem bakalářskou práci vypracoval samostatně a použil pouze uvedené prameny a literaturu.

Declaration:

I do hereby declare that I drew up the bachelor thesis independently and used only the listed sources and literature.

V Praze dne: 30.6.2008 ……..

Martin Mendroš

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Abstract

The reform of the public budget policy with effect from January 1, 2008 have brought a lot of significant changes into the tax legislation of the Czech Republic. This thesis analyzes the impact of the amendment to the Income Taxes Code, namely thin capitalization rules, on capital structure of sectors with high leverage or riskier nature of business. A dataset of major leasing and factoring firms operating in the Czech Republic and representing one of the affected sectors is used to illustrate the impact. The results indicate that thin capitalization rules disrupt legitimate expectations of agents, change the business environment and influence financing and investment decisions of corporate executives. In order to support equity financing of the firms, legislators should aim at reducing regulatory burden connected with raising external capital instead of imposing additional restrictions on debt.

Abstrakt

Reforma verejných financií s platnosťou od 1. januára 2008 priniesla množstvo významných zmien do daňovej legislatívy Českej republiky. Cieľom tejto práce je analyzovať dopad daňovej reformy, predovšetkým zmien pravidiel nízkej kapitalizácie, na kapitálovú štruktúru sektorov s vysokou zadĺženosťou, poprípade rizikovejším charakterom podnikania. Súbor hlavných leasingových a faktoringových spoločností podnikajúcich na českom trhu a predstavujúcich jeden z týchto sektorov nám poslúži na ilustráciu dopadov prísnejších pravidiel nízkej kapitalizácie. Závery tejto práce ukazujú, že pravidlá nízkej kapitalizácie narúšajú princípy legitímnych očakávaní ekonomických subjektov, menia podnikateľské prostredie a v neposlednom rade ovplyvňujú investičné rozhodnutia a rozhodnutia o spôsobe financovania podniku. Pri snahe podporiť podnikanie s väčším využitím vlastného kapitálu by sa zákonodarcovia mali zamerať na odstraňovanie bariér, ktoré tomuto procesu bránia, namiesto závadzania dodatočných reštrikcií na financovanie prostredníctvom dlhu.

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List of abbreviations

M&M:	Modigliani and Miller	*PSE:*	Prague Stock Exchange
WACC:	Weighted cost of capital	*YTD:*	Year-to-date
TRA:	The Tax Reform Act of 1986	*EBIT:*	Earnings before interest and taxes
CFO:	Chief Financial Officer	*MFCR*:	Ministry of Finance of the Czech Republic
Visegrad countries:	Poland, Hungary, Slovakia and Czech Republic	*WHT:*	Withholding tax
		CEE:	Central and Eastern European Countries
IPO:	Initial public offering		

Introduction

„ The hardest thing in the world to understand is the income tax.

Albert Einstein (1879-1955)

The reform of the public budget policy with effect from January 1st has brought a lot of significant changes into the tax legislation of the Czech Republic. Current discussions deal only with the most evident aspects of the reform such as changes in ecological taxes, corporate and personal income taxes, whereas other (especially more technical) parts are left without so much attention. The amendment to the Czech Income Taxes Code, specifically the part seriously limiting the allowance of a firm to deduct its interest payments from taxable income, is one of these aspects and would deserve more attention by experts. The stricter limitations for the tax-deductibility of financial costs (also called thin capitalization rules) might, in fact, lead to the restriction of the use of credit in the Czech economy and subsequently, together with unfavourable institutional environment and underdeveloped capital markets, to the real difficulties of certain sectors to obtain sufficient funds for their business activities.

From the tax perspective, it is often very attractive for corporations to finance their activities and projects via debt instead of equity instruments because interest costs are considered to be tax-deductible in most of economies. Especially strong multinational corporations have found ways how to take advantage of debt financing and reduce their effective tax rates to the minimum. Intercompany loans or other debt financing within the group of related companies can be considered as one of the most prominent ways to increase the after-tax income. Since national companies do not have so many opportunities for such a tax planning and in order to protect tax revenues, the legislators of many countries have responded by implementing thin capitalization rules. A general definition of these rules is that interest costs cannot be deducted from the tax base if the debt/equity ratio of a related company exceeds certain threshold.

Thin capitalization rules have certain rationalization in the case of related companies and are widespread among the European countries. However, the amendment to the Income Taxes Code in the Czech Republic imposes unique limitations also for unrelated-party loans and on the level of interest rate. Furthermore, it tightens the limitations on related-party loans, which are now one of the strictest across the EU and CEE countries.

This thesis investigates the impact of thin capitalization rules on capital structure choice of firms in the Czech Republic. The comparison between the effective tax rate before and after the amendment to the Income Taxes Code will serve as a basis for our analysis, which is organized as follows:

Chapter 1 provides an overview of the modern theory of capital structure established by Modigliani and Miller (1958) with a special emphasis on the tax issues due to the purpose of this thesis. Other theories such as pecking order theory, agency costs, market timing, signalling theories, etc. are introduced as well. The most recent findings of the research in corporate finance, namely dynamic models of capital structure are surveyed at the end of the chapter.

Chapter 2 is devoted to the empirical evidence of capital structure. Firstly, determinants of capital structure in general are presented. Secondly, evaluation of tax benefits of debt financing is provided. Managerial implications and suggestions are summarized in the last section of Chapter 2.

The analysis of Czech institutional, legal and other aspects influencing financing and investment decisions can be found in Chapter 3, in which we begin by the discussion of drawbacks connected with raising equity capital in the Czech Republic. In the following section, the same approach is applied on issues corporate executives must face when raising debt funds. At the end of the chapter, there is a summary of key implications the management of any company operating on the Czech market should keep in mind.

The role of the first four chapters as described above is to help us fully understand issues concerning capital structure policy so that we can proceed to Chapter 4, which deals with the impact of thin capitalization rules on the financing and investment decisions of certain sectors in the Czech Republic. The chapter starts with depicting major changes in the legislation, continues by comparing the legislation with other EU and CEE countries, after that it explains the calculation methodology of thin capitalization rules and provides a selection of sectors expected to be affected most by these rules. Real estate developers,

leasing and factoring companies, medium innovative firms, foreign companies with affiliates operating in the Czech Republic, highly levered firms and public-private partnerships (PPP). These are the sectors that will suffer most from the stricter rules. In most cases only because of the nature of their business - high leverage or interest rates with higher risk premium required by banks. In the last part of Chapter 4, major leasing and factoring firms are selected from the Creditinfo database in order to illustrate the impact of thin capitalization rules on the effective tax rate of highly indebted companies. Since the impact is considerable, we might expect a change in the capital structure policy of these firms and corresponding costs associated with such an artificial shift.

A summary of all our findings and conclusions can be found in the last part of the thesis.

1 Theoretical Background

"If you take money out of your left pocket and put it in your right pocket, you're no richer."

Merton Miller (1923-2000)

Academics interested in topics of corporate finance have been studying the "capital structure puzzle", as stated by Myers (1984), for more than a century. Not only have they failed to provide a framework for the best use of debt-equity mix but have not even managed to come up with the definitive answer for the question whether the optimal capital structure exists or not. There are several theories trying to help financial managers decide on financing issues.

One of the first modern theories of capital structure is the famous "invariance" principle published by Merton Miller and Franco Modigliani (M&M) in their original 1958 paper. They conclude that based on certain conditions, the firm's capital structure policy is irrelevant.

The problem arises when the assumptions symplifying reality are questioned. Recent theories are based on easing these assumptions, while at the same time, striving for equally powerful propositions. In this theoretical background, the most important theories of capital structure are reviewed. Firstly, the M&M propositions are discussed into more details. Afterwards, the traditionalists, who responded to the M&M propositions, are introduced. They are followed by recent theories of corporate financial policy according to Barclay and Smith (2005), which can be grouped into three broad categories (a special emphasis is put on the tax issues due to the purpose of this thesis):

1. Taxes
2. Contracting costs
3. Information costs

Finally, the most recent findings of the research on the relevant topic and other theories are surveyed.

1.1 Modigliani and Miller Propositions

The famous M&M theory has remained strong even 50 years after it had been published. The M&M "invariance" principle consists of three propositions that are considered to be the beginning of the modern history of finance and have been crucial in understanding determinants of capital structure policy since then. According to M&M hypothesis, the financial managers need not worry about the right hand side of the balance sheet because only the left hand side matters when maximizing the value of the firm. One of the reasons for the consistency of the M&M theory is that the propositions follow logically from the assumptions and therefore, cannot be rejected. The assumptions are as follows:

- investors and firms can trade the same set of securities,
- market prices of securities are derived from the present values of their future cash flows,
- there are no taxes and transaction costs associated with security trading
- financing decisions of the firm do not affect the cash flow generated by investment decisions.

Though the author believes that the reader sufficiently familiar with the financial problematics has heard about the M&M propositions, let us recapitulate their basic meaning as stated by Miller (1998, p. 113).

- Proposition I:
    - The total value of all securities of a firm depends only on the earning power and risk of its operating assets and not at all on the debt/equity composition of the liabilities. It is the key proposition for all the others. The share price, which measures the value of the firm, does not change with an increase in leverage. The reason is that the increase in leverage and subsequently, in expected stream of earnings, is exactly offset by higher discount rate associated with higher risk. In other words, the value of a levered and unlevered firm is the same. Otherwise, the capital

markets would be out of the equilibrium and arbitrage opportunities would arise.

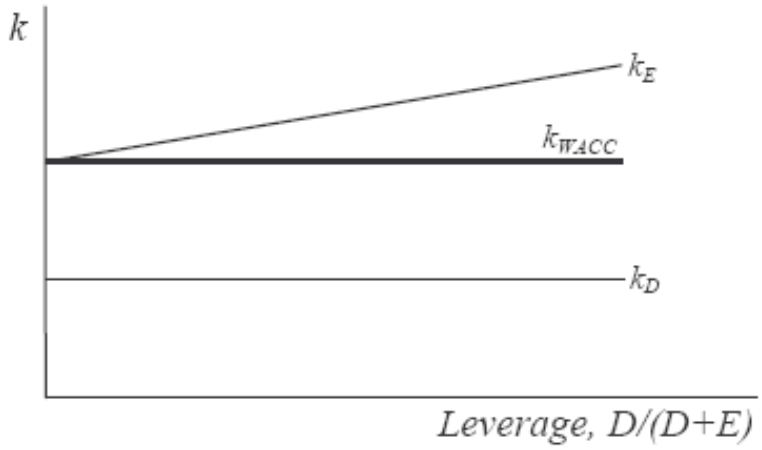
- Proposition II:

  - If Proposition I holds, Proposition II can be restated into Brealey and Myers (2000) form:

$$k_E = k_{WACC} + \frac{D}{E}(k_{WACC} - k_D)\,, \qquad (1.1)$$

where k_E is the cost of equity, k_{WACC} is the weighted average cost of capital (WACC) and k_D is the cost of debt. The situation is illustrated by Figure 1.1.

Figure 1.1.
M&M Theory of Capital Structure – Proposition II

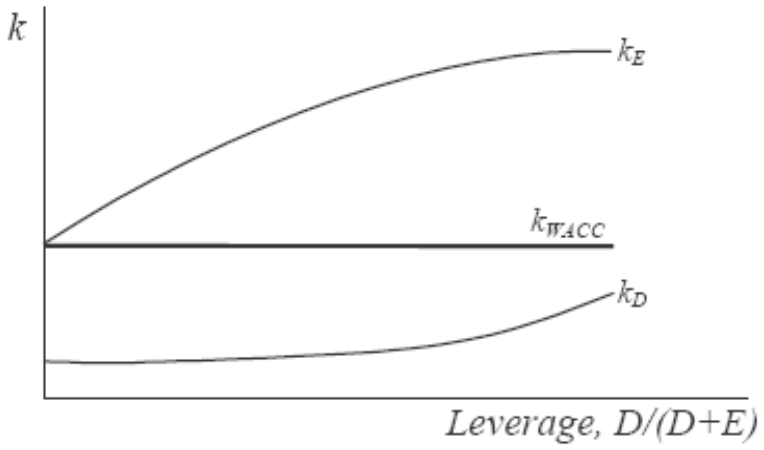


Source: Brealey and Myers (2000)

  - However, the previous situation is valid only if the debt levels are sufficiently low and risk is considered to be constant. Therefore, Modigliani and Miller (1958, p. 272) extended their Proposition II and added the possibility for the existence of a multiplicity of bonds and interest rates into the model. The results of this extension can be seen in

the Figure 1.2. As the firm exceeds a certain level of indebtedness considered to be risk-constant, the probability of default increases rapidly and the debtholders will require higher return. The cost of equity will not increase as sharply as it should according to the original Proposition II due to the transfer of business risk from shareholders to debtholders. Thus, WACC will remain constant again.

Figure 1.2.
M&M Theory of Capital Structure – Proposition II (extended version)



Source: Brealey and Myers (2000)

- Proposition III:

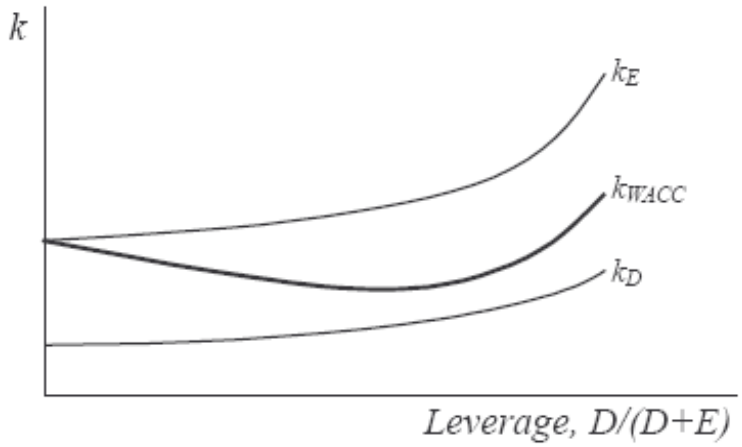
    - The cost of capital is a property of the project and its risk, not of the particular securities used to finance it.

