

Vysoká škola ekonomická v Praze

Diplomová práce

2017

Igor Sýkora

University of Economics, Prague

Faculty of Finance and Accounting

Department of Banking and Insurance

Field of study: Banking and Insurance

Diploma thesis

Financial analysis of bankruptcy

(Finanční analýza bankrotu)

Author: Igor Sýkora

Supervisor: prof. Ing. Karel Janda, M.A., Dr., Ph.D.

Year: 2017

Declaration

I hereby declare that I am the only author of this thesis and furthermore I also declare that all external sources of information are marked.

Čestné prohlášení:

Prohlašuji, že jsem diplomovou práci na téma „Financial analysis of bankruptcy“ vypracoval samostatně a veškerou použitou literaturu a další prameny jsem řádně označil a uvedl v přiloženém seznamu.

V Praze dne 21.8.2017

.....

Igor Sýkora

Abstract

Thesis “Financial analysis of bankruptcy” is divided into three sections. First section focus on agency problems and its implications to bankruptcies. Bankruptcy with soft budget approach prefer reorganization of firm instead of liquidation. Implementation of rescue culture in Czech Insolvency Act is described. Second section focus on financial analysis of firm in order to reveal approaching bankruptcy. Liquidity, debt, performance and efficiency ratios are introduced. Moreover, bankruptcy and solvency models such as Altman’s z score, IN Financial Analysis and Kralicek’s Quick test are described into detail. Final section analyse bankruptcy of Czech lottery leader Sazka in order to find out what is the originator of it. Analysis consist of description of its insolvency proceedings involving all above mentioned points of view – legal point, soft budget constraint and financial analysis.

Keywords: Agency problems, bankruptcy with soft budget constraint, Czech insolvency proceedings, financial analysis, bankruptcy models, Sazka’s bankruptcy

JEL Classification: G3, K20

Abstrakt

Diplomová práce Finanční analýza bankrotu je rozdělena do tří sekcí. První sekce popisuje teorii zastoupení a její dopad na bankrot. Bankrot s měkkým rozpočtovým omezením preferuje reorganizaci firmy před její likvidací. Popíšu zakomponování této záchrany pro firmy do Českého insolvenčního zákona. Druhá sekce se věnuje finanční analýze firmy za účelem odhalit blížící se bankrot. K tomu slouží likviditní, dluhové, výkonnostní ukazatele. Navíc bankrotní a bonitní modely jako Altmanovo z skóre, IN Finanční Analýza a Kralicekův rychlý test jsou popsány do detailu. Poslední fáze analyzuje bankrot Českého loterijního hegemonu společnosti Sazka za účelem odhalit důvod jejího bankrotu. Analýza spočívá v popsání insolvenčního procesu ze všech výše zmíněných úhlů pohledu – právního, bankrotu s měkkým rozpočtovým omezením a finanční analýzy.

Klíčová slova: Teorie zastoupení, bankrot s měkkým rozpočtovým omezením, České insolvenční řízení, finanční analýza, bankrotní modely, úpadek společnosti Sazka

Klasifikace JEL: G3, K20

Poděkování

Na tomto místě bych rád vyjádřil poděkování lidem, díky nimž jsem se dobral konce studia.

V první řadě poděkování patří mé rodině a přátelům, kteří mě nejenom formovali v průběhu celého procesu, ale hlavně psychicky podporovali.

Chtěl bych také poděkovat svým kolegům, kteří se mnou měli trpělivost, mnohokrát mi i pomohli a tolerovali mé potřeby věnovat se nikoli pouze práci, ale i škole.

Rád bych poděkoval za možnost strávit semestr v zahraničí. Měl jsem to štěstí podívat se na místo, kam jsem toužil a potkat zde profesory a student – přátele, kteří mě nesmírně obohatili a změnili můj pohled na život.

Dále bych chtěl poděkovat vedoucímu mé diplomové práce panu prof. Ing. Karlu Jandovi, M.A., Dr., Ph.D. za jeho odborné rady, připomínky, doporučení, čas a hlavně, který mi v průběhu zpracování diplomové práce věnoval.

Za přínosnou korespondenci vděčím i panu Adalbertu Kolínskému.

| | |
|-----------------------------------------------------------------------------------|----|
| Introduction | 1 |
| 1. Way to crisis | 4 |
| 1.1. Capital structure | 6 |
| 1.1.1. Economic implications of debt..... | 6 |
| 1.1.2. Asset claims – normal situation..... | 7 |
| 1.1.3. Asset claims – when bankruptcy occurs..... | 8 |
| 2. Economics of bankruptcy | 9 |
| 2.1. Bankruptcy and entrepreneurship..... | 10 |
| 2.2. Post-bankruptcy efficiency | 10 |
| 2.2.1. Distance to frontier | 11 |
| 2.2.2. Duration | 12 |
| 2.2.3. Administrative costs | 13 |
| 2.2.4. Recovery rate | 14 |
| 2.2.5. Liquidation or continuation..... | 16 |
| 2.3. Goals of bankruptcy | 17 |
| 3. Agency theory and soft budget constraint | 19 |
| 3.1.1. Agent vs principal relationship | 19 |
| 3.1.2. Agency costs | 20 |
| 3.2. Agency theory models..... | 21 |
| 3.2.1. Moral hazard models | 22 |
| 3.2.2. Adverse selection models | 23 |
| 3.2.3. Signaling models..... | 23 |
| 3.3. Soft and hard budget constraints..... | 23 |
| 3.4. Bankruptcy with soft budget constraint | 25 |
| 4. Legal Framework of bankruptcy | 26 |
| 4.1. Absence of bankruptcy law | 26 |
| 4.2. Design of optimal bankruptcy law | 26 |
| 4.2.1. Institutions | 28 |
| 4.2.2. Judicial corruption | 29 |
| 4.3. Czech legal framework concerning bankruptcy and insolvency proceedings | 29 |
| 4.3.1. USA – role model of rescue culture | 30 |
| 4.3.2. Evolution of bankruptcy law at Czech lands up to present | 30 |
| 4.4. Insolvency proceedings according to Insolvency Act (No. 182/2006 Coll.)..... | 32 |
| 4.5. Reasons for bankruptcy | 32 |
| 4.5.1. Bankruptcy due to insolvency | 32 |
| 4.5.2. Bankruptcy due to over indebtedness | 33 |
| 4.5.3. Bankruptcy due to impending insolvency | 34 |

| | | |
|--------|----------------------------------------------------------------------------------------|----|
| 4.6. | Insolvency proceedings and its bodies | 34 |
| 4.6.1. | Bodies of insolvency proceedings | 34 |
| 4.6.2. | Insolvency petition | 35 |
| 4.6.3. | Insolvency proceedings step by step | 36 |
| 4.6.4. | Court decision | 37 |
| 4.6.5. | Possible solutions | 37 |
| 4.6.6. | Straight-bankruptcy | 37 |
| 4.6.7. | Reorganization..... | 38 |
| 5. | Financial analysis..... | 39 |
| 5.1. | Debt paying ability | 39 |
| 5.1.1. | Liquidity | 39 |
| 5.1.2. | Leverage | 41 |
| 5.2. | Performance and efficiency | 44 |
| 5.3. | Bankruptcy predicting models | 46 |
| 5.3.1. | Altman's Z-score model..... | 47 |
| 5.3.2. | IN Financial Analysis | 50 |
| 5.3.3. | Kralicek's Quick test | 52 |
| 6. | Case study of SAZKA a.s. | 54 |
| 6.1. | Lottery business and Sazka's market position before bankruptcy from 2004 to 2010 | 54 |
| 6.2. | SAZKA's trademark in new millennium | 56 |
| 6.2.1. | SAZKA Arena – the troublemaker | 58 |
| 6.2.2. | Bestsport, a.s..... | 59 |
| 6.2.3. | Aleš Hušák | 59 |
| 6.3. | Highway to hell | 60 |
| 6.4. | Straight-bankruptcy resulting in going concern | 64 |
| 6.5. | Sazka's debt paying ability before bankruptcy | 65 |
| 6.5.1. | Sazka's capital and assets structure | 65 |
| 6.5.2. | Sazka's liquidity before bankruptcy..... | 66 |
| 6.5.3. | Sazka's leverage before bankruptcy | 68 |
| 6.6. | Sazka's performance and efficiency before bankruptcy..... | 68 |
| 6.7. | Sazka's bankruptcy indicators..... | 70 |
| 6.7.1. | Sazka's Altman's Z score..... | 70 |
| 6.7.2. | Sazka's INFA | 71 |
| 6.7.3. | Sazka's Kralicek's quick test..... | 71 |
| 6.8. | Aftermath | 72 |
| 6.9. | Findings | 74 |
| | Conclusion..... | 77 |

| | |
|------------------|----|
| References | 80 |
|------------------|----|

Introduction

“Capitalism without bankruptcy is like Christianity without hell.” ~ Frank Borman

As long as there is an attempt of mankind to make a living, the entrepreneurial spirit will inspire people to take a risk and set up new venture. Some of those will grow into really huge ones and survive for long time, however the others will die while growing. The reason of failure may differ. Two main categories why are either inappropriate venture idea or its execution. Often the venture idea and execution are separated. Not all venturers have innate skills to manage their firms. Almost all multinational corporations employ professional managers in order to take care about the shareholder's assets. As a result the relationship known as agent-relationship is established. It is only natural that the owner's interest may differ from interest of manager.

Majority of firms use someone else's money in order to achieve higher profit, revenues or market share. Again, agency relationship is created between creditor (principal) and debtor (agent). In a meantime, with higher financial leverage the risk of failure is growing and management have to prove itself even more. Management has to be controlled and the importance of corporate governance is emphasized. In case of lenient corporate governance mismanagement can cause firm's failure.