1.2 Traditional theory

Traditionalists formed an opposition to the M&M theory. Their approach is not in accord with the constant WACC view of the Proposition II. It assumes that the required rate of return on equity does not rise as fast as M&M propose when the level of indebtedness is low (the risk of default is considered to be low) but, on the other hand, it rises faster when leverage is relatively high. The behavior of the required rate of return on

debt is the same as proposed by M&M. Figure 1.3 clearly shows that such a case implies the existence of a critical point where the WACC is minimized. Thus, the optimal capital structure exists and the value of the firm is maximized provided that investment decisions are independent of financing decisions, in other words, if original Proposition I holds. (Brealey and Myers, 2000)

Figure 1.3.
Traditional Theory of Capital Structure



Source: Brealey and Myers (2000)

1.3 Taxes

Out of the assumptions that laid foundations for M&M propositions, the one assuming no taxes was challenged at first. Interestingly, it was challenged by M&M themselves. After being unsuccessful in 1958, Modigliani and Miller (1963) managed to introduce more realistic model that allowed the existence of corporate income tax. When easing the "no taxes" assumption, a company's capital structure is not irrelevant for its total value anymore. As Barclay and Smith (2005) sum up, because the basic corporate income tax allows companies to deduct interest payments but not dividends in their calculation of taxable income, adding debt to a firm's capital structure lowers its expected tax liability and thereby increases its after-tax cash flow. Thus, if there were no other taxes on corporate income or returns from corporate securities, the value of a debt-financed company would equal to (using the denotation of Ross et al., 1996):

$$V_L = V_U + T_C B \quad (1.2)$$

In other words, the value of the levered firm (V_L) equals to the value of the unlevered firm (V_U) plus the present value of the tax shield (T_C denoting the corporate tax rate, B the value of debt, where the debt is assumed to be the consol bond paying only interests but never repaying the principal).

However, the formula (1.2) implies that the maximum value of the levered firm is achieved when the firm is financed entirely by debt. Since this is not a case in reality, Myers (2000) identified following issues connected with debt financing, especially for extreme debt/equity ratios:

- Debt does not tend to be perpetual and without principal being repayed.
- Future profits are not guaranteed; the higher the probability of having enough taxable income to shield, the higher the present value of tax shields.
- The expected value of the tax shield depends on the ability of the firm to service its debts, which decreases as the firm becomes indebted more and more, and on the firm's marginal tax rate.
- The existence of financial distress or bankruptcy costs (direct and indirect)[1].

These are disadvantages of debt financing. Examining whether the present value of the tax shield outweighs bankruptcy costs and up to which point was the basis for the origination of trade-off theories.

Before the trade-off theories are introduced, the author would like to highlight another shortcoming of the formula (1.2) firstly noticed by Miller (1977), whose analysis shows that by considering only corporate income taxes and not taking personal income taxes into account it can happen that the tax advantages of debt financing will be overstated. Many investors who receive interest income must pay taxes on that income. On the other hand, equity income in the form of dividends and capital gains is usually taxed at the lower rate. In addition, paying any tax on capital gains can be postponed or deferred by

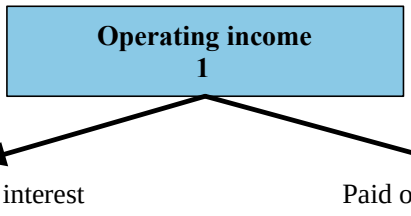
[1]Another violation of M&M assumptions.

just not realizing the gains. Thus, tax advantages are offset by compensation required by investors for increased personal taxes in the form of higher yields on corporate debt compared to, for example, risky tax-exempt municipal bonds. But the tax advantages are not likely to be zero and as Barclay and Smith (2005, p. 9) states: "[...] consistently profitable company that volunteers to pay more taxes by having substantial unused debt capacity is likely to be leaving value on the table."

The situation is illustrated by Figure 1.4. One unit of operating income distributed to investors as debt interest gives them after tax income of $1-T_B$, where T_B is the personal tax rate on ordinary income, such as interest. On the other hand, after tax income for equity investors (either dividends or capital gains) equals to: $(1-T_S).(1-T_C)$, where T_S is the personal tax rate on equity distributions.

Figure 1.4.

Taxes paid on interest vs. equity income



	Paid out as interest	Paid out as equity
Corporate tax	*None*	T_C
Income after corporate tax	1	$1-T_C$
Personal tax	T_B	$T_S.(1-T_C)$
Income after all taxes	$1-T_B$	$1-T_C-T_S.(1-T_C)=(1-T_S).(1-T_C)$

Source: Brealey and Myers (2000).

Since Miller (1977) believed that the main objective of managers is to maximize the after tax income of investors and that the personal tax rate on debt income is usually higher than the tax rate on equity income, the fact partially offsetting the tax deductibility of interest at the corporate level, he slightly modified the denotation (1.2) into the form:

$$V_L = V_U + [1 - \frac{(1-T_C).(1-T_S)}{(1-T_B)}].B \,. \qquad (1.3)$$

Finally, we should note that there are special so called “non-debt” tax shields, with depreciation being the most important one of them, that further reduce the tax advantage of debt financing. The support for this argument can be found, for example, in Harris and Raviv (1991) or Fama and French (2002).

1.4 Contracting Costs

We have already mentioned before that leverage carries some risk with it, as well and according to Barclay and Smith (2005), the more indebted a company is, the greater the probability and expected costs of financial distress there are for it. We distinguish direct and indirect costs of financial distress.

- Direct costs:
  - Bankruptcy is a legal procedure and legal procedures are usually expensive. Among the most common costs belong: administrative and reorganization cost, court, lawyers and financial advisory fees, etc.

- Indirect costs:
  - There are significant indirect costs of financial distress. The most important of them are listed below:
    - Suppliers and customers are afraid to start doing business with a firm facing bankruptcy. Current suppliers require cash payments for their goods.
    - It is very difficult for distressed companies to get additional financing on reasonable terms without a significant risk surcharge.
    - Employee retention rate is usually decreasing.
    - Bankruptcy trustee might be incapable of or not motivated to maximize the value of the firm.

- Managers of distressed firms tend to forgo the capital and investment opportunities due to contracting conflicts among the firm's stakeholders. Myers (1977) referred to this as "the underinvestment problem". Managers of such a firm are not motivated to accept even a positive net present value project because most or all of the value created would go to restoring the creditors' position anyway.

1.4.1 **Trade-off Theory**

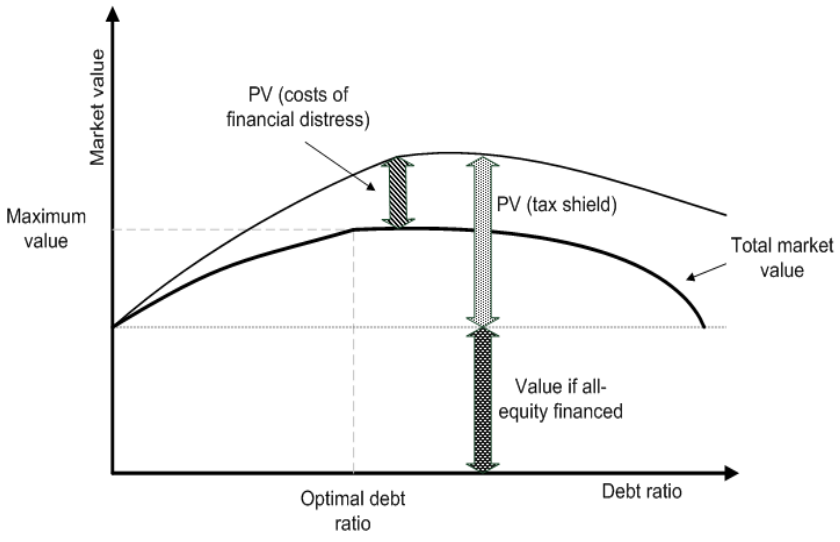
Supporters of this theory believe that the optimal capital structure exists. Since there are both advantages and disadvantages of debt financing, the expression (1.4) can be modified to:

$$V_L = V_U + PV(tax\_shield) - PV(bankruptcy\_costs) \qquad (1.4)$$

However, it implies that there must be a critical point in which the maximum of the value of the levered firm is reached. As Figure 1.5 indicates, the optimum is reached when the marginal savings are equal to marginal costs of distress from additional borrowing.

Figure 1.5.

The optimal capital structure according to the trade-off theory



Source: Brealey and Myers (2000).

1.4.2 Agency Theory

Empirical evidence shows that not all firms that have financial difficulties are condemn to doom. If the firm is able to find enough cash resources to meet its financial obligations such as interest costs, it can continue operating and after a successful reorganization it might even become profitable again and avoid bankruptcy completely. However, reorganization or restructuring is not an easy procedure. If the firm faces financial difficulties, interests of various stakeholders might be in conflict. The conflicting interest of principals (shareholders) and their agents (managers) laid foundations for the agency theory formulated by Jensen and Meckling (1976).

One of the instruments that can help solve the issue of agency costs is the optimal capital structure choice. Jensen (1986) emphasizes the punishing function of debt financing, which forces managers to pay out future cash flows in the form of interest payments rather than wasting them for organizational inefficiencies.

1.5 Information Costs

The difference between the information about the value of a company that corporate executives have and what outside investors know has formed theories trying to identify and possibly also quantify this difference. Market timing, signaling and pecking order theories will be analyzed in the following paragraphs.

1.5.1 Market Timing Theory

The simple idea behind this theory can be summarized by following words: managers should issue equity when market conditions are good and issue debt or no capital otherwise. Myers and Majluf (1984) were among first to explore the effects of imperfect information of various agents on the capital-structure choice. If management feels their companies are overvalued because they have information not available to outside investors, they would issue equity in order to make use of it. On the other hand, if favorable prospects about the future of the company are not yet reflected in market prices, managers would rather wait or issue debt. One of the implications is however that managers may be

tempted to raise capital either in the form of equity or debt even if there is no immediate need for it.

1.5.2 Signaling Theory

Introduced by Ross (1977), the theory assumes again that managers have better information than investors. The main difference between the signaling and market timing theories is that the latter explains attempts for raising "cheap" capital, while the former argues that managers believing in good future of their companies will try to "signal" these beliefs to the market. They can do so by increasing leverage because, as we mentioned before, more debt imposes limits over behaviour of the managers. Since it is more probable that a firm goes bankrupt if it is bad managed, corporate executives of such firms will not imitate higher quality firms by issuing more debt because it might happen that they will be penalized if something goes wrong. Therefore, higher indebtedness is a good signal for the market according to this theory.

1.5.3 Pecking Order Theory

An alternative approach presenting information-cost argument in a different way was formulated by Myers and Majluf (1984) and Myers (1984). According to this theory, companies follow so called "pecking order". Since the discount required by investors for new equity issues is relatively high, managers prefer internally generated funds (retained earnings) and "free cash flow" to external financing. If external financing is necessary, they prefer debt to equity because of the lower transaction and information costs associated with debt issues. Only when none of these two sources of financing (internal funds and debt) is enough for available profitable projects, they start considering other sources, junior securities (such as high-yield debt or convertible stock or warrants) at first and common equity and derivates at last.

The pecking order theory predictions as such are in contrast with those presented by trade-off or agency costs theory. Companies with unfavorable future prospects and large free cash flow are advised to have low debt/equity ratios, while high-growth companies should issue more debt due to insufficient internal sources and equity being too costly.

1.6 Other Capital Structure Theories

Having presented the most important theories of capital structure, we now review other relevant theories and recent findings regarding this topic. Many theories have addressed a certain specific aspect of the puzzle but none of them can be understood as a stand-alone model for the choice of optimal leverage.

Downs (1993) presents interesting findings showing that firms with relatively high non-debt tax shields, depreciation tax shields being the most important one of them, also tend to have high leverage ratios. This is in contrast with most of the previous studies detecting a trade-off between non-debt and debt tax shields. Downs argues that high depreciation is connected with substantial assets that can be used as collateral for more debt.

Leland (1998) develops quantitative guidance on the amount and maturity of debt, on financial restructuring and on the firm's optimal risk strategy. He argues that hedging allows managers to issue more debt. Another key conclusion concerns agency costs, which are, according to him, relatively small for the range of environments considered.

Gilson (1997) examines financially distressed firms and their ability to reduce leverage after the bankruptcy reorganization. His study is based on dynamic capital structure theories that will be introduced in Section 1.6.1. Transaction costs are one of the most important factors preventing firms to quickly adjust their leverage ratios to the target. Since financially distressed firms have their leverage ratios far away from the optimum, Gilson believes that also adjustment costs must be large. He evaluates the impact of these costs on the level of indebtedness and concludes that they are significantly smaller when firms recontract in Chapter 11[2], rather than when there is an out of court settlement.

While most of the research concerning capital structure decisions is focused on the corporate form of business enterprises, little is known about the alternative business forms. Allen (1995) tries to partially fill the gap by studying capital structure determinants in real estate limited partnerships. These firms are of particular interest of this thesis because of

[2] Part of the US Insolvency Code which allows distressed firms to be protected from their creditors under certain conditions and for a specific time.

their tendency to be highly leveraged. As we will see later, thin capitalization rules punish companies with high debt/equity ratio. The empirical results of Allen's study indicate that growth firms tend to be less indebted, which is consistent with Myers' (1977) underinvestment problem. High leverage of real estate partnerships can be also explained by more collateral available to be pledged and similarly, higher non-debt tax shields stemming from depreciation. Both of these findings are also in accord with other already introduced capital structure theories.

1.6.1 Dynamic Capital Structure Theory

One of the most widely used and accepted theories that also have managerial implications is "dynamic capital structure theory". It was developed in response to the limitations of static capital structure theories, which ignores transaction costs and is unable to model constantly changing environment the managers face day to day. As Myers (1984, p. 587) points out:

> "If adjustment costs are large, so that some firms take extended excursions away from their targets, then we ought to give less attention to refining our static tradeoff stories and relatively more to understanding what the adjustment costs are, why they are so important and how rational managers would respond to them."

Fischer, Heinkel and Zechner (1989) were among the first pioneers to introduce transactions costs and model capital structure choice in a continuous-time framework.

The most recent studies (for example Leary and Roberts, 2005) find that firms dynamically rebalance their leverage to stay within an optimal range, rather than specific target. In addition, their evidence suggests that the adjustment towards the optimal range after a shock on leverage is very slow and costly resulting in persistent deviations from the range or even a review of the range. Hovakimian, Opler and Titman's (2001) results indicate that highly leveraged firms may lower their investment expenditures when their stock prices are low. Obviously, these results violate the M&M assumption about separable corporate financing and investment decisions. However, as we said at the beginning of this chapter, the dynamic capital structure theory is very popular because it does not ignore transaction costs and is backed by empirical evidence.

2 Empirical Evidence of Capital Structure

"Everyone recognizes that's a joke because obviously the number and shape of the pieces doesn't affect the size of the pizza. And similarly, the stocks, bonds, warrants, etc., issued don't affect the aggregate value of the firm."