After failure, there are lots of unsatisfied creditors (suppliers, employees, etc.) in role of principal and one debtor (usually) in role of agent. Principals are often worried about unsettled claims and they may initiate run on debtor's assets. To assure the certain extent of peace amongst all stakeholders it is suitable to establish rules. Rules – bankruptcy law according which the settlement will be navigated.

In order to write good and efficient bankruptcy law it is necessary to define what is goal of such a rules. Is it the rescue of a firm and maintaining employment or is it satisfaction of creditors at any cost. Even if the settlement of claims seems just and fair, should the creditor be given a chance to try negotiate the settlement plan? All those facts pressure not only the law but the system itself. Sometimes the good code is not enough if it is inappropriately executed.

Moreover, the concern of principal as well as agent should be whether the firm is performing well. Is the usage of debt optimal, or even is the debt needed at all? In order to measure the performance and assess the over indebtedness financial ratios derived from accounting measures are used. Besides this, ratios could indicate approaching bankruptcy. There are multiple models predicting bankruptcy with different success.

In first chapter I will describe how the firm could end up in crisis, what are the common denominators observable by the way. Moreover, I will stress the different asset claims resulting from different funding structures of firms. Those claims change once firm enters bankruptcy proceedings. Debt is connected with certain advantages as tax shield and disadvantages as well.

In second chapter I will discuss the economics of bankruptcy. What are the economic differences between the firms worth saving and the rest. Moreover, I will show three internationally measured indicators (length of proceedings, costs, recovery rate) giving the view on how efficient bankruptcy proceedings are based on The World's Bank project doing business. Besides, the statistic on bankruptcies may indicate certain bias towards straight-bankruptcy or reorganization. Theory about what should be the goal of bankruptcy will follow. Should the firm be saved or not? Till which extent creditors should be protected and debtors punished for breaching the contracts.

Agency problem, connected with relationship of principal-agent, where agent should act on behalf of principal and in principal's best is described in third chapter. This problem is omnipresent and could be find in everyday life the examples will be shown and described. Three different agency models and their implication to creditor debtor relationship will be described. Last but not least, implications on bankruptcy proceedings either resulting in bankruptcy (hard budget constraint) or reorganization (soft budget constraint) will be discussed as well.

Additionally, not only for case study, it is important to understand basic principles of insolvency proceedings. The way ideal bankruptcy law should be designed will be discussed. USA as a best rescue culture model will be described. Furthermore, after the evolution of bankruptcy law in Czech lands, current codification of insolvency proceedings in Czech Republic will follow. Two alternative solutions of insolvency proceedings in form of straight-bankruptcy and reorganization have completely different impact on firm.

Aiming to assess the firm's health, I will describe the ratios used to measure firm's over indebtedness, liquidity and performance. Breakdown of return on assets, return on equity will expose the originators of company's performance. What is more, three models to reveal imminent bankruptcy will be introduced. I will use elaborated Altman's model, IN Financial Analysis developed by Neumaier's especially for privately held companies in Czech Republic and Kralicek's Quick Test.

Finally, not only for creditors, but also for debtors and other bystanders it might be useful to estimate firm's future. During last year two enormous firms ended in insolvency with option to be reborn (OKD, a.s., VÍTKOVICE POWER ENGINEERING a.s.). Their failure can significantly influence economic and social situation of whole region in which they employ thousands of people. Both of those firms were part of holdings with difficulty to assess their financial health. On case study of Sazka's I will describe Czech insolvency proceedings, calculate Sazka's liquidity, indebtedness, profitability and efficiency. Question is whether Sazka's decline could have been expected and what is the originator of it. Implication of agency relationship is to be find in this case study as well.

1. Way to crisis

“In the Chinese language, the word "crisis" is composed of two characters, one representing danger and the other, opportunity.” John F. Kennedy

Firm's life cycle is basically derived from life cycle of product, as firms are highly dependent on their products. There are five stages of life cycle. For depicted life cycle see figure 1 below.

At the beginning there is a start-up with newly introduced product. Early adopters are the first customers. If company is successful the product spread amongst the masses and revenues are growing rapidly due to economies of scale. Maturity stage is highly competitive. The company spends a lot on marketing and small improvements of product in order to maintain high market share. Once a market is saturated or even worse it may shrink the decline occurs (Ohlsson-Corboz, 2015).

At this stage it is important for company to reinvent itself. It can modify the product, switch to different product completely or enhance the production line. In case of good strategic management company is reborn. Otherwise it is heading toward crisis.

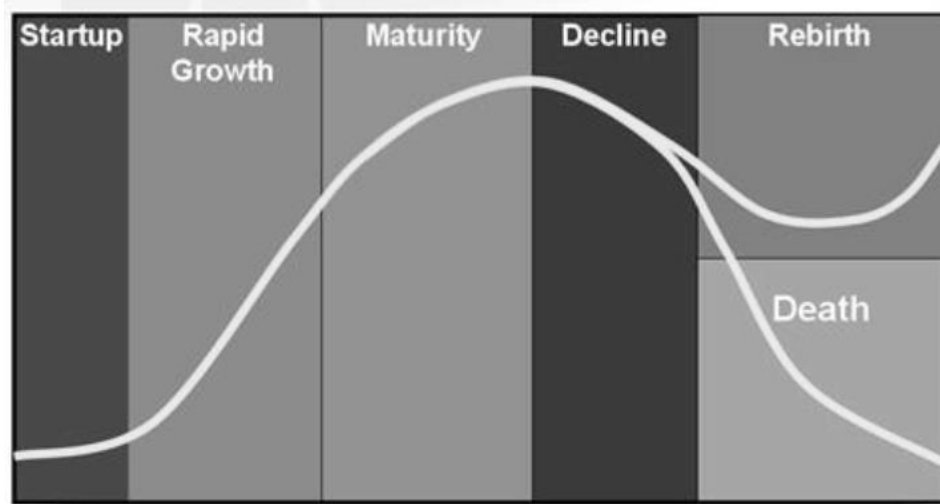


Figure 1 Business Life Cycle, source: (The Presidents' Council Foundation, 2015)

Every company that ended up in crisis has to pass through certain stages of difficulties. Usually it starts with decrease of revenues, followed by decrease of profitability of a company. Subsequently

the need for higher working capital and finally financial distress occurs. This usually leads to insolvency (Synek, et al., 2000).

Reasons of the aforementioned scenario are either internal or external. Internal factor could be influenced by the company. Not only problems with liquidity, profitability, mismanagement are classified as internal but creative accounting and frauds as well. The company is responsible for setting up a control environment to prevent those issues (Synek, et al., 2000).

External factors cannot be influenced by the company itself (usually). Evolution of financial markets in form of exchange rates, new instruments, interest rates, central bank restrictions as well as political factors such as European integration, subsidies etc. are hardly to be influenced by company itself. Moreover, company's performance is usually sensitive to economic cycles (Synek, et al., 2000).

Afterwards it is useful to find out why the crisis occurred. What is the originator? Synek (2000) highlights three originators that are strategic crisis, economic results, and liquidity crisis (constraints). The occurrence of those problems can be illustrated with figure 2 below.

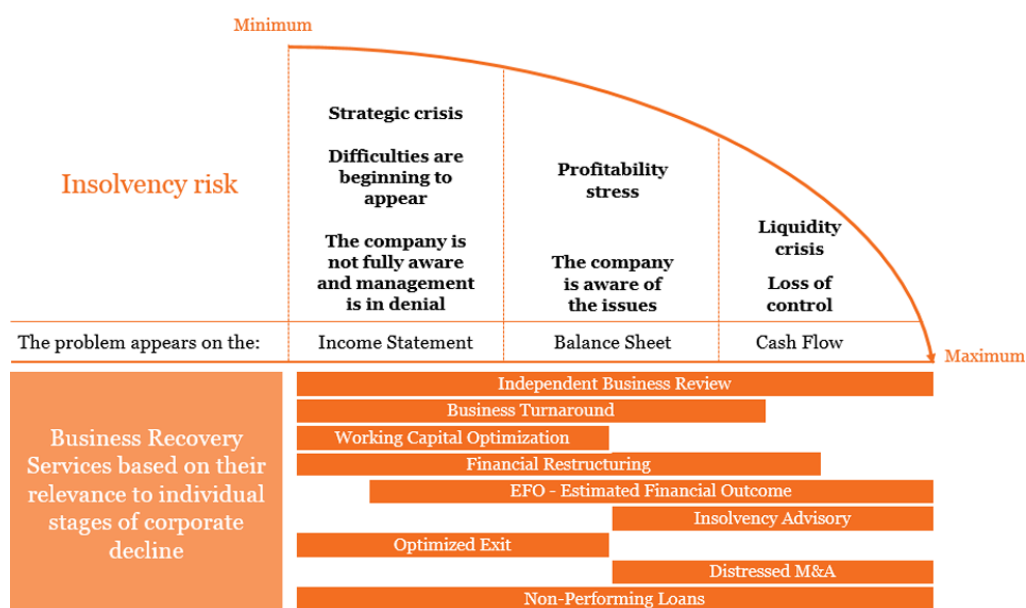


Figure 2 Way to Crisis, source: (PricewaterhouseCoopers Česká republika, s.r.o., 2017)

Once the company enters the insolvency proceedings there are two ways to solve it either bankruptcy or reorganization. There is a whole management discipline focusing on preventing

firms to enter the stage of crisis or help them being reborn called turnaround management. Reorganization is sort of bankruptcy with soft budget constraint.

1.1. Capital structure

Capital structure can be seen from two different points of views. From economic point of view, there are two things supporting usage of debt. Tax shield and financial leverage. Two other reasons restricting the usage of debt that are agency costs and costs of bankruptcy.

1.1.1. Economic implications of debt

There are few incentives for companies to employ debt and few drawbacks as well. By raising the level of debt, current shareholders are not losing control. On the top of that, it is more efficient because interests from debt are tax deductible costs. Although, potential dividends to new shareholders are not. This effect is known as tax shield.