Merton Miller (1923-2000)

The progress that has been done on the issue of the optimal capital structure choice is significant. However, the empirical relevance of the different theories is questionable because there are so many factors influencing the optimal choice that no theory is able to explain such a variety in observed capital structures alone. Most of the research is based on data from developed countries, especially the USA and G7 countries due to the lack of reliable data from developing world. Among the most profound studies based on large amount of data through the long period belong those of Harris and Raviv (1991), Fama and French (2002), Rajan and Zingales (1995). From my point of view, these studies provide results on an aggregate level only and thus, cannot help managers decide on specific steps they need to undertake when designing the optimal capital structure policy.

In the following chapters, we will first look at the determinants of capital structure in general and afterwards, due to the purpose of this thesis, the tax benefits will be presented in more details supported by some empirical evidence.

2.1 Determinants of Capital Structure

A large number of potential determinants of capital structure have been identified. Just to mention a few, leverage is influenced by: tax rates, bankruptcy costs, size, profitability, tangibility, growth opportunities, non-debt tax shields, volatility of earnings, industry classification, country of origin, the level of capital market development, managerial investment autonomy and many others. The problem is we are not sure which of the above are the most important and how to measure them. What we do know is that

the importance of determinants varies as the environment changes. Harris and Raviv (1991, p. 334) are a little bit more optimistic in their research and claim that:

"[...] 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."

2.2 How Big Are the Tax Benefits of Debt?

Since the main purpose of the thesis is to examine the impact of the tax reform in the Czech Republic, we should look at the empirical research regarding the tax advantage of debt financing. Because of the tax deductibility of interest, one should much more debt in firms' balance sheets. However, it is not the case. Is it because other determinants are more important or because tax considerations do not play a major role when deciding about the optimal leverage? Or managers are too conservative with their financing decisions? Opinions vary widely on this issue.

Studies concluding that the tax advantages are unlikely to play a major role in explaining observed leverage ratios argue that corporations can exploit differences in international tax regimes, non-debt tax shields can be used as a substitute for debt tax shields, personal income taxes reduce these benefits and profitability of companies is not guaranteed. They also try to explain why so many firms with too little debt are observed in practice. Their explanation is that exceeding the optimal debt ratio is more costly than falling below that ratio.[3]

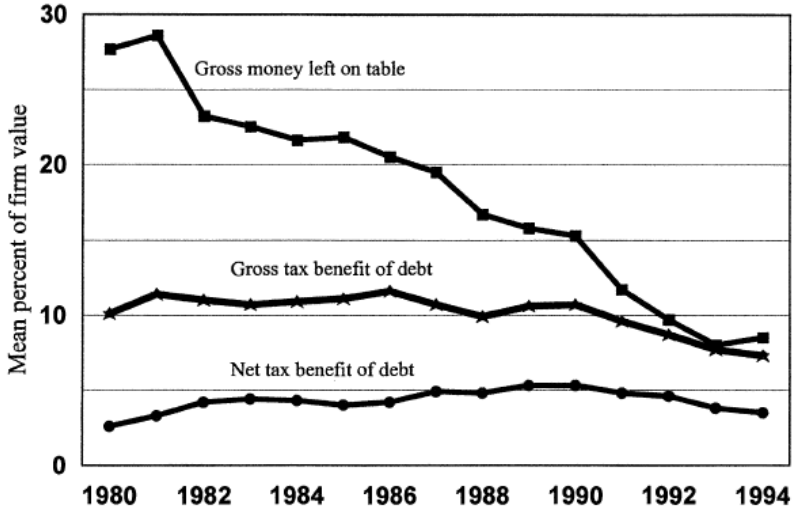
Graham (2000) finds that tax savings of interest deductions in the USA represent about 10 percent of firm's value or about five percent when personal tax penalty is taken into consideration. These savings could be doubled if firms were to issue more debt up to the point where their interest-deduction functions first become downward sloping as we can see on Figure 2.1. Unwillingness of the firms to go that far, either because they use

[3] See Kane, Marcus and McDonald (1984) for reference.

debt too conservatively or costs of additional leverage are too high, can be the reason why some firms appear to be underlevered.

Figure 2.1.

The Tax Benefits of Debt – The line marked with stars shows the gross tax benefits of debt (expressed as a percentage of firm value). The line marked with circles shows a lower bound estimate of the net (of the personal tax penalty) tax benefit of debt. The line marked with squares shows the additional tax benefit that could be obtained if firms levered up to the point where their interest-deduction functions first become downward sloping. Consequences of being underlevered are notable but have been declining.



Source: Graham (2000)

Since we would like to find out whether public finance reform in the Czech Republic can have an impact on financing decisions of firms, it would be worthwhile to look at a study examining the firm's response to a tax reform changing similar parameters. Due to unavailability of such a study in the Czech Republic, the author will try to survey two studies examining the impact of Tax Reform Act of 1986 on the leverage decisions in the USA

The Tax Reform Act of 1986 (TRA) changed some of the main parameters of the tax regime in the USA. The new tax code abolished some of the non-debt tax shields, which made debt tax shields more attractive. On the other hand, the TRA lowered the corporate tax rate, thus reducing the value of tax shields to firms. At the investor level, the

TRA reduced the preferential treatment of capital gains and cut personal tax rates, decreasing the relative attractiveness of equity over debt. (Givoly, Ofer and Sarig, 1992)

Hypothesis 1 and Hypothesis 2 tested and confirmed by Givoly, Ofer and Sarig (1992) are of particular interest for our analysis.

Hypothesis 1:

Firms with a high marginal effective corporate tax rate[4] will decrease their leverage more than firms with a low marginal effective corporate tax rate in response to the decrease in the statutory corporate tax rate.

Hypothesis 2:

Firms that lose a greater amount of non-debt tax shields will increase their leverage more than firms that lose a smaller amount of theese tax shields in response to the reduction in the available non-debt tax shields.

Their findings indicate that corporate taxes, non-debt tax shields and also personal taxes play a significant role in the capital structure decisions.

Opposite findings were presented by Casey, Anderson, Mesak and Dickens (1999) in their study with a special focus on the impact of TRA on corporate dividend policy (which is closely related to the capital structure policy). Their main conclusion is that there was no widespread reaction to the TRA on the aggregate level of dividends. The question is, as we have already mentioned, whether the results in aggregation are of any use for the application in practice.

Buettner, Overesch, Schreiber and Wamser (2008) along with Maßbaum and Sureth (2008) study the impacts of thin capitalization rules on financing and investment decisions of corporations. Their results indicate that thin capitalization rules are effective in preventing intercompany tax planning. However, investment is found to be adversely affected, as well.

[4] The marginal effective tax rate can be defined as the present value of future tax payments arising from an additional unit of taxable income per year.

Although most of the studies presented here vary widely in their conclusions whether tax advantages of debt financing play a significant role in corporate decisions or not, researchers are surprisingly in conformity when discussing the limitations of the contributions of their findings. All of them agree that investigating how tax incentives affect capital structure policies and the firm value is very problematic. One of the biggest problems are: the difficulty of calculating corporate tax rates due to unavailable data[5]; complexity of the tax code; quantification of the effects of taxation at the personal level and understanding insolvency procedures and legal implications of financial distress.

2.3 Capital Structure Strategies and Managerial Implications

Practitioners are interested more in the implications of theories than theoretical background as such. They are the ones that choose a capital structure and dividend policies so they need to know how these policies should be developed, which financial instruments to use when implementing them, how to communicate them to the markets and rating agencies and how to adapt quickly when market conditions change. So, what capital structure strategies should CFOs and corporate treasures implement? Is there a framework about what to focus on and how to decide?

The early frameworks of Child (1961)[6] advised managers to borrow the maximum at the highest possible debt rating for which a company could qualify, taking into account its industry classification and size. Decisions about the debt-equity choice would be left on the analysts of the rating agencies. Donaldson (1961)[7] suggested that companies should have certain reserves for the worst-case scenario of their expectations about the future development of earnings in order to be able to service debt obligations from operating cash flow[8]. His idea can be understood as the willingness of CFOs to accept the risk of default in exchange for the debt (especially tax) benefits in better times. If a company does not have any resources available for unexpected circumstances, what can happen is that the first serious problem could kill it off.

[5] It is almost impossible without access to confidential tax returns and extremely complex calculations that take into account loss carrybacks and carryforwards, accruals, provisions, accelerated depreciation, expected tax changes and so forth.
[6] In Davis and Sihler (1998).
[7] In Davis and Sihler (1998).
[8] Free cash flow, operating margins, debt/equity and interest coverage ratios are the most useful measures of a company's ability to survive a downturn in economy.

After 40 years, the management is advised to rely on their judgment, like in all other issues they face. Managers must consider not only capital structure but also dividend and compensation policies because they are interrelated. However, the investment decisions are more important than financing decisions. Most of the CFOs surveyed in Davis and Sihler (1998) agree that developing projects that return more than they cost is the first priority and finding the appropriate financing is the matter of interest only after that. As one of them states (Davis and Sihler, 1998, p. 46):

"You cannot make bad projects look good with financing."

Managers' preference for low debt might be a result of the higher comfort they can enjoy but a more likely reason seems to be the observation that the additional returns from higher leverage is of less value to shareholders than the flexibility and risk protection provided by conservative financing, which leaves some room for potential acquisitions and other value-creating investments such as R&D, sales and marketing, or unexpected downturn in profitability.

2.3.1 Credit Ratings

As long as the credit ratings are concerned, CFOs agree that a company can get a better access to credit and on more favorable terms by moving from a non-investment grade to an investment grade, however, within the group of investment grades, borrowing costs savings are minimal. On the other hand, the flexibility is restricted as a company moves up the ladder. The author believes that it is only a matter of prestige to have a triple A rating. Most of the companies in the survey of Davis and Sihler (1998) would like to maintain their credit rating because of the fear of a bad signal that would be send to the market in the case of a lower rating.

2.3.2 Test of Effectiveness

To find out whether the implemented capital structure policies are effective, corporate managers look at the stock price development, the ability of company to reach its strategic goals and the response of investors, lenders, customers and analysts. A mix among institutional, retail, family and other shareholders should be also taken into account because different investor groups respond differently to changes in corporate policies.

Finally, it should be noted that most of the analysts and investors are not particularly interested in the company's capital structure as long as a significant deviation from the long term target ratio and a threat of bankruptcy is not observed. What they are concerned about is whether the company responds appropriately to the changes in business environment. So, if the capital structure policy goes hand in hand with the business strategy, the market has no objections to small deviations from the target.

2.3.3 Summary

Based on the McKinsey & Company survey done by Goedhart, Koller and Rehm (2006), we can conclude that managing capital structure is the trade-off between financial flexibility and fiscal discipline imposed by debt, or in the words of Barclay and Smith (2005), the trade-off between the costs of adjustment and the costs of deviating from the capital structure target. These considerations far outweigh any tax benefits, which are negligible for most large companies and representing only about 5 percent of the firm value as we have already showed. Moreover, there are ways how to avoid paying taxes, for example structured financing including sales and leasebacks, cross-border leases, tax arbitrage transactions and others. Below is the framework as suggested by Goedhart, Koller and Rehm (2006):

1. Estimate the financing deficit or surplus from operations and strategic investments over the business cycle.

2. Set a target credit rating.

3. Develop a target debt level over the business cycle for various scenarios and within the target credit rating limits:
   - The base case scenario.
   - The worst case scenario.

4. Determine how the company should move to the target capital structure.
   - The appropriate mix of new debt, repayments, dividends, share repurchases and new equity issuances.

3 Raising Funds in the Czech Republic

"What counts is what you do with your money, not where it came from."

Merton Miller (1923-2000)

3.1 Historical, Institutional and Other Aspects

In order to apply the most appropriate theories that we introduced in Chapter 1 we must analyze historical and especially institutional aspects specific for the Czech business environment.

In this chapter, we will start with an international comparison of capital markets in Europe in order to find out how important role the Czech capital market has in the economy. It will be followed by a short summary of legal considerations regarding equity issuance. The same approach will be used in the case of debt financing. Afterwards, some of the empirical studies dealing with capital structure choice in the Czech Republic will be introduced and conclusions about the institutional specificities along managerial implications drafted.

3.2 Raising Equity

Companies have two options how to increase their equity financing: either from internal or external sources. While the former includes especially retained earnings and does not need any further explanation, the latter requires more attention. A company can raise funds by increasing its registered capital. This can be done either through the subscription of new shares[9], conditional increase of registered capital (convertible bonds or warrants) or combined increase. But in order to be done, a well functioning capital market must exist. Thus, capital markets are believed to represent one of inseparable parts of

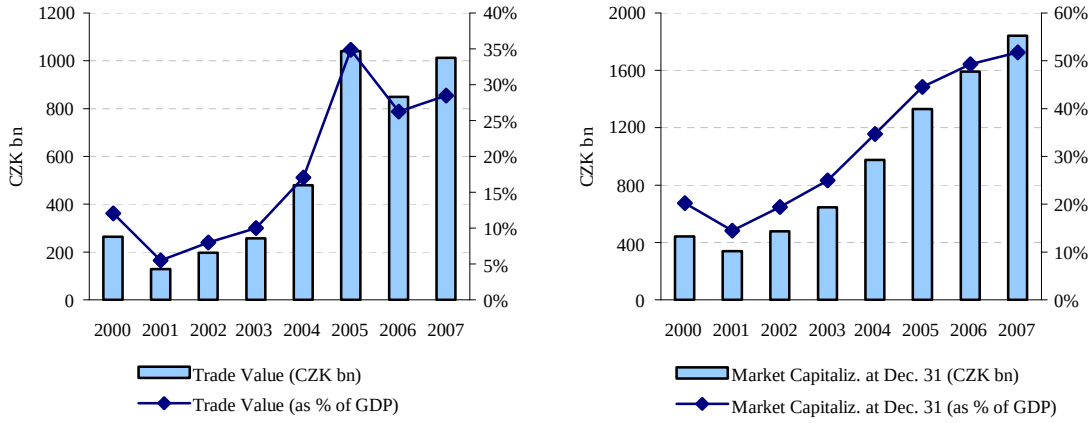
[9] Initial public offerings (IPOs) are a special case of such an increase.

functioning financing systems in developed countries. During the communist regime, it was practically non-existent in the Czech Republic, so it should be interesting to look at its features and try to assess whether it has become a useful mean of financing for the firms in the Czech Republic or not. The capital market will be represented by the Prague Stock Exchange (PSE) because other forms of equity financing (e.g. venture capital) are negligible.[10]

Let us first look at the market capitalization and value of trading of share and units at the PSE. Figure 3.1 illustrate the development of these indicators since the year 2000. As we can see, the market capitalization has been growing continuously and reached 52% of GDP in 2007 compared to only 20% in 2000. As for the value of trading, it was highest in 2005 when it reached 35% of GDP but decreased to 28% in 2007.