If provided debt helps company to earn more than are the interest costs, surplus is created. The result is profit growth, while the equity remains stable and thus return on equity is multiplied. This effect is called financial leverage.

On the other hand, way too high level of debt can cause financial distress ending with bankruptcy. When cost of debt is eating the bigger part of profit year after year, subsequently banks will deny to provide additional financing so that firm will face financial distress. Then the debt is connected with agency costs, bankruptcy costs and costs connected with information asymmetry.

Above mentioned raises the question what is the optimal debt to equity ratio? What effect on company does it have?

Modigliani, et al. (1958) concluded that the value of firm is not dependent on capital structure, albeit under questionable assumptions as no taxes, efficient markets etc. Modigliani and Miller's theorem of irrelevance says, that it is irrelevant whether the company raise funds via debt or issuance of new shares, the value of company should remain the same.

Afterwards Myers (1984), representing dynamists, propose that there is nothing as a generally applicable optimal capital structure, it varies from firm to firm, industry to industry. What is more, it may change during time depending on evolution and maturity of the firm.

Sole mutual agreement is that optimal capital structure is the one minimizing weighted average of cost of capital, also known as WACC (Synek, a další, 2000).

There are so called “golden rules“. One of them “golden balance financing rule“ that is highlighting importance of timely financing. Long term assets should be financed by equity or long term debt. Another “golden balance equalizing rule“ is discussing the ratio of equity and liabilities to be roughly 1:1 etc. (Kislingarová, et al., 2010 p. 403)

Overall, the debt is both cheaper than own capital and riskier. Managers need to be aware of setting the optimal capital structure.

1.1.2. Asset claims – normal situation

From legal point of view, capital structure matters especially with regards to claims of different stakeholders and their rights for company’s assets. The sequence of rights is important. Richter (2008 p. 73) defines capital structure as following:

$$A_s + A = (L_s + L_g + L_j) + (C_p + C_c)$$

A_s – secured assets

A – unsecured assets

L_s – secured debt (senior debt)

L_g – general debt

L_j – junior debt (subordinated debt)

C_p – preferred stock

C_c – common stock

Assets are divided into secured and unsecured. Debt has many flavors, but for our understanding three subgroups are enough. Debt could be secured, general and subordinated. Equity could be divided into two subgroups. Preferred and common shares.

The main difference is the sequence of settlement of claims when bankruptcy occurs.

- Creditor’s fix rights

Creditor’s claims are fix. Every creditor can demand settlement of its claims. Secured debtholders are first to be satisfied with ring-fenced assets (A_s). Secured assets are ring-fenced from other

creditor's claims. Next in a row to be satisfied is general creditor. Since general debt is not secured with any asset it is called unsecured debt. The last to be satisfied is junior or subordinated debt (unsecured as well). So the sequence of debts to be paid is senior first, general afterwards and junior as last.

- Shareholder's hybrid and residual rights

Slightly different situation applies to shareholders. Preferred shares are hybrid mix of equity and debt financing. If dividends are paid, preferred shares are similar to debt, therefore they are comparable to fix claims. Although, when company is not paying dividends, it is not event of default and preferred shareholders cannot demand the dividend payment. At this point fix claim is converted into residual claim. Residual claim is applicable for common shareholders and they are paid after fix and hybrid claims.

1.1.3. Asset claims – when bankruptcy occurs

How does the right change when event of default occurs? Firstly, the equation is modified to:

$$A_s + A \leq L_s + L_g + L_j$$

We can see that C (equity or capital) disappeared and assets are less than liabilities ($C \leq 0$; $A \leq L$). Not only capital structure is different but rights changed as well.

- Shareholder's null rights

When event of default occurs, shareholder's residual claims are transferred to creditors. Shareholders have no longer any rights to claim the firm's assets, they even lose voting rights.

- Creditor's residual and fixed claims

Secured creditors are now fixed rights bearers and their claims are settled with secured assets. Unsecured creditors are bearing residual rights, so that their claims are satisfied after the realization of secured assets (after secured creditors).

2. Economics of bankruptcy

“When it is a question of money, everybody is of the same religion.” ~ Voltaire

Economic issue in corporate bankruptcy is to reorganize or to liquidate. Filing for bankruptcy is always connected with financial distress. There are two kinds of firms – economically efficient or economically inefficient. Economically efficient firm has the best possible alternative use of its assets bringing the highest value. That is to generate highest revenue for shareholders. Assets of economically inefficient firm could be used alternatively to obtain higher value for owners (White, 2001).

This idea is connected with competitive advantage of the whole firm and its going concern. Economically efficient firms, despite being in financial distress, have specialized assets and knowledge with hardly better alternative to bring higher revenues. “Therefore, to at least temporarily continue operating the firm seems worthwhile, because its revenues exceed its variable costs, even though revenues are less than fixed plus variable costs.” (White, 2001 p. 31).

Financial distress occurs when net present value of cash flow is positive, however liabilities are surpassing this cash flow. In this case it is worth to save the company.

The opposite apply to inefficient firms. Those candidates for liquidation are usually in industries with excess capacity, or using obsolete, thus less efficient technology. Losing competitive advantage is usually connected with unspecialized assets that are valuable in various use, too.

Appropriate bankruptcy proceedings would ease the liquidation of economically inefficient (financially distressed) firms and reorganization of economically efficient (financially distressed) firms. “Saving rather than shutting down efficient distressed firms preserves their value as going concern.” (White, 2001 p. 31).

Nevertheless, it is mostly impossible to distinguish amongst efficient and inefficient firms, especially for managers since they are familiar only with current use of assets.

2.1. Bankruptcy and entrepreneurship

Bankruptcy has immense impact on entrepreneurial spirit of people. USA are considered to be capitalistic idol with the highest number of start-ups and new ventures. It may be partially backed by US bankruptcy legal framework.

In the beginning almost all of start-ups are either unincorporated or very small firms and thus it is important not to stigmatize entrepreneurs with lifelong debt in case of failure. US law is very protective in comparison with continental law. Although, bankruptcy law varies across individual states, in general “individuals and married couples who own small firms can file for personal bankruptcy under Chapter 7 and both the firm’s debts and individual’s personal debts will be discharged.” (White, 2001 p. 40). In essence individuals are not forced to use their post bankruptcy earnings to repay creditors. On the top of that, individual can keep any asset below exemption level.¹ Contrary to incorporated businesses, that are not allowed to keep any assets.

Under this circumstances personal bankruptcy could be seen as certain wealth insurance, too. In contrast the continental legal framework (German, Czech) does not know any exemption level and made the bankrupt individual to use its future earnings to repay the creditor. On the other hand this is connected with different bank rationing process while lending to small businesses or individuals. Overall, studies prove that individuals living in the states with bankruptcy exemptions tend more to be self-employed.

Base on the above mentioned I dare to say that US bankruptcy system with Chapter 7 and Chapter 11 is one of the best in the world from efficiency point of view.

2.2. Post-bankruptcy efficiency

Ex post efficiency neglect the impact of ex ante efficiency, not taking into account actions prior bankruptcy. Worldwide accepted opinion on post efficient bankruptcy proceeding is that it is reasonably long, with low administrative costs and sufficiently high recovery rate. Most importantly the destiny of the firm either liquidation or continuation is taken into account as well.

¹ Exemption levels vary amongst states and usually includes homestead exemption, that could be limited in wealth or not at all (Florida, Texas).

Knot, et al. (2006 p. 7) note that Czech Republic is “lagging behind other industrial economies in all of these measures.”

That was valid in 2006, before the application of new Act on Insolvency (effective since 2008). We will compare the above mentioned indicators worldwide and its evolution through time following The World Bank’s project “Doing Business”.

2.2.1. Distance to frontier

The “distance to frontier“ is The World Bank’s indicator combining all above mentioned facts into one measure in order to ease assessing “the gap between particular economy’s performance and the best performance at any point in time“ (The World Bank, 2017) and thus evaluate the change in the particular’s economy regulatory environment over time.

The scale from 0 to 100 measure the economy’s distance to frontier. With 0 representing the lowest performance and 100 representing the frontier. If the economy’s DTF is 85, it means it is 15% away from the best performance across all economies and across time.

As you can see in table below masters in resolving insolvencies are the most industrially and legally developed countries.

Czech legal framework is basically copy of German code and we often refer to US system as a role model – both of those are amongst the best ones. Czech Republic is a bit behind on 26th place (22nd prior year).

Table 1 Best countries in resolving insolvency based on DTF, source (The World Bank, 2017)

| Resolving Insolvency ranking | Economy | Resolving Insolvency DTF | Time (years) | Cost (% of estate) | Recovery rate (cents on the dollar) |
|------------------------------|----------------|--------------------------|--------------|--------------------|-------------------------------------|
| 1 | Finland | 93,89 | 0,9 | 3,5 | 90,3 |
| 2 | Japan | 93,34 | 0,6 | 4,2 | 92,1 |
| 3 | Germany | 92,28 | 1,2 | 8 | 84,4 |
| 4 | Korea, Rep | 89,22 | 1,5 | 3,5 | 84,5 |
| 5 | United States | 89,19 | 1,5 | 10 | 78,6 |
| ... | ... | ... | ... | ... | ... |
| 26 | Czech Republic | 76,42 | 2,1 | 17 | 66,5 |

Given the evolution of Czech insolvency codification², we can assume that the state of legal framework and its judicial application is rather good.

2.2.2. Duration

Duration has no less importance. The shorter the proceedings the better for debtor and for creditor too. The debtor is not losing its competitive advantage, nor is creditor losing the interest from loans.