Figure 3.1.

Market Capitalization and Trade Value of Shares and Units as of Dec. 31 YTD



Source: Prague Stock Exchange, Czech Statistical Office and author's calculations.

Our initial conclusion is that the importance of PSE as a source of financing is growing. However, if we look at the next table where the figures are compared with other European countries and often exceed 100% of GDP, we will have to admit that the role of equity financing in the Czech Republic is still very low.

[10] It should be noted that usually only large mature or high-growth companies have access to stock exchanges and the author is aware of this fact, however, there is no better proxy for analyzing capital markets and it does not prevent us from comparing the level of development of capital markets with other countries.

Table 3.2.

PSE Compared to Other European Stock Exchanges in 2007 – Market of Shares

Market of shares and units

YEAR 2007	Market cap. (mil. EUR)	Market cap. (% of GDP)	Trade Value (mil. EUR)	Trade Value (% of GDP)	GDP (mil. EUR)
London Stock Exchange	2 634 577	130%	7 544 970	373%	2 023 589
Deutsche Börse	1 439 955	59%	3 144 150	130%	2 423 800
Wiener Börse	161 731	59%	94 489	35%	272 766
Warsaw Stock Exchange	144 323	47%	63 876	21%	307 346
Prague Stock Exchange	**47 987**	**37%**	**36 581**	**29%**	**128 130**
Budapest Stock Exchange	31 528	31%	34 610	34%	101 077
Bratislava Stock Exchange	4 555	8%	22	0%	54 827

Source: Author's calculations based on data from Federation of European Securities Exchanges.

More liquidity at the PSE is needed. However, due to historical reasons (coupon privatization), regulatory burden and high information costs (unwillingness of firms in the Czech Republic to disclose financial information) there has not been almost any successful IPO during the last 3 years. In addition, major investors in developed countries are pension funds and these investors have limited access to the capital market in the Czech Republic. Therefore, accelerating a reform of the pension system could potentially boost trading and liquidity resulting in higher interest of companies looking for additional financing.

Regulation and legal aspects are also one of the reasons why the Czech capital market is underdeveloped. If the management of a company decides to increase the registered capital, it has to go through a long and demanding procedure starting with the necessary approval of the shareholders at a general meeting, numerous authorizations and waiting for the registration in the Commercial Register.

If we take into account all the aforementioned factors, namely an underdeveloped and illiquid capital market, high regulatory burden, ineffective and long registration procedures plus the high premiums required by investment bankers or financial advisors in the case of an IPO, we end up with a conclusion that raising equity in the Czech Republic is very difficult and available only to the biggest firms.

3.3 Raising Debt

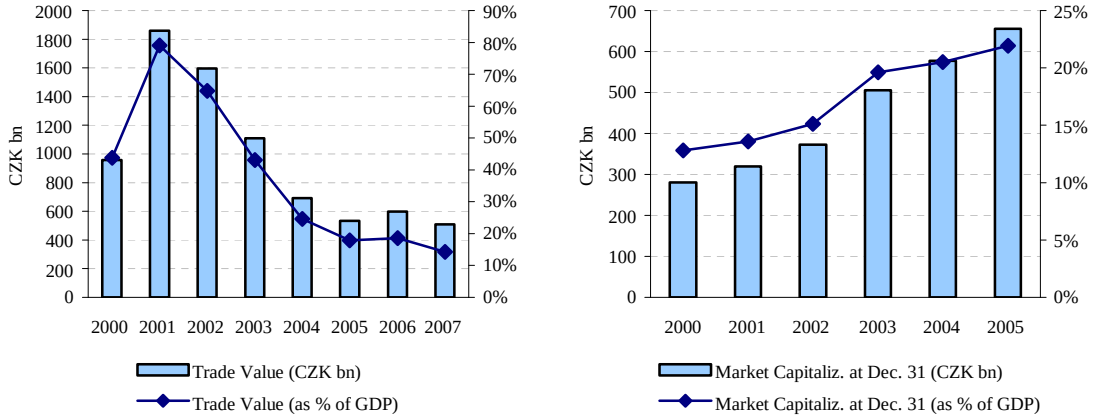
In this section we will distinguish between raising debt through bond issues and bank loans because they differ largely in the manner of execution. While the former has to rely on the capital market with all its flaws, the latter needs a competitive and effective banking environment.

3.3.1 Raising Debt through Bond Issues

The situation with bonds is not very much different from the case of equity. Figure 3.3 indicates that market capitalization of bonds has been growing steadily since 2000 and reached 22% of GDP in 2005. However, the main difference from the situation illustrated by the Figure 3.1 is the value of traded bonds, which has been decreasing since its peak of 79% of GDP in 2001. The value of trading represented only 14% of GDP in 2007.

Figure 3.3.

Market Capitalization and Trade Value of Bonds as of Dec. 31 YTD



Source: Prague Stock Exchange, Czech Statistical Office and author's calculations.

Although 14% might seem to be quite low, when compared to other European bond markets it is even more than the value of bond trading at the Deutsche Börse with only 9% of GDP. The Table 3.4 shows the figures for other European countries as well.

Table 3.4.

PSE Compared to Other European Stock Exchanges in 2007 – Market of Bonds

Market of Bonds

YEAR 2007	Trade Value (mil. EUR)	Trade Value (% of GDP)	GDP (mil. EUR)
London Stock Exchange	2 623 202	130%	2 023 589
Bratislava Stock Exchange	10 362	19%	54 827
Prague Stock Exchange	**18 375**	14%	**128 130**
Deutsche Börse	229 472	9%	2 423 800
Budapest Stock Exchange	838	1%	101 077
Wiener Börse	570	0%	272 766
Warsaw Stock Exchange	462	0%	307 346

Source: Author's calculations based on data from Federation of European Securities Exchanges.

Does it imply that the bond market in the Czech Republic is relatively liquid and represents a significant source of financing for companies? Such a conclusion would be a premature and inaccurate one. Even though the value of trading at the bond market reached CZK 1 858 billion in 2001, more than 73% of this amount was represented by the bonds issued by the public sector, especially the Czech government. The situation has even worsened since then and the value of public bonds traded at the PSE exceeded 90% of total value in 2006 (Table 3.5).[11]

Table 3.5.

Value of Public vs. Private Bond Trading in the Czech Republic

Market of Bonds

CZK bil.	2007	2006	2005	2004	2003	2002	2001	2000
Total	**509**	**599**	**533**	**692**	**1 110**	**1 596**	**1 858**	**959**
Domestic private sector	69	53	49	89	95	212	384	538
Domestic public sector	434	539	478	590	973	1 330	1 361	363
Foreign	6	7	7	14	42	54	113	58
Private	**14%**	**9%**	**9%**	**13%**	**9%**	**13%**	**21%**	**56%**
Public	**85%**	**90%**	**90%**	**85%**	**88%**	**83%**	**73%**	**38%**

Source: Author's calculations based on data from World Federation of Exchanges.

As far as the legal aspects are concerned, the procedure connected with the issuance of bonds is not as complicated as in the case of equity. It needs to be approved only by the

[11] Other European markets are also quite saturated by public bonds, so the situation in the Czech Republic is not unique.

board of directors (not a shareholder's meeting) and no registration in the Commercial Code is required. The only potential obstacle is the requirement for the nominal value of the bond issuance which must not be lower than the equivalent of 200 000 Euros.

We can conclude now that bonds represent a more important source of financing for the Czech firms than equity but their importance is limited by the inefficiencies of the Czech capital market.[12]

3.3.2 Raising Debt through Bank Loans

The banks that are present in the Czech Republic belong to the large European banking groups and therefore, we might expect that they will have similar features as their European peers. Differences are gradually decreasing due to integration at the European level, however, they are still too big to be ignored. The banking sector in the Czech Republic has gone through the hard times of transformation, privatization and low budgetary constraints of Czech firms. Many of them ended up with high amount of bad loans and the last possible option for not to be buried – a bailout from the government.

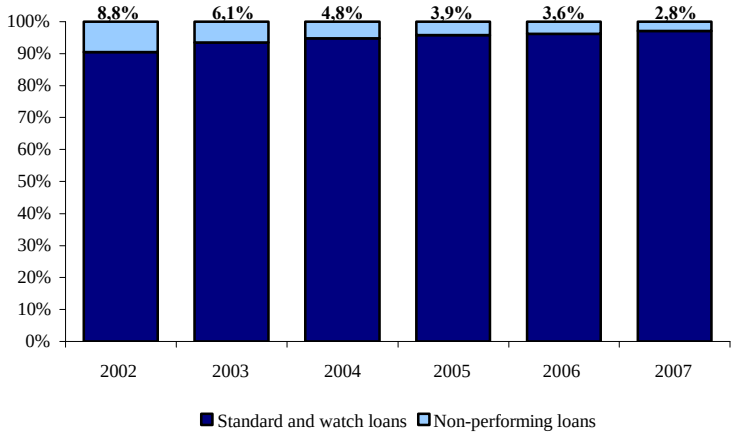
The most recent indicators measuring the financial health of the banking sector such as the risk index, probability of insolvency or non-performing loans (NPL)[13] to total loans ratio suggest that the banks have already recovered and enjoy the times of prosperity and low risk. Unfortunately, there must have been certain costs connected with the recovery, as well. In this section, we will try to show that regulation, oligopolistic structure and excessive conservatism with respect to risk exposure can be ranked among these costs and are still persistent in the Czech banking market. The discussion about what impacts these inefficiencies can have on the capital structure choice will follow.

Let us first look at the development of bad or non-performing loans to total loans in the Czech banking sector over time, which is illustrated by the Figure 3.6.

[12] A detailed table of Prague Stock Exchange indicators can be found in Appendix B.
[13] In order to be comparable across countries, non-performing loans consist of substandard, doubtful and loss loans (the same definition as International Monetary Fund uses).

Figure 3.6.

Client Loans by Categorization in the Czech Republic[14]

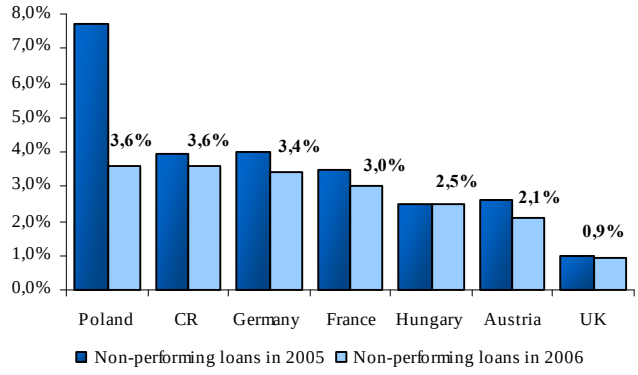


Source: Author's calculations based on data from Czech National Bank.

We can see a steady decrease of NPL/total loans ratio reaching the all-time low of only 2.8% in 2007. Compared to other countries (Figure 3.7), the NPL ratio in the Czech Republic is now at the similar level as that of Germany or France. However, the exposure to risk by western banks is much higher (even that of the UK with NPL ratio of only 0.9%) because in average, their clients' deposits represent only 80% of the total amount of provided credit compared to 110% of new EU members (Davidová and Komárková, 2008). These banks must look for other sources at the interbank and capital markets. Our first argument that the conservatism is prevailing in the Czech banking sector is thus supported.

Figure 3.7.

Bank Non-performing Loans to Total Loans in Selected Countries



NPL / Total loans	2005	2006
Poland	7,7%	3,6%
CR	3,9%	3,6%
Germany	4,0%	3,4%
France	3,5%	3,0%
Hungary	2,5%	2,5%
Austria	2,6%	2,1%
UK	1,0%	0,9%

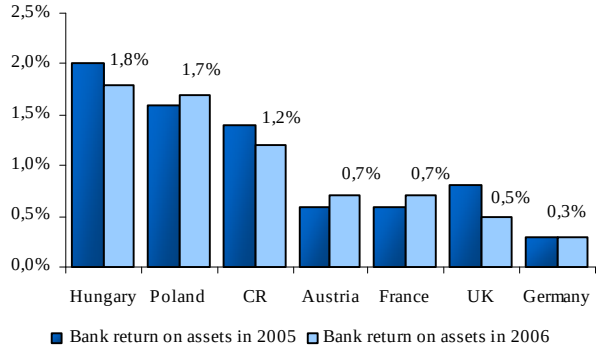
Source: International Monetary Fund (2008).

[14] A detailed table can be found in Appendix C.

The next problematic feature of the banking sector in the Czech Republic is lower level of competition.[15] The theory suggests that any company with oligopolistic advantages should enjoy higher returns. If we take banks return on assets (ROA) as a proxy for the level of competition and look at the Figure 3.8, it will be clear that there is at least a half percentage point difference from ROA of highly competitive western banking sectors. Most of the difference comes from higher growth opportunities in the Czech Republic, however, the author believes that certain portion is a result of lower competition in banking segment in the Czech Republic.

Figure 3.8.

Bank Return on Assets in Selected Countries



Bank ROA	2005	2006
Hungary	2,0%	1,8%
Poland	1,6%	1,7%
Czech Republic	1,4%	1,2%
Austria	0,6%	0,7%
France	0,6%	0,7%
United Kingdom	0,8%	0,5%
Germany	0,3%	0,3%

Source: International Monetary Fund (2008).

The last but not least problem is that all bank institutions are subject to the regulation. Because of the fear of bad debts, Czech banks are reluctant to offer credits with a reasonable interest rate for companies that have either no credit history or their business plan is relatively risky. In addition to that, the evaluation of borrowers by banks has been based on the short-term monitoring instead of long-term potential. Therefore, long-term relationships with banks and strong cash flows seem to be more important than sound business plans and innovative prospects. We will see later what impacts it can have on the financing of startups.

As for the legal considerations and administrative process of raising debt, it is much easier than in the case of equity. The company's board of directors is authorized to decide

[15] It should be noted, however, that we talk about lower competition in the Czech banking sector in general, there are special segments of the market where the competition is fierce with a high pressure on low interest rates, for example, the biggest corporations segment.

whether or not to take a loan and the whole process should not take more than a few weeks or months (in the case of a big syndicate loan).

After the analysis of the financing environment in the Czech Republic, we can now mention some of the relevant empirical studies dealing with capital structure policy.

3.4 The Empirical Research on Capital Structure in the Czech Republic

As we have mentioned before, empirical research on optimal capital structure is based mostly on the data from developed countries[16] but as the environment in developing countries becomes more transparent and the data more reliable, various studies attempting to find reasons why the capital structure in developing economies differ have appeared recently. They also try to answer the question whether the difference can be explained by the contemporary theories used in the developed world.[17]

As for the Czech Republic, some research on the topic of capital structure has been done, generally agreeing with the results of contemporary theories in developed world. However most of the studies are very general and do not focus on any specific issue. There are other drawbacks, as well, for example, neither Palata (2003) nor Bauer (2003) incorporate taxes into their model of capital structure. As we have mentioned in the previous chapters, taxes should be considered as a determinant of the capital structure policy. One of the aims of this thesis is to contribute to the discussion about the optimal capital structure policy in the Czech Republic and fill the gap by considering tax system as one of the factors influencing decisions of corporate executives. Moreover, we will look at certain sectors which might be influenced most by the changes of the tax legislation in the Czech Republic in 2008.

Older study by Cornelli, Portes and Schaffer (1996) argues that firms in transition economies have optimal or nearly optimal capital structures with respect to the business

[16] See for example Rajan and Zingales (1995) or Fama and French (2002).
[17] For example, Huang and Song (2002) study the capital structure in China, Cornelli, Portes and Schaffer (1996) in Visegrad countries and Boot el al. (2001) in other developing coutries.

environment, so the question is how and why is this capital structure different, not whether it is optimal or not. There are various reasons for this difference in the case of Czech Republic. Due to underdevelopment of the capital market and imperfections in the banking system, availability of external financing is not always guaranteed, especially for firms in their initial phase of growth. This argument is nothing else but a violation of the M&M assumption that there should be no interdependence between investment and financing decisions of corporate executives.

3.5 Implications and Suggested Strategies

We have showed that even though the importance of the Czech capital market and financing through equity issues is growing, it is still very low compared to other developed countries. The legal procedures do not help either.

We continued by investigating the role of debt financing. Whereas the legal aspects in the case of bond issues are more favorable, the same imperfections apply as far as the capital market is concerned. The situation with loans is rather different but problems with the banking sector such as lower competition, regulation and lower exposure to risk are obvious. Since the Czech companies are not motivated to disclose information about their financial situation and prospects, higher information asymmetry between insiders and outsiders can be expected. More complex contracts are required by banks if a company wants to borrow because higher debt does not mean more discipline of managers as the courts are still quite inefficient in the Czech Republic.

Putting all of the above stated characteristics of the Czech institutional environment together will lead us to three conclusions:

1. Firms in the Czech Republic should prefer internal financing from own sources, followed by debt and finally equity issues. In other words, the implications of the pecking order theory apply.
2. Certain sectors such as start-ups or riskier enterprises might face significant difficulties with looking for funds for their projects.
3. Firms cannot attain their desired capital structure.

What strategies can be suggested to corporate executives when dealing with this institutional distinctiveness? The first recommendation is to decide whether the firm needs external financing. If the answer is yes because the internal sources are just not enough, managers should start looking for a reasonable bank loan. But before a loan is taken, managers must be sure that costs associated with persuading banks to lend them minus tax advantages of debt are lower than costs associated with the postponement of the investment or costs of alternative ways of financing such as leasing, leaseback, factoring or forfaiting. A long-term relationship and a good communication with banks are crucial for obtaining credit on the most favorable terms and thus decreasing the costs of debt financing. Our final suggestion is that the firms should use equity issues as a last option and only for long term projects.

Having analyzed the historical, legal and other institutional aspects of the environment in the Czech Republic, we can now proceed to the core part of this thesis; a discussion about the impacts of the new tax reform on the capital structure of firms in the Czech Republic. Keeping in mind the specificities we have introduced in this chapter is a prerequisite for drawing any conclusions regarding capital structure policies.

4 Tax Reform Act of 2008 and Impacts on Capital Structure of Firms

"In this world, nothing is certain but death and taxes."

Benjamin Franklin (1706-1790)

A stabilization package of bills aimed at the improvement in the area of public finance was approved by the Czech government on 23rd May 2007. The amendment to the Income Taxes Code[18] with effect from 1st January 2008 represents an important part of this package. Changes in the corporate and personal income tax rates and in the rules of thin capitalization in particular deserve a special attention. They fall within the major scope of the amendment and might influence financing decisions of corporate executives. In this section, we will begin with the introduction of the legislation before and after the tax reform in the Czech Republic and compare it to other European countries. Then the methodology for the calculation of thin capitalization will be showed on a simple example. Evaluation of sectors expected to be affected most by the tax reform will follow and finally, the real example of major leasing and factoring companies will be used to illustrate the impacts.

4.1 Major Changes in the Legislation

4.1.1 Personal Income Tax

The personal income tax (progressive) lowered by the non-taxable part of the tax base and deductible items as valid in 2007 is summarized in the following table:

[18] Income Taxes Code No. 586/1992 Coll. - only a brief overview of this code is presented here. For more detailed wording, please see the Appendix A (available only in Czech language).

Table 4.1.

Personal Income Tax in 2007

Tax base (CZK)	Tax (CZK)	From tax base exceeding (CZK)
0 - 121 200	12%	
121 200 - 218 400	14 544 + 19%	121 200
218 400 - 331 200	33 012 + 25%	218 400
331 200 and more	61 212 + 32%	331 200

Source: Section One, § 16, Income Taxes Code No. 586 / 1992 Coll.

The Tax Reform Act of 2008 has imposed the flat tax rate of 15% calculated from a "super-gross" salary (the social security and health insurance paid by the employer is included in the tax base). As a result, the effective tax rate for individuals with income less than CZK 20 thousand increased. Individuals with income over 20 CZK thousand have, in general, benefited from the tax reform (Jirsová, 2008).

4.1.2 Corporate Income Tax

Corporate income tax rate was 24% in 2007, while tax rate for investment, share and pension funds represented 5%. The tax reform lowered the corporate income tax rate to 21% and a further decrease for following years is expected, as well. Tax rate for investment, share and pension funds has remained unchanged. (Section Two, § 21, Income Taxes Code No. 586 / 1992 Coll.)

4.1.3 Thin Capitalization

According to the Czech tax legislation, thin capitalization limits are determined by the ratio of a company's borrowings to its equity. General doubts and misinterpretations concerning controversial changes in thin capitalization rules have arisen since 1st January 2008. In the year 2007, only interests on loans from **related parties**[19] were limited by thin capitalization rules. According to these rules, if the borrower's debt-equity ratio exceeded 4:1, the excess portion of the interest paid to a related party was not considered to be a tax-deductible expense for the borrower (6:1 in the case the borrower was a bank or an insurance company).

[19] A related party is defined as any person who directly or indirectly participates in the management of the borrower, or has more than 25% shareholding in the registered capital of the borrower, or has more than 25% of the voting rights in the borrower. (Section Two, § 23, Income Taxes Code No. 586 / 1992 Coll.)

The new amendment to the Income Taxes Act has imposed even stricter limits on tax-deductibility of interest from related-party loans, formed a completely new rule for unrelated-party loans and redefined the meaning of certain terms and phrases. The definition of financial costs (including arrangement cost, commitment fee, the fee for reserving undrawn funds, the fee for premature payment of the loan etc.) instead of only interest costs has been implemented into the Income Taxes Code. The financial costs are non-deductible if at least one of the following conditions is fulfilled:

1. Financial costs from loans exceed the average twelve-month reference rate (PRIBOR/EURIBOR) increased by 4%.
2. Financial costs come from subordinated or profit participating loans.
3. Total amount of company's loans exceeds six times the amount of total equity.
4. The total amount of related-party loans exceeds two times the amount of company's total equity (three times in the case the recipient of such loans is a bank or an insurance company).

The amendment also defines the limit of financial costs (CZK 1 million) from unrelated-party loans to which the above stated thin capitalization rules do not apply. (Section Three, § 25, Income Taxes Code No. 586 / 1992 Coll.)

4.2 International Comparison of Tax Legislations

Czech Ministry of Finance provides the reasons for the amendment to the Income Taxes Act in their explanatory report from 2007. They argue that interests represent a category susceptible to tax planning, especially to substitution of profit share payments, which are not, in contrary to interests, tax deductible. It might be prevented by various ways, most often by thin capitalization limitations. In order to bring the debt/equity ratio limits closer to the ratios in other EU countries, the Ministry is proposing stricter thin capitalization rules. (MFCR, 2007)

In the reaction to the critical comments of experts to the proposed thin capitalization rules, Ministry of Finance claimed that during the last couple of years

number of other European countries had implemented or were in the process of implementing stricter rules, as well. (MFCR, 2007)

However, the international comparison of taxes across developed European countries in 2008 shows something else (see Table 4.2). Eight out of fourteen countries have no specific thin capitalization rules, other two have replaced them by only general limitations quite recently and the remaining ones (except for France) have less binding rules. In addition, none of the countries have any specific debt/equity limitations for unrelated-party loans and borrowings.

Despite only Germany, Ireland and United Kingdom having lower corporate tax rate than Czech Republic, artificial limitations such as thin capitalization rules can cause the effective tax rate to be considerably higher, as we will see in Section 4.3. In the case of personal income tax, Czech Republic has the lowest rate among all western European countries, which indicates quite favorable conditions for individuals. Taxes on capital gains, dividends and interest income vary quite significantly across Europe, so it is really complicated to make a comparison.

We can do the same comparison with Central and Eastern European countries (CEE). As indicated by the Table 4.3, the situation now is rather different. Not only has the Czech Republic the most binding thin capitalization rules for related-party loans[20] but even the corporate as well as personal tax rate are not so favorable anymore. The corporate income tax rates amount to 10% and less in some of the countries. The individual income tax rates are usually in the range from 15% to 20%.[21]

[20] Thin capitalization rules for unrelated-party loans are not provided by the Table 5.3 but the author assumes that there are no such rules in other CEE countries.
[21] Withholding taxes on capital gains, interest and dividends are present in the table only for reference because the situation is more complicated and we are not dealing with them directly.

Table 4.2.

Taxes in European countries[22]

Taxes in Europe

YEAR 2008	Corporate income tax	Personal Income Tax	Thin capitalization
Austria	25%	progressive, 50% max.	No specific thin-capitalization rules.
Belgium	33%	progressive, 50% max.	1:1 debt/equity ration applies to loans granted by individual directors, shareholders and non-resident corporate directors to their company. 7:1 debt/equity ratio applies to debt if the creditor is exempt or taxed at a reduced rate in respect of the interest paid on the debt.
Finland	26%	progressive, 31.5% max.	No specific thin-capitalization rules.
Germany	15%	progressive, 45% max.	Effective from 1 January 2008. the previously applicable thin capitalization legislation with a debt/equity ratio of 1.5:1 for related companies is replaced with a general limitation on the deduction of interest payments. Interest expenses may only be deducted up to 30% of EBITDA. If the interest expenses do not exceed the interest income derived by the paying company, they remain deductible.
Greece	25%, 20% for partnerships and civil law associations	progressive, 40% max.	No specific thin-capitalization rules.
France	33.33%	progressive, 40% max.	1.5:1 debt/equity ratio applies to loans granted by related companies.
Ireland	12.5% for trading income, 25% for non-trading income	progressive, 41% max.	No specific thin-capitalization rules.
Italy	27.5%	progressive, 43% max.	From tax year 2008, the thin capitalization rules are repealed. Any interest expenses that exceed interest income are deductible to the extent of 30% of EBITDA. Banks and financial institutions are not subject to the above limitations.
Luxembourg	22%	progressive, 38% max.	No specific thin-capitalization rules.
Netherlands	EUR 200 000 and more - 25.5%, EUR 40 000-200 000 - 23%, EUR 40 000 and less - 20%	progressive, 52% max.	3:1 debt/equity ratio applies to loans granted by related companies and the excess of debt has to be greater than EUR 500 000.
Norway	28%	28%	No specific thin-capitalization rules.
Spain	30%	progressive, 43% max.	If the average total loans made to a company resident in Spain by a non-EU resident related company is more than three times of the borrower's net worth (excluding profits of the tax period), the excess interest will be recharacterized as a dividend for tax purposes.
Sweden	28%	progressive, 56% max.	No specific thin-capitalization rules.
UK	28%, 21% for small companies, 19% on ring fence profits (up to GBP 300 000)	progressive, 40% max.	From tax year 2004, the thin capitalization rules are repealed. and replaced by legislation that forms part of the extended transfer pricing regime.

Source: International Bureau of Fiscal Documentation (2008).

[22] Taxes are quite simplified but sufficient for our analysis.

Table 4.3.

Taxes in Central and Eastern European Countries[23]

Taxes in CEE

YEAR 2008	Corporate income tax	Thin capitalization	WHT on dividends (a)	WHT on interest (a)	WHT on capital gains (a)	Personal Income Tax
Albania	10%	4:1	10%	10%	10%	10%
Armenia	20%	-	10%	10%	10%	20% (j)
Azerbaijan	22%	-	10%	10%	10%	14%/35%
Bosnia and Herc.	10%	-	5%	10% (b)	10%	0/10/15% (k)
Bulgaria	10%	3:1	5%	10%	10%	10% (l)
Croatia	20%	4:1	-	15%	-	15-45%
Czech Republic	21%	2:1	15%	15%	-	15% (l)
Estonia	21/79 (c)	-	0%/21% (d)	0%/21% (e)	- (f)	21% (l)
Georgia	15%	-	10%	10%	-	25% (l)
Hungary	16%+4%	3:1	-	-	-	18%/36% (m)
Kazakhstan	30%	4:1	15%	15%	20%	10% (l)
Latvia	15%	4:1	0%/10%	5/10/15%	2% (g)	25% (l)
Lithuania	15%/3%	4:1	0%/15%	10%	10%	15%/24%
Macedonia	10%	-	10%	10%	-	10% (l)
Moldova	0%	- (h)	15% (i)	10%	10%	7-18%
Montenegro	9% (a)	-	15%	5%	15%	15% (l)
Poland	19%	3:1	19%	20%	-	19-40%
Romania	16%	3:1	16%	16%	16%	16% (l)
Russia	24%	3:1	15%	20%	20%	13% (l)
Serbia	10%	approx. 4:1	20%	20%	20%	12%
Slovakia	19%	-	-	19%	19%	19%
Slovenia	22%	6:1	15%	15%	-	16-41%
Ukraine	25%	-	15%	15%	15%	15%/30% (n)
Uzbekistan	10%	-	10%	10%	20%	13-25%

NOTES

(a) unless reduced by tax treaty, EU Directive or domestic exemption, if applicable
(b) 5% is applicable in Federation Bosnia Herzegovina and 0% is applicable in Republika Srpska
(c) undistributed profits are tax exempt (21/79 tax applies on the net amount of profit distribution)
(d) 21% applies to non-resident entities holding less than 15% of the share capital/voting power of an Estonian company or located in low-tax jurisdictions
(e) 21% applies to the part of interest that significantly exceeds the arm's length level.
(f) certain capital gains may be subject to tax on a self-assessment basis
(g) applies only on sale of real estate and shares in real estate companies
(h) no debt-to-equity ratio provided; certain restrictions are in place
(i) if related expenses are non-deductible for CIT purposes Herzegovina
(j) applicable on annual income over AMD 960 000 (EUR 2000) the rate is AMD 96 000 (EUR 200) + 20%
(k) In Federation rates depend on where a person lives. In Republika Srpska: 0% for lowest annual salary, 10% for average salary, and 15% for salary above average.
(l) flat rate
(m) plus 4% solidarity tax on income over HUF 6,748,850
(n) 15% for residents, 30% for non-resident

Source: Taxes at a Glance, PricewaterhouseCoopers (2008).