Major progress in Czech Republic is observable in duration of proceedings (based on data provided by World Bank³). The proceedings took dreadful 9,2 years in 2004. Nowadays, it take only 2,1 years (2017). For worldwide overview see figure 3, where Czech Republic is marked blue.

Schönfeld, et al (2012) propose that this number is biased due to high number of proceedings terminated due to lack of assets.

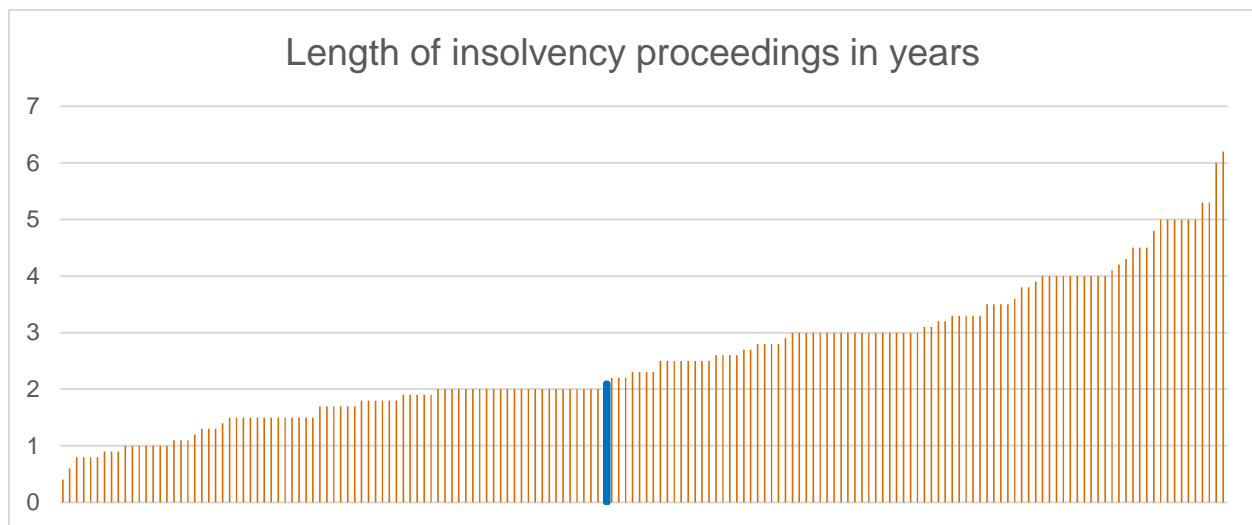


Figure 3 Length of insolvency proceedings worldwide, source (The World Bank, 2017)

Nevertheless, there are countries that are even faster. As you can see in table below. The fastest ones are Ireland (0,4 years) followed by Japan (0,6 years) and surprisingly by post communist Slovenia (0,8 years).

² Evolution is described later.

³ World Bank measures duration as time “from the company’s default until the payment of some or all of the money owed to the bank.” The accuracy and validity of those numbers may slightly misrepresent the reality according to Schönfeld, et al. (2012).

Table 2 Countries with shortest insolvency proceedings, source (The World Bank, 2017)

| Economy | Time (years) |
|----------------------|--------------|
| Ireland | 0,4 |
| Japan | 0,6 |
| Slovenia | 0,8 |
| Canada | 0,8 |
| Hong Kong SAR, China | 0,8 |

For comparison, the proceedings last 1,2 years in Germany and 1,5 years in USA.

2.2.3. Administrative costs

Ex-post efficiency is significantly influenced by administrative costs. The returns realized on assets of bankrupt are intended to repay not only the creditors. As Knot, et al (2006) pointed part of proceedings must be sacrificed to award the bankruptcy (insolvency trustee, the court, independent assessors, lawyers, accountants etc.

Administrative costs in Czech Republic swallow 17% of debtor's estate that could be still considered as a significant part. Especially when compared with leaders in Europe, as seen in table below. For worldwide overview see figure 4, where Czech Republic is marked blue..

Evolution of costs in Czech is mainly stable since 2004 with small deviation in the period 2006-2010 when the cost of estate was only 14%.

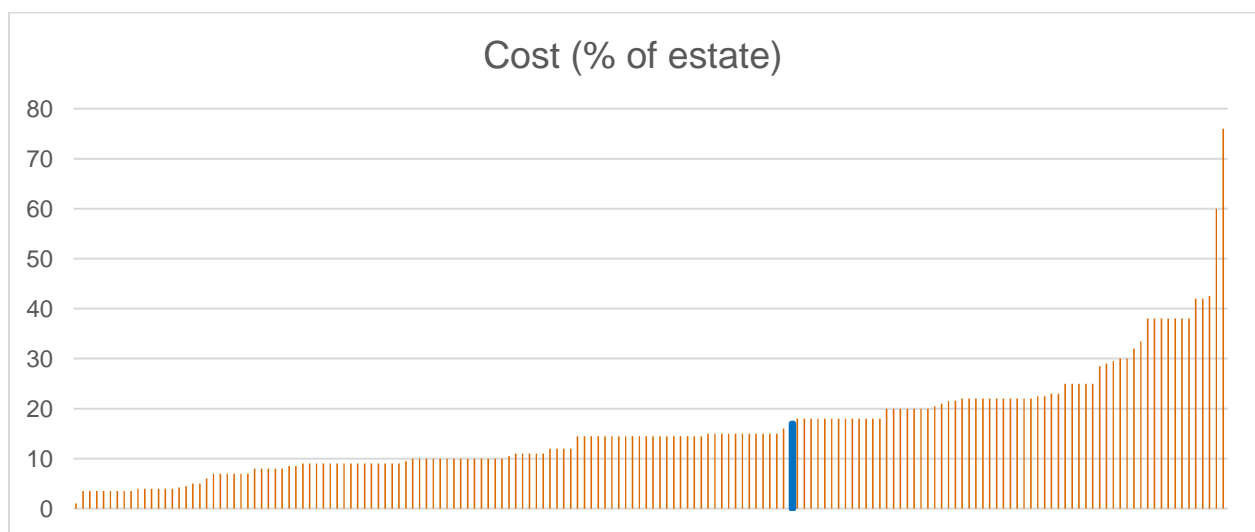


Figure 4 Costs of insolvency proceedings worldwide, source (The World Bank, 2017)

The least costly economy is Norway (1%), followed by Finland, Belgium, Iceland and Netherlands (3,5%) whose cost of estate seems incredibly low. German's 8% and US's 10% seem to be more reasonable.

Table 3 Countries with the least costly insolvency proceedings, source (The World Bank, 2017)

| Economy | Cost (% of estate) |
|-------------|--------------------|
| Norway | 1 |
| Finland | 3,5 |
| Belgium | 3,5 |
| Iceland | 3,5 |
| Netherlands | 3,5 |

Proceeding is meaningless if the cost for creditor to collect its claims are higher than potential gains (Schönfeld, et al., 2013). In such case creditor would rather opt for straight-bankruptcy. Realization of assets or liquidation of debtor would bring the higher value. Especially prudent secured creditors as banks with secured loans may loose (limit) their surveillance to a certain extent and subsequently when bankruptcy occur they would force debtor towards liquidation. It is the cheapest and frugal way to recover the claims when the cost of estates are unreasonably high.

2.2.4. Recovery rate

There are two preconditions when bankruptcy proceeding may still bring desired returns to creditors despite being lengthy and costly. Knot, et al (Knot, et al., 2006 p. 11) define them as:

- “the declaration of bankruptcy does not come too late so that the value of the firm’s assets in the beginning of the procedure still represents a reasonable portion of the firm’s debt and
- the work of the judges, trustees, assessors etc. Is efficient so that the payment of administrative cost is worth it.“

The current recoverability of claims in Czech Republic is 66,5% (66,5 cents from every dollar) which is again major improvement compared to 15,4 in 2004 and again behind European leaders.⁴ For worldwide depiction see figure 5 in which Czech Republic is marked blue. Improvement is

⁴ Recovery rate calculate the recovery of secured creditors (Doing Business).

connected with new Insolvency Act that impose the responsibility for management to file for bankruptcy even though the bankruptcy is impending (*Czech term skrytý úpadek*, de facto used when liabilities are exceeding assets). Subsequently firms are entering bankruptcy with valuable assets and thus recovery rate improved (Schönfeld, et al., 2012).

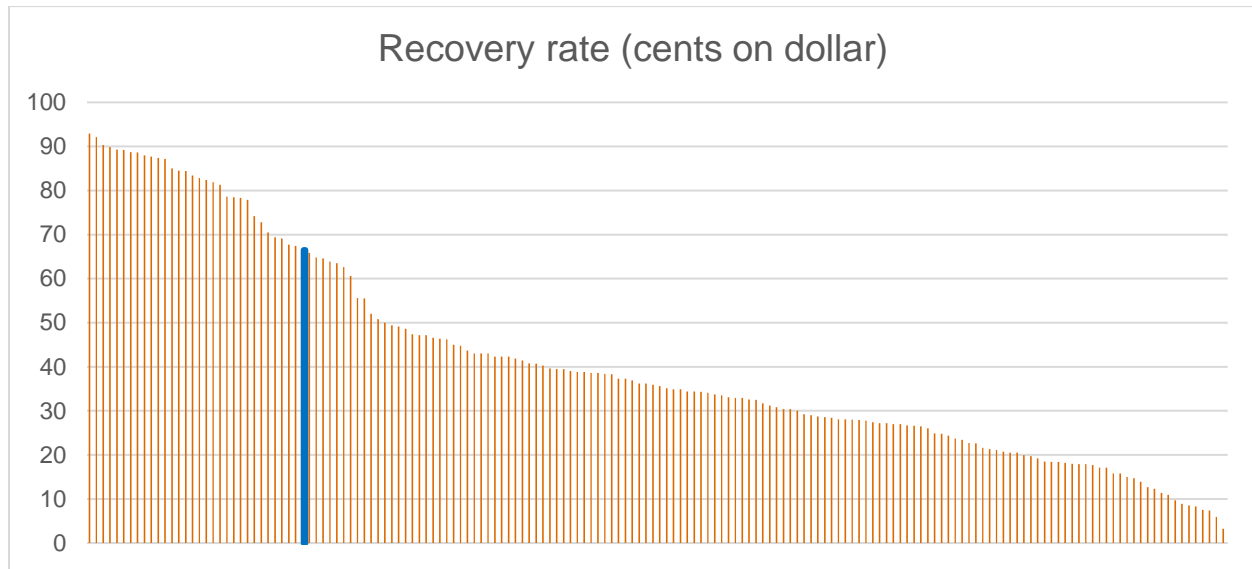


Figure 5 Recovery rate from insolvency proceedings worldwide, source (The World Bank, 2017)

Based on World Bank's estimation of recovery rate measured in cents recovered from every dollar "invested" the most efficient countries are Norway (92,9), followed by Japan (92,1), Finland (90,3) Belgium (89,9) and Netherlands (89,3). Our model economies are right behind with recovery rates of 84,4 and 78,6 for Germany and USA respectively.