[23] Taxes are quite simplified but sufficient for our analysis.

4.3 Calculation Methodology for Thin Capitalization

The thin capitalization ratio is calculated separately for each taxable period. The interest costs that may not be deducted by corporate entities are calculated as follows:[24]

- for related-party loans (2:1):

$$NDIC = (1 - \frac{2E}{TRL})(TRL - SRL - PRL),$$

- for related-party loans if the recipient of such loans is a bank or an insurance company (3:1):

$$NDIC = (1 - \frac{3E}{TRL})(TRL - SRL - PRL), \text{ where}$$

The expression in the first brackets is sometimes called *coefficient*,
NDCI = non-deductible interest costs,
E = the balance of equity as at the first day of the relevant tax period. If during the tax year there is a change in the equity, then the arithmetic average of balances of equity is used,
TRL = total *related-party* loans and borrowings (average of the daily balances in the relevant tax period),
SRL = subordinated *related-party* loans and borrowings,
PRL = profit participating *related-party* loans and borrowings.

- for unrelated-party loans (6:1):

$$NDIC = (1 - \frac{6E}{TL})(TUL - SUL - PUL), \text{ where}$$

TL = total loans and borrowings (average of the daily balances in the relevant tax period),
TUL = total *unrelated-party* loans and borrowings,
SUL = subordinated *unrelated-party* loans and borrowings,
PUL = profit participating *unrelated-party* loans and borrowings.

[24] The author's calculations are based on the Tax Flash newsletters published by PricewaterhouseCoopers.

Provided that the equity for the relevant year is negative, all interest from loans from related parties represent tax non-deductible expenses. In addition to the debt/equity ratio rules, there are also other, as mentioned in the legislation summary of thin capitalization in Czech Republic. Let us use a simple example to illustrate the methodology of calculation.

Example I – A hypothetical company

Our hypothetical company with the residence in the Czech Republic has credit and loans from both unrelated and related parties, with some credit and loans being subordinated to the company's other liabilities or profit participating.

The interest rate on some of credit and loans is 8%. The reference interest rate increased by 4% amounts to 7.5%. Equity (E) amounts to CZK 5 million and net profit before tax represents CZK 25 million. Credit and loans as well as interest costs are indicated in Table 4.4.

Table 4.4.
Credit and Loans of a Hypothetical Company

Credit and loans	Ordinary	Subordinated	Profit participating	Total
(CZK ths)				
From unrelated parties	25 000	20 000	15 000	**60 000**
From related parties	15 000	10 000	5 000	**30 000**
Total credit and loans	**40 000**	**30 000**	**20 000**	**90 000**
8% of interest on credit and loans	**Ordinary**	**Subordinated**	**Profit participating**	**Total**
(CZK ths)				
From unrelated parties	2 000	1 600	1 200	**4 800**
From related parties	1 200	800	400	**2 400**
Total credit and loans	**3 200**	**2 400**	**1 600**	**7 200**

Source: Author's calculations based on Taxes at a Glance, PricewaterhouseCoopers (2008).

Now we can proceed to the gradual testing of thin capitalization rules:

Table 4.5.

Gradual Testing of Thin Capitalization

Test	Description	Unrel. parties	Rel. parties	Total
(CZK ths)	**Total financial costs**	**4 800**	**2 400**	**7 200**
1ST TEST (subord. loans)	Tax non-deductible financial costs from subordinated loans.	1 600	800	2 400
2ND TEST (profit part. loans)	Tax non-deductible financial costs from profit participating loans	1 200	400	1 600
3RD TEST (related-party loans)	Tax non-deductible financial costs from debt exceeding the debt to equity ratio of 2:1 are excluded from the remaining interest, i.e. from CZK 1.2m *CALCULATION: coef. x (TRL - SRL - PRL) = 0.667 x (CZK 2.4m - 0.4m - 0.8m) = 800* *coef. = 1 - (2 x CZK 5m / 30m) = 66.7%*	0	800	800
4TH TEST (unrelated-party loans)	Tax non-deductible financial costs from debt exceeding the debt to equity ratio of 6:1 are excluded from the remaining interest, i.e. from CZK 2.0m *CALCULATION: coef. x (TUL - SUL - PUL) = 0.667 x (CZK 4.8m - 1.2m - 1.6) = 1 333* *coef. = 1 - (6 x CZK 5m / 90m) = 66.7%* As the proportion of excluded interest in the previous steps is not lower than 66.7% of excluded interest in this test, we do not exclude any interest tested in the prev. steps; the prev. steps excluded 100% of CZK 0.8m, 1.6m, 1.2m and 0.4m and 66.7% of CZK 1.2m	1 333	0	1 333
5TH TEST (reference rate)	Tax non-deductible financial costs exceeding the reference rate increased by 4%. *CALCULATION: Financial costs x coef.* *coef. = [(8% - ref. rate incr. by 4%) / 8%]=[(8% - (3,5% + 4%)) / 8%] = 6.25%* Nothing is excluded because the proportion of excluded interest in the previous steps exceeds 6.25%	0	0	0
	Total non-deductible financial costs	**4 133**	**2 000**	**6 133**

NOTES
1) If a larger percentage of exclusion occurs in tests 2-5 than in the previous test, only the percentage difference is excluded in the given test.

Source: Author's calculations based on the method presented in Tax Flash, PricewaterhouseCoopers (2007).

As we can see in the table, more than 85% of total financial costs represent tax non-deductible expenses according to the new rules. The evaluation of impacts on the effective tax rate of our hypothetical company is provided by the next table.

Table 4.6.

Impacts of the Tax Reform on the Effective Tax Rate

Situation	Net profit before tax	Tax non-deductible financial costs	Tax base	Tax	Tax rate	Effective tax rate	Net profit after tax
(CZK ths)							
Before the tax reform	25 000	-	25 000	6 000	24%	24%	19 000
After the tax reform	25 000	6 133	31 133	6 538	21%	26%	18 462

Source: Author's calculations based on study by KPMG (2007).

Despite the decrease in corporate tax rate from 24% to 21%, the effective tax rate in our example increased by 2% due to the new thin capitalization limitations. This is in contrary with what Czech Ministry of Finance has labeled as the improvement of tax burden for all taxpayers. Moreover, our example is far away from being too extreme. There are companies in the Czech Republic, debt/equity ratios of which amount to 10 and more. It is not because they are too liberal in debt financing. It is due to the nature of their business. The next section evaluates the sectors with characteristics of being extremely levered since they are expected to be affected most by the tax reform.

4.4 Selection of Sectors Affected Most by the Tax Reform Act

Czech Ministry of Finance declared that the reason for the new thin capitalization rules is to motivate firms to use more equity when financing their activities because higher leverage goes hand in hand with unstable economy. Another (already mentioned) reason was to prevent tax planning and optimalization within the group of related companies and bring additional income to the public budget. (MFCR, 2007)

However, each regulation or restriction has also certain (usually unintended) "side-effects". Unfortunately, costs of these side-effects usually exceed the intended benefits. Furthermore, a very important question arises: Should the optimal capital structure of firms be determined by the legislators?

In this case, stricter thin capitalization rules affect quite significantly certain sectors of the economy. Especially sensitive are those with high leverage and riskier nature of their business:

1. Real estate developers
    - The value of projects in this sector very often exceeds CZK 1 billion. Even the strongest players on the market do not have so much free internal funds at their disposal. Moreover, external funds are usually cheaper than internal funds, they can be used immediately or when needed and the procedure of

getting a loan is relatively fast. That is why debt financing is inevitable for smooth operations of real estate developers.

2. Leasing and factoring companies
    - High leverage is one of the main characteristics of firms providing financial leasing or factoring services. As in the case of real estate developers, debt financing is more convenient than equity financing. High leverage in this sector is possible because leasing companies pledge most of their assets as a security for loans.
3. Czech affiliates with a foreign parent company that are financed by loans from Czech banks
    - Tax planning will not be removed but reinforced because the foreign parent company will rather take a loan itself in legislation without thin capitalization restrictions and then transfer money in the form of equity to its Czech affiliate. Thus, Czech banks might lose some clients.
4. Public-private partnerships (PPP)
    - In number of cases, government does not have enough public funds to finance a certain project. Partnerships with private investors can provide additional funds and solve this problem. However, the projects usually amount to billions of CZK and private investors thus need external sources in the form of debt.
5. Medium innovative firms in the phase of high growth
    - With a reference to Chapter 3, the author believes that high-growth companies have limited access to external capital. Further restrictions make it even harder for these companies to get necessary financing in the initial phase. Banks usually require a risk premium for companies with no credit history. Interest rates required by banks might therefore exceed the limit imposed by thin capitalization rules. Most of innovative firms in the Czech Republic will never reach a point, in which they start generating own profits and finance their activities internally.
6. Other highly indebted companies and companies in bankruptcy

The impact on the capital structure of firms operating in the above sectors is obvious. Those firms able to increase their registered capital or other equity financing will

struggle to do that in order to remain within the limits of thin capitalization rules. However, as we outlined in Chapter 3, the procedure of raising equity is very complicated and costly in the Czech Republic. There are also other forms of financing such as factoring or forfaiting, however not as commonly used and usually more expensive. All in all, the additional costs of financing might be transferred to customers or cause a decrease in investments and profits, none of which is a good signal for economy and tax collectors. For high-growth companies or venture capital, thin capitalization means just another restriction to already limited access to external capital. Some of them might not be able to change their capital structure and therefore, might be forced to either leave the Czech market or terminate their activities completely.

In the next section, financial leasing and factoring companies will illustrate how big the impact on the critical sectors might be (ceteris paribus).

4.4.1 Example of Leasing and Factoring Firms

Our dataset comprises of 73 companies providing financial leasing or factoring services in the Czech Republic. A detailed list along with the method of selection can be found in the Appendix E. Interesting results can be derived from the table. It is obvious that this sector is predominantly financed by credit. The average debt/equity ratio for the whole sample represents 5.0 with average bank loans of CZK 1.6 billion out of CZK 2.9 billion of total assets. However, one can notice that most of the small companies (in respect of total assets) have smaller debt/equity ratios. Since smaller companies in our sample fall within the limits of thin capitalization rules and therefore should not be affected by the tax reform so much, it would be more interesting to look at the bigger leasing and factoring companies controlling most of the market anyways. The average debt/equity ratio of a company with total assets greater than CZK 1 billion amounts to 5.6. If we go even further and choose top five companies in respect of total assets, we will get to the ratio of 6.9. We can stick to these five companies because their nearly 50% share of total assets of all 73 companies represents a significant portion of the market and will be sufficient for our further analysis.[25]

The next step is to evaluate how the new thin capitalization rules along with lower corporate tax rate affects the effective tax rate of the top five companies. The average value

[25] The average values of these top five companies will be used.

of equity amounts to CZK 1 799 million and total borrowings are CZK 12 362 million (see Appendix E). Once again we can assume that the company has credit and loans from both unrelated and related parties, with some credit and loans being subordinated to the company's other liabilities or profit participating.

The interest rate on some of the loans remains 8%. Reference interest rate increased by 4% amounts to 7.5%. Average earnings before interest and taxes (EBIT) amount to CZK 568 million. Credit and loans as well as interest costs are indicated in Table 4.7.

Table 4.7.

Credit and Loans of Leasing and Factoring Companies

Credit and loans	Ordinary	Subordinated	Profit participating	Total
(CZK mil)				
From unrelated parties	6 000	1 000	1 000	**8 000**
From related parties	2 500	1 500	362	**4 362**
Total credit and loans	**8 500**	**2 500**	**1 362**	**12 362**

8% of interest on credit and loans	Ordinary	Subordinated	Profit participating	Total
(CZK mil)				
From unrelated parties	480	80	80	**640**
From related parties	200	120	29	**349**
Total credit and loans	**680**	**200**	**109**	**989**

Source: Author's calculations based on Taxes at a Glance, PricewaterhouseCoopers (2008).

By using the same methodology as in Example I in section 4.3 (see Appendix E), we will find out that CZK 405 million out of CZK 989 million represents tax non-deductible financial costs. As we can see in the Table 4.8, the effective tax rate increased by 12% to 36%, which is considerably more than 2% in our hypothetical case in the Example I in the section 4.3.

Table 4.8.

Impacts of the Tax Reform on the Eff. Tax Rate of Leasing and Factoring Companies

Situation	EBIT	Tax non-deductible financial costs	Tax base	Tax	Tax rate	Effective tax rate	Net profit after tax
(CZK mil)							
Before the tax reform	568	-	568	136	24%	24%	432
After the tax reform	568	405	973	204	21%	36%	364

Source: Author's calculations based on study by KPMG (2007).

One can, of course, argue that the above is only a ceteris paribus approach disregarding the ability of firms to change their capital structure and finance their activities from other sources. However, taking into consideration the institutional issues of the Czech environment such as underdevelopment of the capital market, the ability of certain sectors to change their capital structure and finance their activities from equity or other sources is usually quite limited. In spite of additional costs of equity financing, some of the companies have already done so, which provides a support for our implications presented in this chapter (Němečková, 2008). For more detailed analysis, financial statements of the firms for the year 2008 would be needed. But it is very likely that also other companies will follow in decreasing their debt/equity ratios in order to fit within the limits of thin capitalization rules.

Conclusions

„We contend that for a nation to try to tax itself into prosperity is like a man standing in a bucket and trying to lift himself up by the handle.“

Winston Churchill (1874 – 1965)

To recapitulate, the major purpose of this thesis is to evaluate the impacts of thin capitalization rules after the amendment to the Income Taxes Code on the capital structure of firms in the Czech Republic.

Explanatory report suggests the intention of Czech Ministry of Finance to prevent speculative transfer of funds within the group of related companies and support the equity financing of firms. The author has no objections against these intentions. However, imposing additional restrictions with significant side effects as in the case of stricter thin capitalization rules is not a good way to reach such goals.

The relevant capital structure theories introduced by Modigliani and Miller are reviewed in the first chapter of the thesis in order to provide a background for any conclusions made in the latter parts. The most recent studies deal with dynamic capital structure adjustments and argue that firms rebalance their leverage to stay within an optimal range, rather than specific target. Empirical evidence presented in Chapter 2 suggests that interpretation of capital structure is very difficult. In the case of taxes, most of the studies presented here vary in their conclusions about tax advantages of debt but agree that taxes should be considered by corporate executives. All in all, none of the theories can exist as a stand-alone model for forming optimal capital structure policy but all of them are necessary to get a full picture of the issue. Managerial implications suggest that investment decisions are more important than ways of financing projects. A good evaluation of the trade-off between financial flexibility and fiscal discipline imposed by debt is necessary, as well.

The results of Chapter 3 indicate that institutional aspects might affect corporate decisions regarding capital structure policy. The capital market in the Czech Republic

does not represent an important source of funds because most of the firms do not have access to it and the legal procedure regarding the increase of the registered capital is quite long and time-consuming. Even though it is much easier to issue bonds than shares, only big corporations have access to the bond market because of low liquidity. Low exposure to risk by banks in the Czech Republic can further restrict the access to capital of firms with no credit history or startups. Our suggestions for Czech managers is to keep good relationships with banks in order to obtain credit at more favorable terms, use internal sources when sufficient and consider external equity issues only as a last option. Keeping in mind the specificities we have introduced in this chapter, we could proceed to the main part of the thesis and assess the impacts of thin capitalization rules on capital structure.

The amendment to the Income Taxes Code tightens the limitations on related-party loans, which are now one of the strictest across the EU and CEE countries. Furthermore, it imposes unique limitations also for unrelated-party loans and on the level of interest rate. The findings of Chapter 4 show that despite the decrease in corporate tax rate from 24% to 21%, the effective tax rate of our sample of major leasing and factoring companies increased by 12%. This is in contrary with the intentions of Czech Ministry of Finance to improve the tax burden for all taxpayers. Other sectors especially sensitive to stricter thin capitalization rules such as real estate developers, medium innovative firms or public-private partnerships are outlined, as well. The only reasons for being affected so much are: high leverage and riskier characteristics of the business. It is very likely that all of these sectors will do their best to adjust capital structure policies accordingly. Some of the firms have already done so, which is a proof of the fact that financing decisions are sometimes not derived from investment decisions and firms do respond to legal or other restrictions. However, then there are also other sectors unable to change capital structure. The access to external funds of high-growth companies, for example, is already quite limited. Therefore, we might expect no change in the capital structure but a decrease in investments and profits should be evident.

The amendment to the Income Taxes Code of 2008 disrupts legitimate expectations of agents, changes the business environment and disproves the essential purpose of taxing the income *after* the deduction of all expenses provably realized in order to reach and sustain the income. Last but not least, it imposes economically inefficient structure of debt

and equity of firms in the Czech Republic. The author believes that capital structure decisions should remain a matter of corporate executives and not determined by legislators.

To sum it up, if the Czech Ministry of Finance wants to support equity financing of the firms, it should reduce the regulatory burden connected with raising equity instead of imposing additional restrictions on debt. Here is a nice comparison:

A man has one leg broken. Instead of supporting the broken leg with the other one so that it becomes healthy again, the legislators rather keep throwing logs in front of the healthy leg with an illusion that the man will be forced to use the broken one. Many of these men fall down, however.

Appendix A

Taxes in 2007

586/1992 Sb.

ZÁKON

České národní rady

ze dne 20. listopadu 1992

o daních z příjmů

stav k 5.9.2007

ČÁST PRVNÍ
Daň z příjmů fyzických osob
§ 16
Sazba daně

(1) Daň ze základu daně sníženého o nezdanitelnou část základu daně (§ 15) a o odčitatelné položky od základu daně (§ 34) zaokrouhleného na celá sta Kč dolů činí:

Základ daně		Daň	Ze zákl. přesah.
od Kč	do Kč		
0	121 200	12 %	
121 200	218 400	14 544 Kč + 19 %	121 200 Kč.
218 400	331 200	33 012 Kč + 25 %	218 400 Kč.
331 200	a více	61 212 Kč + 32 %	331 200 Kč.

(2) Z příjmů uvedených v § 8 odst. 4 a § 10 odst. 8 plynoucích ze zdrojů v zahraničí, jsou-li zahrnuty v samostatném základu daně, činí sazba 15 %, nejde-li o příjmy uvedené v § 10 odst. 1 písm. h) a ch). Z příjmů podle § 10 odst. 1 písm. h) a ch) plynoucích ze zdrojů v zahraničí, které jsou zahrnuty v samostatném základu daně, činí sazba 20 %.

ČÁST DRUHÁ
Daň z příjmů právnických osob
§ 21
Sazba daně

(1) Sazba daně činí 24 %, pokud v odstavcích 2 a 3 není stanoveno jinak. Tato sazba daně se vztahuje na základ daně snížený o položky podle § 34 a § 20 odst. 7 a 8, který se zaokrouhluje na celé tisícikoruny dolů.

(2) Sazba daně činí 5 %

(a) u investičního fondu. Tato sazba daně se vztahuje na základ daně snížený o položky podle § 34, který se zaokrouhluje na celé tisícikoruny dolů, a

(b) u podílového fondu. Tato sazba daně se vztahuje na základ daně snížený podle § 20 odst. 3, který se zaokrouhluje na celé tisícikoruny dolů.

(3) Sazba daně činí 5 % u penzijního fondu. Tato sazba daně se vztahuje na základ daně snížený o položky podle § 34, který se zaokrouhluje na celé tisícikoruny dolů.

(4) Sazba daně 15 % se vztahuje na samostatný základ daně podle § 20b zaokrouhlený na celé tisícikoruny dolů.

(5) U investičního fondu, který v průběhu zdaňovacího období ukončil činnost, se použije sazba daně podle odstavce 2 jen na část základu daně stanoveného podle § 20a. Obdobně se postupuje u akciové společnosti, ze které v průběhu zdaňovacího období vznikl investiční fond.

(6) Pro stanovení daně se použije sazba daně podle předchozích odstavců účinná k poslednímu dni zdaňovacího období nebo období, za něž je podáváno daňové přiznání.

ČÁST TŘETÍ
Společná ustanovení
§ 25

(1) Za výdaje (náklady) vynaložené k dosažení, zajištění a udržení příjmů pro daňové účely nelze uznat zejména
...

(w) úroky z úvěrů a půjček, u nichž je věřitel osobou spojenou ve vztahu k dlužníkovi, a to ve výši úroků z částky, o kterou úhrn úvěrů a půjček od spojených osob, v průběhu zdaňovacího období nebo období, za něž se podává daňové přiznání, přesahuje šestinásobek výše vlastního kapitálu, je-li příjemcem úvěru a půjčky banka nebo pojišťovna, nebo čtyřnásobek výše vlastního kapitálu u ostatních příjemců úvěrů a půjček. Do úvěrů a půjček se nezahrnují úvěry a půjčky nebo jejich část, z nichž úroky jsou součástí vstupní ceny majetku, a dále prokazatelně poskytnuté bezúročné úvěry a půjčky. Toto ustanovení se nevztahuje na osoby jinak spojené uvedené v § 23 odst. 7 písm. b) bodě 5, na poplatníky uvedené v § 18 odst. 3, na burzu cenných papírů a na poplatníky uvedené v § 2.

Taxes in 2008

193/2008 Sb.

ZÁKON

České národní rady

ze dne 20. listopadu 1992

o daních z příjmů

ČÁST PRVNÍ
Daň z příjmů fyzických osob
§ 16
Sazba daně

Daň ze základu daně sníženého o nezdanitelnou část základu daně (§ 15) a o odčitatelné položky od základu daně (§ 34) zaokrouhleného na celá sta Kč dolů činí 15 %.

ČÁST DRUHÁ
Daň z příjmů právnických osob
§ 21
Sazba daně

(1) Sazba daně činí 21 %, pokud v odstavcích 2 a 3 není stanoveno jinak. Tato sazba daně se vztahuje na základ daně snížený o položky podle § 34 a § 20 odst. 7 a 8, který se zaokrouhluje na celé tisícikoruny dolů.

(2) Sazba daně činí 5 % a) u investičního fondu. Tato sazba daně se vztahuje na základ daně snížený o položky podle § 34, který se zaokrouhluje na celé tisícikoruny dolů, a b) u podílového fondu. Tato sazba daně se vztahuje na základ daně snížený podle § 20 odst. 3, který se zaokrouhluje na celé tisícikoruny dolů.

(3) Sazba daně činí 5 % u penzijního fondu. Tato sazba daně se vztahuje na základ daně snížený o položky podle § 34, který se zaokrouhluje na celé tisícikoruny dolů.

(4) Sazba daně 15 % se vztahuje na samostatný základ daně podle § 20b zaokrouhlený na celé tisícikoruny dolů.

(5) U investičního fondu, který v průběhu zdaňovacího období ukončil činnost, se použije sazba daně podle odstavce 2 jen na část základu daně stanoveného podle § 20a. Obdobně se postupuje u akciové společnosti, ze které v průběhu zdaňovacího období vznikl investiční fond.

(6) Pro stanovení daně se použije sazba daně podle předchozích odstavců účinná k prvnímu dni zdaňovacího období nebo období, za něž je podáváno daňové přiznání.

ČÁST TŘETÍ
Společná ustanovení
§ 25

(1) Za výdaje (náklady) vynaložené k dosažení, zajištění a udržení příjmů pro daňové účely nelze uznat zejména
...

(w) finanční výdaje (náklady), kterými se pro účely tohoto zákona rozumí úroky z úvěrů a půjček a související výdaje (náklady) včetně výdajů (nákladů) na zajištění, zpracování úvěrů, poplatků za záruky, pokud

1. přesáhnou v úhrnu za zdaňovací období nebo období, za něž se podává daňové přiznání, částku zjištěnou jako násobek jednotné úrokové míry zvýšené o čtyři

procentní body zdaňovacího období nebo období, za něž se podává daňové přiznání. Jednotná úroková míra se stanoví jako průměr z referenční hodnoty úrokových sazeb na trhu mezibankovních depozit pro splatnost 12 měsíců relevantním pro měnu, v níž je vyjádřen úvěr nebo půjčka, k poslednímu dni každého měsíce zdaňovacího období nebo období, za něž se podává daňové přiznání; přitom úroky z úvěrů a půjček vyjádřených v různých měnách se posuzují samostatně za jednotlivé měny,

2. plynou z úvěrů a půjček, které jsou podřízeny ostatním závazkům poplatníka,

3. plynou z úvěrů a půjček, kde úrok nebo výnos nebo skutečnost, zda se finanční výdaje (náklady) stanou splatnými, jsou zcela nebo zčásti odvozovány od výsledku hospodaření (zisku) poplatníka,

4. úhrn úvěrů a půjček v průběhu zdaňovacího období nebo období, za něž se podává daňové přiznání, přesahuje šestinásobek výše vlastního kapitálu,

5. úhrn úvěrů a půjček, u nichž je věřitelem nebo osobou, která úvěr nebo půjčku zajišťuje, osoba spojená (§ 23 odst. 7) ve vztahu k dlužníkovi, v průběhu zdaňovacího období nebo období, za něž se podává daňové přiznání, přesahuje trojnásobek výše vlastního kapitálu dlužníka, je-li příjemcem úvěru a půjčky banka nebo pojišťovna, nebo dvojnásobek výše vlastního kapitálu u ostatních příjemců úvěrů a půjček.

Za výdaj (náklad) na dosažení zajištění a udržení příjmů nelze pro účely tohoto zákona uznat poměrnou část finančních výdajů (nákladů) vztahujících se k úvěrům a půjčkám nebo jejich části, které splňují alespoň jednu z podmínek uvedených v bodech 1 až 5; přitom každá z podmínek se posuzuje samostatně. Do úvěrů a půjček se pro účely tohoto ustanovení nezahrnují úvěry a půjčky nebo jejich část, z nichž jsou finanční výdaje (náklady) součástí vstupní ceny majetku, a dále prokazatelně poskytnuté bezúročné úvěry a půjčky. Toto ustanovení se nevztahuje na poplatníky uvedené v § 2, v § 18 odst. 3, na burzu cenných papírů a na finanční výdaje (náklady) zaúčtované na vrub nákladů, které v úhrnu za zdaňovací období nebo období, za něž se podává daňové přiznání, nepřevýší 1 000 000 Kč, není-li věřitelem nebo osobou, která úvěr nebo půjčku zajišťuje, osoba spojená ve vztahu k dlužníkovi.

Appendix B

Prague Stock Exchange Indicators

INDICATOR	2000	2001	2002	2003	2004	2005	2006	2007
GDP (CZK bn, current p.)	2 189	2 352	2 464	2 577	2 815	2 988	3 232	3 558
MARKET OF SHARES AND UNITS								
Trade Value (CZK bn)	264	129	197	257	480	1041	849	1013
Trade Value (as % of GDP)	12%	5%	8%	10%	17%	35%	26%	28%
Trade Volume (mil. pieces)	823	547	804	831	1179	1765	1072	984
Market Capitaliz. at Dec. 31 (CZK bn)	443	340	478	644	976	1331	1592	1842
Market Capitaliz. at Dec. 31 (as % of GDP)	20%	14%	19%	25%	35%	45%	49%	52%
Number of Issues at Dec. 31	151	102	79	65	55	39	32	32
Main Market	5	5	5	5	6	8	10	21
Secondary Market *)	60	48	41	34	29	19	11	-
Free Market	86	49	33	26	20	12	11	11
MARKET OF BONDS								
Trade Value (CZK bn)	959	1858	1596	1110	692	533	599	509
Trade Value (as % of GDP)	44%	79%	65%	43%	25%	18%	19%	14%
Number of Issues at Dec. 31	94	84	74	81	79	96	110	132
Market Capitaliz. at Dec. 31 (CZK bn) **)	280	319	372	506	577	656	na	na
Market Capitaliz. at Dec. 31 (as % of GDP)	13%	14%	15%	20%	21%	22%	na	na
TOTAL								
Total Trade Value (CZK bn)	1223	1987	1793	1368	1172	1574	1448	1522
Total Trade Value (as % of GDP)	56%	84%	73%	53%	42%	53%	45%	43%
Total Market Capitaliz. at Dec. 31 (CZK bn)	723	660	851	1150	1553	1986	na	na
Total Market Capitaliz. at Dec. 31 (as % of GDP)	33%	28%	35%	45%	55%	66%	na	na

*) The merger of the main and the secondary markets took effect on 1 July, 2007.