Table 4 Countries with the highest recovery rate from insolvency proceedings, source (The World Bank, 2017)

| Economy | Recovery rate (cents on the dollar) |
|-------------|-------------------------------------|
| Norway | 92,9 |
| Japan | 92,1 |
| Finland | 90,3 |
| Belgium | 89,9 |
| Netherlands | 89,3 |

Question would be what is the difference between secured and unsecured creditors, since Schönfeld, et al. (2012) stated that secured creditors (mostly banks) in Czech Republic usually recover 80% of their claim. The opposite applies to claims arising from trade that is – unsecured debt. Recovery rate of unsecured debt is approaching zero.

Following the common sense and confirmed by data the relationship of three above mentioned measures is quite straightforward. The longer it takes, the more costly it is and the lower recovery of claims is (Janda, et al., 2014).

Regression analysis⁵ run by Schönfeld, et al. (2013) is showing us undermentioned relationship.

$$Proceedings (Recovery) = 101,62 - 8,62 * lenght - 1,95 * costs$$

2.2.5. Liquidation or continuation

The question is to be or not to be. In other words liquidate or continue? Continuation should be preferable way in order to preserve the value. Liquidation is always connected with awkward social impact and therefore the decision making may be biased. As Knot, et al. (2006) noted it is country-specific and empirically proven. Certain countries tend to liquidate the firms even though it is not the best solution, however the others tend to over-continue. Before current Insolvency Act (hereinafter IA), valid since 2008, system in Czech Republic was biased towards the liquidation (almost 99,9%) mainly due to legal framework (Knot, et al., 2006). Before recodification, there were only two alternatives:

- bankruptcy (*Czech term konkurs*) – process towards liquidation
- composition (*Czech term vyrovnání*) – process towards continuation.

Nevertheless, filing for composition was dependent on creditor's agreement. On the top of that, unsecured creditors must have been paid 30% of claims and similarly other creditors must have been certain part of claims – that was almost impossible for financially distressed firm.

Expected change occurred after recodification in 2008. Richter (2011) find out that reorganization is nowadays more viable option. 19 reorganizations were allowed during first 2 years of new IA compared with 48 compositions for 15 years of old Act on Bankruptcy and Settlement (hereinafter ABS).⁶

⁵ Run on data from Doing Business 2012 for OECD countries

⁶ For profound description of new IA refer to chapter about Insolvency Act.

Table 5 Evolution of insolvency proceedings in numbers in Czech Republic for period 2008-2017, source (Creditreform s.r.o., 2017)

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Petitions filed ⁷ | 3 418 | 5 255 | 5 559 | 6 753 | 8 398 | 6 021 | 3 563 | 3 004 | 2 438 | 1 141 |
| Straight-bankruptcies | 1 141 | 1 553 | 1 601 | 1 778 | 1 899 | 2 224 | 2 403 | 2 191 | 1 982 | 933 |
| Reorganizations | 6 | 13 | 19 | 17 | 17 | 12 | 31 | 15 | 27 | n/a |

Overall, any kind of reorganization would not be possible without entrepreneurial stimulation in a form of change in management, change in economic development of markets etc. (Schönfeld, et al., 2013).

2.3. Goals of bankruptcy

“The concept of bankruptcy evolved far from its etymological roots in medieval Italian custom (banca rupta meaning “broken bench“)” (Stiglitz, 2001 p. 3).

Hart (2000) noted 3 goals of bankruptcy procedures. Firstly, the bankruptcy procedure must bring maximizing effects of firm’s value. No matter the outcome whether it will be closure of firm and piece-meal liquidation or reorganization or sale for cash as going concern, the goal is to generate maximal value measured in money to satisfy creditors, debtors and other innocent bystanders (e.g. workers, government).

- “Ceteris paribus a good bankruptcy procedure should deliver an ex post efficient outcome“ (Hart, 2000 p. 4)

Second goal is connected with ex-ante efficiency. Raising funds mean commitment to the future. If that commitment is not fulfilled, the breach must be punished. The form may vary amongst different stakeholders. Shareholders claims may wipe out and managers may be redundant. Without inimical consequences there would not be any incentive for debtor to pay its debts.

- “A good bankruptcy procedure should preserve the bonding role of debt by penalizing managers and shareholders adequately in bankruptcy states“ (Hart, 2000 p. 5)

⁷ Tabulated detailed overview of bankruptcies in Czech Republic includes bankruptcies of firms only. Please note, that it is possible to file multiple petitions for one entity. Data for 2017 are only for half year (Creditreform s.r.o., 2017).

Absolute priority of claims⁸ ensure that creditors will receive reasonable return and keep lending business alive. While sticking to priority of claims we should think about shareholders as well. Although, receiving nothing will encourage debtor's management to do everything possible to avoid bankruptcy. That is delaying bankruptcy petition filing or taking highly risky investments.

- “A good bankruptcy procedure should preserve the absolute priority of claims except some portion of value should possibly be reserved for shareholders“ (Hart, 2000 p. 5)

Stiglitz (2001) argue that debtors (shareholders) should be given something even though creditors are not fully satisfied. Doing so may be beneficial because it “(a) improve risk sharing, (b) may reduce the “ignorance wedge,” (c) may improve effectiveness of self-selection, (d) typically improve the efficiency of resource allocations after bankruptcy, if the debtor-manager has some advantage in managing the resources, and (e) reduce the prebankruptcy diversion of income from bankruptcy states to nonbankruptcy states.“ (Stiglitz, 2001 p. 13).

⁸ Meaning that senior debt is paid first, then junior debt and shareholders are last ones to get paid.

3. Agency theory and soft budget constraint

“The chaos is a ladder.” ~ Petyr Baelish

One of the “oldest and commonest codified modes of social interaction“ (Ross, 1973 p. 135) is relationship between two or more parties known as agency theory.

3.1.1. Agent vs principal relationship

The agency relationship is described as “principal - agent“. This relationship may be characterized as delegated decision making. Shleifer, et al. (1997 p. 740) see “the essence of agency problem in separation of management and finance or – in more standard terminology – of ownership and control.“

The principle of such relationship is that agent acts “for, on behalf of, or as representative for the other, designated the principal, in a particular domain of decision problems.“ (Ross, 1973 p. 134).

Wider Jensen, et al. (1976 p. 310)’s definition is “We define an agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent.“.

Principal agent relationship could be seen in many areas. Since 1976, when theory was published it was observed in corporate governance, finance, management, marketing, insurance, accounting, sociology and politics. The aim of this theory is to answer what are the goals of participants and agents in agency contracts or alike situations.

More precisely such situations could be find in everyday life. The most often noted situations are:

Stockholder vs. manager – stockholders hire the managers to run the company in order to maximize the value of shares or share on profit and gave them the right to treat the assets likewise.

Minority stockholder vs. majority stockholder – minority shareholder has in fact no decision making power, therefore it is the majority shareholder who is entitled to appoint board of directors and set the goals of the company. Minority shareholders rely on majority shareholder to act in best interest of all shareholders.

Employer vs. employee – employer hires the employee in order to execute certain task and entrust them with firm’s assets such as machines, computers etc. Employers are expecting the adequate performance of employee.

Lender vs. borrower – lenders are entrusting borrowers with their assets (money) and are expecting them to pay interest and repay the notional at predetermined date. This situation is closely related to bankruptcy theory.

Other common situations are voter and deputy, patient and doctor, client and lawyer, insured and insurance company (Marek, 2007).

It is more than obvious that such relationship is connected with significant clash of interests. As Jensen, et al. (1976 p. 310) state “If both parties to the relationship are utility maximizers, there is good reason to believe that the agent will not always act in the best interests of the principal.”.

3.1.2. Agency costs

As a subsequence of decision making power delegation there are arising cost called “agency costs”.

Loss arising from agent diverging from the aim of principal have four main reasons:

1. Fraudulent behavior of agent
2. Overconsumption of agent
3. Incompetence of agent
4. Indifference of agent

Firstly, fraudulent behavior may have various forms. Starting with very simple ones such as managers being paid and invoicing management fees as well on the account of their close relatives or construction company repairing the office and CEO’s house at a same time at the expense of company. Going to complex ones as cyclic holding⁹ where management can basically stole the company.

⁹ Cyclic holding is a holding where it is not clear or hard to determine which company is the parent one, therefore is not clear who is ultimate owner. Many of those cases are traceable in post soviet republics especially in Czech Republic, where similar technic based on “removing assets through underground tunnel” (Johnson, et al., 2000 p. 22) was firstly described as “tunneling”.

Secondly, overconsumption consisting of using more expensive services than necessary. For example management leasing expensive Mercedes-Benz limousine instead of cheaper option or organizing board meeting at sea golf resort instead of in the office.

Finally, the difference in firm's market value made by competent or incompetent agent resulting in loss is representing agency costs as well. It is necessary to distinguish between incompetence and indifference. On the one hand there is competent who is indifferent to economic results, on the other hand there is incompetent manager who is sensitive to economic results. It is hard to answer the question which one is better (Marek, 2007).

Jensen, et al. (1976 p. 310) define agency cost as sum of following.

- The monitoring expenditures by the principal
- The bonding expenditures by the agent
- The residual loss

In order to limit divergences principal should establish appropriate incentives for agent and thus bear monitoring costs designed to diminish aberrant activities of agent. Monitoring activities may consist of yearly audits or quarterly reviews and making those information open to shareholders.

To prevent agent taking certain actions that would harm the principal, it will pay the agent to expend resources. Those are known as bonding costs. They can be in form of non-compete agreement or license.

Residual loss is defined as “The dollar equivalent of the reduction in welfare experienced by the principal as a result of this divergence is also a cost of the agency relationship, and we refer to this latter cost as the “residual loss”.” (Jensen, et al., 1976 p. 310).

3.2. Agency theory models

In all possible situations there will be information asymmetry between principal and agent. Information asymmetry may create chaos. Both counterparties are entering mutual relationship by signing contract at a certain time. Each of them have different information available about their counterparty at that time. This approach deny the assumption of same information available to everyone based on perfect competition.

Models of the agency theory could be divided by nature of information asymmetry into three categories moral hazard, adverse selection and signaling models (Janda, 2006).

3.2.1. Moral hazard models

In model known as moral hazard, information asymmetry occur ex-post. Private information is at agent's disposal after the signing of the contract. In other words after the signing of the contract agent can change his behavior in a way that is unfavorable for principal and still unknown to the principal (Janda, 2006).

Probably the best description of such situation are people who tend to behave riskier once they are insured. Similar behavior could be find in loan market as well. Entrepreneur (agent), having no wealth of his own, borrows money from a bank (principal) to run one shot investment project. Information about profitability of the project is available only to the entrepreneur and thus entrepreneur has information advantage. It is almost impossible for bank to oversee outcome of the project and therefore entrepreneur is faced with moral hazard problem whether he should report the true outcome or not.

As Janda (2006 p. 5) states "As long as the principal has no mechanism available for rewarding or punishing the agent, the rational agent would always announce that the project failed. Therefore the agent would never repay back to principal.". As a consequence in rational world banks would never lend the money to the entrepreneur until they have a possibility to control the outcome of project.

To prevent this situation collateral or insurance is required by lenders. Although, this form of protection is connected with fix verification costs that are borne by agent.

Obviously principal has a possibility to find out the real outcome of project, but it is connected with additional fixed verification costs. Therefore desired optimal debt contract would minimize expected verification costs as it is the only source of social inefficiency. Optimal debt contract solving this issue is called standard or simple debt contract and it is characterized by the face value set at the beginning to be repaid by agent. This way principal does not have to search for project's outcome as long as the agent pay the face value.

3.2.2. Adverse selection models

There is ex-ante information asymmetry between the counterparties. Private information is at agent's disposal before signing off the contract, however principal is not aware of it. If principal would have had the information he would not have entered the contract.

However, this term was probably best described by Akerlof's (1970) "Market for lemons". Akerlof used car market as an example for information asymmetry. Seller is an agent aware of real condition of car to be sold, on the contrary buyer unfamiliar with real condition is in position of principal.

Similar condition applies to loan market. Borrower has always information advantage. If lender would have same information as borrower at the time of loan, it is possible that the money would not have changed the hands. Lenders are usually aware of unfavorable information asymmetry, therefore they require guarantees. Collateral and insurance are provided by borrower to lower the adverse selection risk.

3.2.3. Signaling models

In this kind of models agent may reveal private information through the signal sent to principal. The aim is to distinguish himself from other agents and influence principal's decision. For example when there is a tender, agent may reveal information concerning his opponents to be more appealing and thus win the tender (Janda, 2006).

3.3. Soft and hard budget constraints

One of the application of agency theory is the concept of soft budget constraints (hereinafter SBC) and hard budget constraint (hereinafter HBC). We can illustrate this concept on example with two companies with different budget constraints.

First company is under HBC and has strictly given budget constraint. This company is covering its expenses from profit or retained earnings. In a case that expenses are higher than revenues the business unit is making loss. In HBC regime company does not obtain any help from any other supporting institution. Company either cover the expenses by itself or cease to operate the business.

However, the different situation occurs under SBC regime. In case that company is unprofitable there is supporting organization, whoever it is, that may help to cover the loss. Although, there is a risk of undesired behavior of company under SBC. SBC may stimulate management of the company to realize unprofitable or highly risky projects knowing that there is supporting organization to rescue the company (Janda, 2009).

“We treat the terms “support“, “rescue“ and “bailout“ as synonymous actions to avert financial failures.“ (Kornai, et al., 2003 p. 1097).

SBC regime is observable not only within private but public sector, too. As one can guess this syndrome was described on example of soviet countries (Kornai, 1979). In soviet era, the era of shortage, companies were typically state owned, since private ownership was forbidden as well as bankruptcy. Albeit, the goal of company was still making profit, lot of them were loss making due to centrally planned economic decisions. State was always there to give companies a hand and thus help them survive (Kornai, et al., 2003).

Similar syndrome prevail even in the capitalism era. Indebted local municipalities can frequently rely on rescue from government. Additionally, deficit of non-profit organizations such as hospitals, universities are usually covered out of state budget (Kornai, et al., 2003).

With regards to corporate sphere, during 90s, after privatization, governments were subsidizing loss making, privately held, companies. This phenomena is still used in certain industries or areas (Kornai, et al., 2003).

Motives of the supporting organization (state in this case) may vary. Could be linked to lobbying or due to the fact that states have interest in preserving or supporting certain industries. With development of European Union subsidies are flowing mainly into agriculture. In 2007 in the US government played the role of supporting organization and helped out (bailed) American banks with additional financing. Government was buying bank's shares and thus providing them with additional liquidity to survive when interbank market froze. During recent years renewable energy sector experience massive boom boosted by subsidies not only in Europe, but also in USA. Subsidies are widely used to support wind mills, solar energy as well as sales of electric cars. All those businesses would be insolvent and went bankrupt at certain point in time without additional support.

When debtor is insolvent, creditors have also the choice to apply SBC or HBC approach. On the one hand creditors may chose the HBC approach, therefore not helping the debtor. As a result, debtor not being able to pay his debts will end up in bankruptcy. Debtor's business will be shot down and creditor's claims will be satisfied by proceeds of realization of debtors assets. On the other hand creditors may choose SBC approach and allow debtor to renegotiate new financing or reorganization of the whole company with certain parts of debts being pardoned.

SBC approach is ambiguous. Partially it may motivate debtor's irresponsible riskier behavior, but it may as well lead to better outcome for creditors. Usually, when bankruptcy occurs, assets are not enough to satisfy all the claims, therefore part of claims is written off. Creditors suffer a small loss, but they may gain profit from potential future business with debtor (under assumption that debtor will continue its business).

3.4. Bankruptcy with soft budget constraint

The prevailing idea in SBC literature is that hardness is good and softness is bad, therefore creditors should insist on bankruptcy. This approach is questionable. Furthermore, Janda (2009 p. 340) proved that "renegotiation and debt forgiveness in some cases improve welfare to the strict liquidation of a defaulting firm".

In addition, the possibility to renegotiate new financing increases utility of borrowers, but the utility of lenders remains same. In case that lender nor borrower are able to enforce complete contracts the SBC is welfare enhancing (Janda, 2004). On the top of that, renegotiation does not preclude the use of collateral as screening device to balance information asymmetry (Janda, 2009).

SBC seems to be suitable for credit markets as well. According to Bonin, et al. (1999) in order to improve efficiency of credit markets it is convenient to apply lenient bankruptcy procedures.

Although, the opposite apply to economies in transition. For those HBC is seen as condition leading to successful transition to market economy. Many economies in transition are changing their legal framework towards American alike as it is considerably the most successful one (Janda, 2004).

4. Legal Framework of bankruptcy

“A bankruptcy judge can fix your balance sheet, but he cannot fix your company.”

~ Gordon Bethune

Despite the current trend of degovernmentalisation of bankruptcy procedures the role of the state is to provide with fine legal framework.

4.1. Absence of bankruptcy law

Bankruptcy law is evidently needed not only in developed countries. In case that debtor is not able to pay his debts, creditor has usually only two legal ways to get the money back. (Hart, 2000).

First case is related to secured loans, where creditor can seize the collateral, usually debtor's assets, and thus recover the claim. Different situation arrive in case of unsecured loans, where the creditor's only lawful way is to “call on the court to sell some of the debtor's assets“ (Hart, 2000 p. 2).

The problem starts when the debtor's assets are not enough to cover his liabilities or when there are more debtors. Clearly, each debtor would be eager to cover his own claims first. That would lead to dispute amongst creditors trying dismantle the firm's assets resulting in loss of value for every stakeholder. That is why the bankruptcy law is needed.

4.2. Design of optimal bankruptcy law

Given the complexity and diversity of all legal systems around the world there cannot be one bankruptcy law suitable for all of them. However, there are certain concepts that might at least define optimal legal setup.

The origins of modern bankruptcy laws lies in the theory of incomplete contracts. Incomplete contracts do not specify what should be done in the event that borrower cannot meet his obligations. Often repeated reason why is that it would be very costly. The costs of complete¹⁰

¹⁰ Complete contract – fully specifying what should be done at every event.

contract may be prohibitive. If mankind would be able to conclude complete contracts the bankruptcy would not be needed (Richter, 2008).