**) The market capitalization of bonds is defined as a product of the sum of securities registered in the emission, nominal value and the exchange rate (in percent), divided by 100.

Source: Prague Stock Exchange, Czech Statistical Office and author's calculations.

Appendix C

Client Loans and Categorization

Client Loans by Categorization

CZK mil.	2002	2003	2004	2005	2006	2007
TOTAL LOANS	**751**	**816**	**875**	**1 026**	**1 222**	**1 554**
Standard loans total	83,8%	87,7%	88,7%	89,9%	90,2%	93,8%
Watch loans total	7,2%	6,2%	6,5%	6,3%	6,4%	3,4%
Non-performing loans	**8,8%**	**6,1%**	**4,8%**	**3,9%**	**3,6%**	**2,8%**
Substandard loans total	3,3%	1,8%	1,8%	1,2%	1,2%	1,0%
Doubtful loans total	1,3%	0,7%	0,4%	0,6%	0,6%	0,5%
Loss loans total	4,4%	3,7%	2,5%	2,1%	1,7%	1,3%

Source: Author's calculations based on data from Czech National Bank.

Appendix D

Main Leasing and Factoring Companies

Leasing and factoring companies in CR (cont'd)

COMPANY YEAR 2005, in CZK mil	Total assets	Equity	Liabilities	Bank loans	Net profit	EBIT	Total indebt.	D / E ratio
Čsob Leasing, a.s.	31 031	4 654	20 800	18 656	295	409	85,0	4,0
ŠkoFIN, s.r.o.	25 065	1 456	18 618	8 105	334	801	94,2	5,6
UniCredit Leasing CZ, a.s.	21 127	1 128	16 215	13 889	190	669	94,7	12,3
SG Equipment Finance CR, s.r.o.	14 420	1 199	11 672	10 578	336	433	91,7	8,8
VB Leasing CZ, s.r.o.	13 464	559	11 055	10 582	142	525	95,9	18,9
DaimlerChrysler Serv. Boh., s.r.o.	9 190	873	7 376	6 492	241	473	90,5	7,4
Santander Consumer Finance, a.s.	7 331	891	6 264	5 537	-28	229	87,8	6,2
Deutsche Leasing ČR, s.r.o.	7 068	478	5 790	5 363	128	372	93,2	11,2
Immorent ČR, s.r.o.	6 344	1 104	5 193	4 491	96	207	82,6	4,1
S Morava Leasing, a.s.	5 445	195	4 074	653	1,9	155	96,4	3,3
GE Money Auto, a.s.	4 682	1 574	2 428	204	589	836	66,4	0,1
ing Lease (C.R.) , s.r.o.	4 625	394	4 193	313	77	281	91,5	0,8
NLB Factoring, a.s.	4 340	149	4 180	3 510	34	141	96,6	23,6
Leasing České spořitelny, a.s.	4 311	34	3 644	2 828	35	139	99,2	82,2
Transfinance, a.s.	4 188	243	3 943	2 258	45	134	94,2	9,3
Scania Finance Czech Republic, s.r.o.	4 084	285	3 613	0	78	199	93,0	0,0
ALD Automotive, s.r.o.	3 834	975	2 386	2 146	19	19	74,6	2,2
Gmac, a.s.	3 283	91	3 140	2 697	-120	13	97,2	29,5
Renault Leasing CZ, s.r.o.	3 175	196	2 180	1 665	52	129	93,8	8,5
HVB Leasing Czech Republic, s.r.o.	2 781	19	2 762	2 237	34	126	99,3	118,8
Caterpillar Fin. Serv. ČR, s.r.o.	2 571	123	2 198	15	29	39	95,2	0,1
Raiffeisen - Leasing, s.r.o.	2 495	147	2 033	1 802	116	215	94,1	12,3
Alpha Immorent, s.r.o.	2 489	553	1 930	1 559	-7,9	39	77,8	2,8
Omnipol, a.s.	2 323	521	1 728	631	43	76	77,6	1,2
Unileasing, a.s.	2 312	369	1 324	1 153	70	89	84,0	3,1
D.S. Leasing, a.s.	2 306	168	1 699	1 381	24	69	92,7	8,2
Pema Praha, s.r.o.	2 028	268	1 719	510	-8,9	73	86,8	1,9
K+R Projekt, s.r.o.	1 599	367	1 232	1 218	-1,5	39	77,1	3,3
Toyota Fin. Serv. Czech, s.r.o.	1 593	89	1 307	855	26	68	94,4	9,6
Billa Reality, s.r.o.	1 465	772	693	79	28	26	47,3	0,1
Oberbank Bohemia Leasing, s.r.o.	1 139	42	869	835	13	38	96,3	19,8
VFS Financial Services CR, s.r.o.	1 119	10	1 038	0	-8,1	14	99,1	0,0
Raiffeisen - Leasing Real Est., s.r.o.	1 035	86	904	641	69	97	91,7	7,4
Servis Leasing, a.s.	964	243	701	536	0,5	20	74,8	2,2
CB Leasing, a.s.	736	58	500	471	0,2	21	92,1	8,1
Hyundai Motor CZ, s.r.o.	680	247	434	287	108	184	63,8	1,2
Czech Cardinal, a.s.	673	430	243	8,9	0,1	0,1	36,1	0,0
Imobilia Ken-Pru, s.r.o.	596	94	500	311	12	15	84,2	3,3
Efis, a.s.	502	81	397	380	8,8	9,4	83,8	4,7
Honda Česká republika, s.r.o.	477	141	332	130	19	35	70,4	0,9
Emil Frey ČR, s.r.o.	464	183	280	10	17	26	60,5	0,1
Agro Leasing J.Hradec, s.r.o.	436	280	22	0	42	54	35,7	0,0
IPB Invest, a.s.	386	54	266	252	6,5	9,4	86,0	4,7
Corral, a.s.	361	10	309	0	24	35	97,1	0,0
PREleas, a.s.	353	77	233	231	17	23	78,1	3,0
Vltavín leas, a.s.	343	166	129	96	0,5	11	51,6	0,6
D.S. Factoring, s.r.o.	306	41	265	167	5,7	13	86,5	4,1
Leasing - Star, s.r.o. Teplice	277	80	194	58	1,4	2,1	71,0	0,7
Fa Rene, s.r.o.	257	162	95	0	41	56	37,1	0,0

Leasing and factoring companies in CR

COMPANY YEAR 2005, in CZK mil	Total assets	Equity	Liabilities	Bank loans	Net profit	EBIT	Total indebt.	D / E ratio
HP Invest, a.s.	187	181	4,2	0	1,1	1,1	3,1	0,0
NL - Leasing, s.r.o.	167	49	100	79	6,4	13	70,8	1,6
Pekárny a cukrárny Klatovy, a.s.	159	114	44	0	25	34	27,8	0,0
3V leasing, a.s.	134	5,2	119	7,7	0,1	0,8	96,1	1,5
Tvrdo - leasingová společnost, s.r.o.	129	31	25	0	3,8	6,2	76,0	0,0
NEU leasing, a.s.	92	11	61	51	2,6	6,9	88,5	4,8
Releas, a.s.	74	34	27	15	5,7	8,9	54,0	0,4
BN Leasing, a. s.	70	16	29	27	3,8	5,2	76,8	1,6
Evas Holding, a.s.	57	44	12	0	2,0	1,5	23,0	0,0
AutoCont Leasing, a.s.	55	43	12	0	41	45	21,1	0,0
FOR Leas, a.s.	52	42	3,8	0	2,0	3,6	19,3	0,0
Block leasing, s.r.o.	39	12	7,5	0	1,1	1,5	69,2	0,0
Ripe Comp., s.r.o.	27	0,2	27	0	0,0	0,1	99,3	0,0
Tradeleas, a.s.Pardubice	27	4,9	21	5,4	2,5	4,2	81,8	1,1
DEKORA - Leasing, a.s.	25	15	5,6	5,3	0,3	1,5	38,5	0,3
Lenta, s.r.o.	20	17	1,4	0	0,1	0,1	16,5	0,0
Amikon, s.r.o.	19	11	2,4	1,2	0,1	0,2	40,0	0,1
Bestfin, a.s.	13	4,8	4,5	0	0,3	0,5	61,9	0,0
ABC.Enterprise, a.s.	13	4,2	8,4	0	0,1	0,4	66,6	0,0
Digitronic CZ, s.r.o.	9,6	0,6	9,0	0	0,3	0,5	93,4	0,0
CSK - Invest, s.r.o.	8,6	4,1	4,3	0	1,9	2,6	51,9	0,0
Zanclus, s.r.o.	7,4	1,9	4,6	5,9	0,1	0,4	74,3	3,1
Kariva Trade, s.r.o.	4,9	0,1	4,9	2,0	0,3	0,4	50,3	0,5
Arafin, a.s.	3,1	1,6	1,2	0,8	0,8	1,2	65,0	1,7
AVERAGE	**2 924**	**315**	**2 242**	**1 589**	**46**	**107**	**76,7**	**5,0**
AVERAGE (Total assets over 1 bil)	**6 190**	**606**	**4 794**	**3 421**	**90**	**217**	**77,4**	**5,6**
AVERAGE (Top 5 in total assets)	**21 021**	**1 799**	**15 672**	**12 362**	**259**	**568**	**74,6**	**6,9**

Selection based on:

	NACE (branch classification) predominant – group = financial leasing or factoring
OR	CPV (Common Procurement Vocabulary) = financial leasing services or factoring
AND NOT	In liquidation
AND	Equity capital greater than zero
AND	EBIT greater than zero
AND	Total indebtedness greater than zero

Source: CREDITINFO Firemní Monitor Czech Republic, 5/2008.

Appendix E

Gradual Testing of Thin Capitalization of Leasing and Factoring Firms

Leasing and factoring firms

Test	Description	Unrel. parties	Rel. parties	Total
(CZK mil)	**Total financial costs**	**640**	**349**	**989**
1ST TEST (subord. loans)	Tax non-deductible financial costs from subordinated loans.	80	120	200
2ND TEST (profit part. loans)	Tax non-deductible financial costs from profit participating loans	80	29	109
3RD TEST (related-party loans)	Tax non-deductible financial costs from debt exceeding the debt to equity ratio of 2:1 are excluded from the remaining interest, i.e. from CZK 200m *CALCULATION: coef. x (TRL - SRL - PRL) = 0.175 x (CZK 349m-29m-120m) = 35* *coef. = 1 - (2 x CZK 1 799m / 4 362m) = 17.5%*	0	35	35
4TH TEST (unrelated-party loans)	Tax non-deductible financial costs from debt exceeding the debt to equity ratio of 6:1 are excluded from the remaining interest, i.e. from CZK 480m *CALCULATION: coef. x (TUL - SUL - PUL) = 0.127 x (CZK 640m - 80m - 80m) = 61* *coef. = 1 - (6 x CZK 1 799m / 12 362m) = 12.7%* As the proportion of excluded interest in the previous steps is not lower than 12.7% of excluded interest in this test, we do not exclude any interest tested in the prev. steps; the prev. steps excluded 100% of CZK 80m, 120m, 80m and 29m and 17.5% of CZK 200m	61	0	61
5TH TEST (reference rate)	Tax non-deductible financial costs exceeding the reference rate increased by 4%. *CALCULATION: Financial costs x coef.* *coef. = [(8% - ref. rate incr. by 4%) / 8%]=[(8% - (3,5% + 4%)) / 8%] = 6.25%* Nothing is excluded because the proportion of excluded interest in the previous steps exceeds 6.25%	0	0	0
	Total non-deductible financial costs	**221**	**184**	**405**

Source: Author's calculations based on the method presented in Tax Flash, PricewaterhouseCoopers (2007).

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UNIVERSITAS CAROLINA PRAGENSIS
založena 1348

Univerzita Karlova v Praze
Fakulta sociálních věd
Institut ekonomických studií

Opletalova 26
110 00 Praha 1
TEL: 222 112 330,305
TEL/FAX: 222 112 304
E-mail: ies@mbox.fsv.cuni.cz
http://ies.fsv.cuni.cz

Akademický rok 2007/2008

TEZE BAKALÁŘSKÉ PRÁCE

Student:	Martin Mendroš
Obor:	Ekonomie
Konzultant:	Mgr. Magda Pečená Ph.D.

Garant studijního programu Vám dle zákona č. 111/1998 Sb. o vysokých školách a Studijního a zkušebního řádu UK v Praze určuje následující bakalářskou práci

Předpokládaný název BP:

The Impact of Thin Capitalization Rules on Capital Structure of Firms in the Czech Republic

Charakteristika tématu, současný stav poznání, případné zvláštní metody zpracování tématu:

The new public budget policy and stabilization mechanism brings a lot of significant changes into the tax system of the Czech Republic. Current discussion deals with only certain aspects of the reform, whereas other parts are left without notice. The amendment of the income tax, specifically the part seriously limiting the allowance of a firm to deduct its interest payments from the calculation of taxable income, is one of these aspects and would deserve more attention by experts. This change might, in fact, lead to the restriction of the use of credit in the Czech economy and subsequently, together with unfavourable institutional environment and relatively high costs of the financing through the Czech capital market, to the real hardship of certain sectors to get funding for their projects.

In this work, after the introduction and the theoretical background, I would like to analyze the impact of such a reform on capital structure of the firms in and then look at the specific sectors like real-estate development or building industry, which will be affected most since their activities are to the great extend financed by debt. This section will be followed by a discussion whether these firms are able to adjust their capital structure (debt/equity and debt/total assets ratio) via financing their projects by issuing new equity, in order to keep the cost of capital at the previous level. Other determinants of the optimal capital structure of firms in Czech Republic will be introduced as well. All my conclusions drawn from the empirical research of the firms will be based on the modern theory of

capital structure established by Modigliani and Miller (1958), conditional theories like trade-off and pecking order theory and finally, recent development in financial management, namely dynamic models of target capital structure.

Struktura BP:

Introduction	
The theory:	Modigliani&Miller theorem Other relevant theories – trade-off, pecking order theory, agency costs, signaling theory Recent development in financial management – dynamic models of target capital structure
Income tax reform:	Cost/benefit analysis of the reform Impact on firms cost of capital Analysis of the critical sectors Firms ability to adjust their capital structure Estimated future development of firms leverage
Conclusions:	Propositions for future amendments in the tax system

Seznam základních pramenů a odborné literatury:

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- **www.pse.cz** Prague Stock Exchange
- **www.cnb.cz** Czech National Bank
- **www.csu.cz** Czech Statistical Office

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Podpisy konzultanta a studenta:

.

V Praze dne