SBC is quite demanding in the area of legal framework and even more in fast and efficient legal proceedings. All over the world bankruptcy laws are different not only in construction but also in efficiency and impact that they have on creditors and debtors. This situation raise question whether there are superior bankruptcy laws or not. In order to decide which one is better the goal of such a law must be defined. As Knot, et al. (2005 p. 111) pose two questions “Do we really need a bankruptcy law? And if yes why do we need it?”

The question why was partly already answered. Apart from that, the bankruptcy law should clarify whether the aim should be to maximize profits by shutting down inefficient firms or not. Shifting free resources towards more efficient use is economically reasonable, however not socially optimal solution. Alternative solution is to prefer short-term goal in form of social welfare that is maintaining employment.

If debtor have a possibility to negotiate off the court solution with their creditors is there really a need for bankruptcy law? Common answer is yes it is. In case of failure with multiple creditors, there is a possibility that not all the claims will be satisfied. Not all the creditors have same power to negotiate with debtor and therefore the claims might be satisfied unequally.

With multiple creditors and with not enough assets to justify them all, there is a need of bankruptcy law in order to protect creditors that did not became creditors from their will. Besides small or weak creditors there are another ones such as government, tort claimants or tax authority.

We can divide bankruptcy laws amongst tough and soft. The difference is the possibility of debtor to maintain control over insolvent company. In soft regime debtor is preparing reorganization plan that is to be approved by creditors, however under certain conditions not the whole class of creditors is needed.

US bankruptcy is considered to be soft due to the chapter 11. The opposite are German or British codes that are considered to be tough. Czech Republic is a strange mix. De iure Czech code is considered to be tough, however de facto debtors can maintain control by taking advantage of various flaws.

When forming bankruptcy law it is important to consider possible ex-ante and ex-post effects. Ex-post socially optimal would be to leave debtors management in control because they might have the best information what to do with a firm. This approach may collide with maximizing the market value of firm.

The ex-post efficient soft bankruptcy law can bring ex-ante positive effects too. Creditors are motivated to monitor the debtor. Since debtors management in soft bankruptcy can remain control over cash flows and have nothing to lose. Debtor's management can choose the "all or nothing" way of reinventing the firm connected with high probability of default.

Knot, et al. (2005 p. 115) back the opinion "that negative ex-ante effects of a soft bankruptcy law prevail over the positive effects."

The tradeoff between ex-ante negative effects and ex-post positive effects is affected by various factors.

4.2.1. Institutions

The difference between soft and hard bankruptcy law could be completely eliminated by the judicial system. The question is about whether the decision making powers should be granted either to the judges (courts) or to creditors.

On the one hand, creditors are de facto owners of the firm's assets. That speaks for them to be in charge. Although, certain disputes amongst secured and unsecured creditors may appear. Moreover, creditors may not opt for socially optimal solution. They would favor liquidation or sale of the whole company to the third party.

On the other hand, the judge is in the role of agent and he might be too benevolent towards debtors. Besides the character judge's capacity to understand various simple and complex economic tasks may be limited, too.

As Richter (2017b) point out this is the biggest problem of current state of affairs in Czech Republic. Nevertheless, the reformed Czech code is compliant with the view of The Washington Consensus¹¹ on bankruptcy. The problems connect with bankruptcy proceedings in Czech

¹¹ The Washington Consensus gives the view on ideal set up of various economic tasks.

Republic arise during the execution (application) of the code. The issue is not only the incompetence of judges but also the pace of court proceedings. If the firm have specific competitive advantage the entrepreneur cannot afford the luxury of doing nothing and let the value of the firm deteriorate.

4.2.2. Judicial corruption

The role of judge is to be “either just an enforcing mechanism or a benevolent agent who maximizes social welfare.” (Knot, et al., 2005 p. 120).

If judge is granted with decision making powers he might became target of certain interest groups that would like to bias the final decision. Creditors and debtors are not the only fishes swimming in bankruptcy tanks. Apart from them, there are also uninvolved individuals who would like to profit from the outcome of bankruptcy proceedings.

Biais, et al. (2002) highlight the social costs of liquidating the company and not using its specific capital, however in the presence of high judicial corruption tough law is socially preferred.

The lamentable condition of Czech judicial system states for tough bankruptcy law. Generally in Czech Republic judges are not capable to understand economics of firm. As Richter (2008) observed, it seems like part of judges is living in vacuum, they strictly follow legal procedures without any reflection of firm’s life. Moreover, the courts are slow and highly influenced by corruption.¹²

4.3. Czech legal framework concerning bankruptcy and insolvency proceedings

The current insolvency act of the Czech Republic is based on German civil law, however elements of US Chapter 11 were adopted as well. That is why they have common features. The modern era of insolvency in Czech Republic started after 1989, because before, in the age of centrally planned economies, no insolvencies were accepted (Richter, 2011).

¹² This was revealed to me in a dream.

4.3.1. USA – role model of rescue culture

Recently bankruptcy procedures around the world have predominantly moved toward adopting US Chapter 11-type proceedings e.g. Australia, Indonesia, Thailand, UK (Stiglitz, 2001). Therefore it is suitable to briefly introduce the insolvency proceedings in USA.

In the US, file for bankruptcy is initiated either by debtor or creditor. Afterwards, it depends whether Chapter 7 or Chapter 11 is applied. In other words whether the firm is to be liquidated or reorganized.

Application of Chapter 7 means that bankruptcy trustee (appointed by bankruptcy judge) is expected to close the firm and realize its assets. Realization is in form of auction and proceedings are used to settle creditor's claims.

The advantage of secured creditors is to be paid off from secured assets (collateral). Proceedings from unsecured assets are used to settle other creditor's claims. Moreover, there is specific order in which the creditors are paid off. First in line are judge and trustee followed by wages, taxes, debt to government agencies and last crumbs are left for unsecured creditors (Brealey, et al., 2011).

Application of Chapter 11 brings certain protection to the debtor. The aim of Chapter 11 is to rescue the firm. That's why it is considered debtor friendly and that is the origin of so called "rescue culture".

Reorganization plan is to be developed and subsequently approved by committee of creditors. The plan is basically creditor's agreement about who gets what in exchange of claims. Once the plan is fulfilled the continuous firm is considered to be new legal entity.

In order to avoid bankruptcy proceedings, firms may seek agreement with creditors and negotiate a settlement, or workout.

As Brealey, et al. (2011 p. 837) aptly note "The purpose of Chapter 7 is to oversee the firm's death and dismemberment, while Chapter 11 seeks to nurse the firm back to health."

4.3.2. Evolution of bankruptcy law at Czech lands up to present

Due to the evolution of Czech Republic as a country we can divide the evolution of bankruptcy law amongst three times periods. Before 1964, from 1964 till 1989 and after 1989.

Insolvency in Czech lands was firstly addressed by Josephinian Bankruptcy Order in 1781. Main drawback of this first enactment was its lengthiness and expensiveness.

The attempt to modify Bankruptcy order occurred in 1868. Even though recodification did not bring expected results it was not replaced until 1914, when revision occurred and was valid till 1931. New recodification was needed due to unification of Czech and Slovak law at that time (Janda, et al., 2014)

After 1948, with the beginning of communist reign, new era of completely different economic ideology started. Socialists ban private ownership and companies were socialized. As a result all companies “lost their autonomy and independence – they were established administratively and in the same way they were liquidated“ (Janda, et al., 2014 p. 3). Act from 1950 (No. 142/1950 Coll.) replaced the act of 1931 and introduced the institute of an executory liquidation, a remodeled variation of bankruptcy. With centrally planned economy and no private ownership the difference between creditor and debtor was de facto formal. As a consequence it did not take heed of underlying economic conflict of interest. Socialists did not allow any bankruptcy of the company but only formal rearrangements of its assets.

The old codification became obsolete after velvet revolution in 1989. With newly established market economy the need for new legal framework intensified. Finally in 1991 ABS entered in effect. In the meantime, between 1989 and 1991 over indebtedness was handled by Civil Procedure (No. 99/1963 Coll.) (Venyš, 1997). The amendment of law was convenient as the number of bankruptcies exploded in the period 1992-1996. Bankruptcy filings went from 353 in 1991 to 2996 in 1996. Due to various deficiencies in bankruptcy law more than half of those cases stranded at court. In 1996, 4887 out of 8680 filings were still ongoing proceedings. Amongst those reasons we count insufficient level of training and experience of court officials and their inability to handle bankruptcy proceedings. On the top of that politicians were experienced alike and afraid of failure of banking system undergoing crisis (Janda, et al., 2014). ABS was amended 26 times.

Main shortcoming of ABS were the possibilities to solve disputes. They were only two. Namely straight-bankruptcy, consisting of realizing the bankrupt’s assets or settlement procedures. There were no other options to manage bankruptcy. Moreover ABS deals only with bankruptcy of legal entities in the form of individuals and firms. ABS was not suitable for large companies only for small and medium – sized ones. Frequently experienced obstacles were long – running proceedings

and unfavorable position of debtors who were under protected in comparison with overprotected creditors.

Natural persons were not included in insolvency proceedings¹³ until new IA (No. 182/2006 Coll.) was adopted and became effective on 1st January 2008. New IA completely changed the insolvency proceedings from legal point of view (Richter, 2011).

Although, as Schönfeld, et al. (2012) emphasize bigger involvement of economists would be advantageous, since the economic debate about the insolvency proceedings did not precede the creation of new IA.

The last amendment is valid since 1st July 2017. The main goal of amendment is to fasten the proceedings and to protect the victim¹⁴ before groundless bankruptcy filings often used by so called “insolvency mafia”¹⁵.

4.4. Insolvency proceedings according to Insolvency Act (No. 182/2006 Coll.)

In this chapter the process of insolvency proceedings base on new IA will be described. As the object of this thesis is to describe bankruptcy of a firm, attention will be paid to bankruptcies of incorporated businesses only.

4.5. Reasons for bankruptcy

IA differentiate amongst bankruptcy (already occurred) and impending bankruptcy. Impending bankruptcy is potential future situation, however bankruptcy is current situation. Originators of bankruptcy are two. The firm is either insolvent or over indebted.

4.5.1. Bankruptcy due to insolvency

¹³ New insolvency regime for non-business debtors in form of discharge of debts (*Czech term oddlužení*) (Richter, 2011)

¹⁴ Victim in this case could be either debtor or just firm that is object to groundless and artificial insolvency petition file

¹⁵ Insolvency mafia is organized group of people (sometimes insolvency judge or trustee participate as well) aiming to influence insolvency proceedings in order to overtake the firm or to gain from insolvency proceedings.

Insolvency is a result of cash shortage. It may appear all of sudden, for example when customers are paying late and it may be solve as quickly as it appeared. The solution might be short-term loan, overdraft, or factoring.

According to law¹⁶, insolvency is defined as situation where firm:

- has more than one creditor
- has financial obligations more than 30 days overdue
- is not able to pay its liabilities

First two criteria are easily to be met. I dare to say that every normal firm has more than one creditor. Usually firm has suppliers, employees, rented premises etc. Moreover, late payment can occur in a case of malfunctioning accounts payable department. The invoice may get lost, the payment may be processed late etc. Therefore most important is last criterion that is further defined by law as well.

Richter (2017a) note that in case of liquidity constraints company needs cash infusion. From legal point of view this is not bankruptcy. Although if cash infusion will not happen it may be needed to start insolvency proceedings.

4.5.2. Bankruptcy due to over indebtedness

Richter (2017a) note that economic distress occur when net present value of firm's assets is negative. Over indebted may be only entrepreneur (legal entity or an individual). Over indebtedness is defined by law¹⁷ and occur when:

- debtor has more than one creditor
- sum of debtor's liabilities exceed its asset's value

As mentioned above multiple creditors criterion is easy to meet. Although the second one should be observable from financial statements. According to law property is compared to all liabilities.

¹⁶ § 3 of IA

¹⁷ § 3 of IA

Not only due, but due in the future as well. Taking into account only due liabilities the firm may not appear to be over indebted.

Another issue is value of property. Valuation occurs at the date of purchase, therefore in historical prices, however the market value might differ. Value of property may be understated, and as a result firm appear to be over indebted (Landa, 2009).

4.5.3. Bankruptcy due to impending insolvency

Problem of impending insolvency is newly introduced within Czech insolvency proceedings. It is a consequence of management's knowledge about firm's health and its lenient reaction.

If it appears obvious that the firm will not be able to pay its financial obligations, it is impending bankruptcy.¹⁸

4.6. Insolvency proceedings and its bodies

Insolvency proceedings highly relies on its bodies and their behavior.

4.6.1. Bodies of insolvency proceedings¹⁹

Essential subjects of insolvency proceedings defined by law²⁰ are insolvency court, debtor, creditors, insolvency trustee, public prosecutor's office and liquidator.

- Insolvency court

The insolvency court has decision making and supervisory role²¹. It is supposed not only to issue decisions, but also to supervise the activities of subjects participating in insolvency process and process itself as well.

As Richter (2008) notes it is important for judge to understand the economic substance as well as the legal one. According to IA, contrary to ABS, court compulsorily announce new insolvency proceeding.²²

¹⁸ § 3 of IA

¹⁹ § 9-70 of IA

²⁰ § 9 of IA

²¹ § 10 of IA

²² The easiest way to access insolvency register is online via <https://isir.justice.cz/isir/common/index.do>

- Debtor

The position of debtor (legal entity or individual person)²³ has significantly changed with new code (IA). The change occurs in line with the idea of “rescue culture”.

On the one hand debtor’s rights to its assets are limited. On the other hand debtor is given the opportunity to make an agreement with creditors in advance. Debtor has right to argue that it is not in bankruptcy. Furthermore, debtor can propose non liquidating solution as moratorium or reorganization.

Motivation for debtor to actively participate in proceedings is quite high as the possibility to influence the outcome of proceedings is quite high, too.

- Creditors

Creditors (legal entity or individual person) have significant rights how to protect their claims as well. Creditors can apply their rights individually or together via creditors committee. In addition, creditors can suggest a person to compile reorganization plan and to monitor its accomplishment.

- Insolvency trustee (hereinafter IT)

IT is person chosen from register maintained by Ministry of Justice of the Czech Republic and appointed by chairman of the insolvency court.²⁴ IT oversees the behavior of debtor, but his major role is to identify and then to register the debtor’s assets as well as creditor’s claims. IT can refuse to register creditor’s claim based on his understanding of debtor’s accounting and business when it appears to be groundless. Other IT’s roles depend on chosen method of insolvency proceedings.

4.6.2. Insolvency petition²⁵

Insolvency proceedings are always started with formal proposal known as insolvency petition. Insolvency court cannot start the proceedings by itself. The petition can be filed by debtor or creditor. Debtor is responsible to file for bankruptcy as soon as the assumption of bankruptcy

²³ There are limitations to who is considered to be debtor according to § 6 of IA (exempted are public universities, public hospitals, Czech National Bank, ..., if their debts were assumed by state. Moreover political parties, financial institutions, insurance companies are exempted as well.)

²⁴ § 25 of IA

²⁵ § 97-105 of IA

appears. Nevertheless, this duty is abolished when company is able to generate enough cash flow to surpass the struggles in different ways.

Debtor has to joint list of its receivables, payables, assets and its creditors (suppliers, etc.), debtors (customers, etc.) plus the list of employees and documents supporting insolvency petition.

Creditor can file for debtor's bankruptcy only when bankruptcy is existing (no impending bankruptcy). Moreover, the creditor should join the claim and supporting documentation and its registration.

4.6.3. Insolvency proceedings step by step²⁶

The proceedings are automatically started once the petition is received by court, however this does not mean the debtor is insolvent or bankrupt.²⁷ Petitions are published online at insolvency register's website, so that it ease the access to information and improve transparency. The firms can see online who is to be avoided while conducting the business. The court can order the petitioner to pay certain fee. The fee should serve as a form of protection before groundless filings (Richter, 2017b).

Once insolvency proceedings have started creditors can register their claims. Insolvency court has to decide about the petition till fifteen days since filing.

Although, there is a short-term defensive institute known as moratorium. Debtor can propose moratorium up to 7 days after proceedings start, but sooner than the liquidation is ordered by court. Moratorium is efficient in preventing run on debtor's assets, as court cannot decide about the bankruptcy during moratorium, that could last up to three months. Debtor can settle the claims and thus contribute to the withdrawal of petition (that can be done either by debtor or creditor). After moratorium ends court is eligible to decide about bankruptcy.

²⁶ § 107-158 of IA

²⁷ Automatic beginning of proceedings is often criticized for being vulnerable to groundless petitions, as the investigation of lawfulness begins after the beginning of proceedings and maybe more importantly after publishing of it.

4.6.4. Court decision²⁸

There are two possible decisions, either the petition is dismissed under certain circumstances. Those are – no registered creditor, settled claims, debtor's proposal (signed by all creditors and with consent of IT)²⁹, court can dismiss petition for flaws or for insufficient properties of debtor. This is one way to end insolvency proceedings – the fast and favorable one.

Second possible decision is that the debtor is in bankruptcy or impending bankruptcy. In this case there are various solutions to settle the claims. IT is entitled to execute full control over debtor's assets (cash, cash equivalents, tangible and intangible assets, shares, etc.).³⁰

4.6.5. Possible solutions³¹

IA knows three alternative solutions of insolvency proceedings. First is straight-bankruptcy (*Czech term konkurs*), second is reorganization and last one is discharge of a debtor³².

Discharge of a debtor is applicable only to non-entrepreneurs (legal entity or individual person), therefore it will not be described any further as the aim of this thesis is to describe insolvency proceedings of entrepreneurs.

If reorganization is not possible, or if debtor breach the rules, proceedings turn into straight-bankruptcy.

4.6.6. Straight-bankruptcy³³

First and still most common solution is straight-bankruptcy. This process is based on sale of debtor's assets. Secured debtor's claims are settled with proceeds of realization of secured assets,³⁴ afterwards unsecured creditor's claims are settled proportionately with proceeds of realization of remaining assets. Unsettled claims do not perish.

Once procedure of straight-bankruptcy came to an end the debtor is liquidated without successor.

²⁸ § 136-144 of IA

²⁹ § 308 of IA

³⁰ § 205-211 of IA

³¹ § 148 of IA

³² § 389-418 of IA

³³ § 244-315 of IA

³⁴ § 148 of IA

High trust is in judges who have to understand economic substance of bankruptcy as well as legal proceedings of bankruptcy.

4.6.7. Reorganization³⁵

Another socially more suitable solution of insolvency proceedings is reorganization. Reorganization is complicated procedure with high costs, so that the companies with more than 50 employees and turnover higher than CZK 50 million.³⁶

Reorganization needs to have a plan that is compiled in 120 days since the reorganization is allowed by court. Plan may be compiled either by debtor or by creditors. Nevertheless, in the end plan has to be approved by committee of creditors. Amongst all important things that are included in plan arguably the most important one is the composition of creditors and their claims once the reorganization is terminated.³⁷ Claims that are not settled within reorganization expire.³⁸

Reorganization may have various forms.³⁹ Obviously the creditor has interest in either take control over the firm or to find additional funds to settle its claims. Therefore amongst the reorganization forms may be debtor's merger with another firm, issuance of new shares and thus obtain new funds to settle the claims, sale of part assets or whole firm or restructuring of the claims. Restructuring means partial remission of debts or postponements of their maturity.

Stiglitz (2001 p. 20) argue that "corporate reorganizations are simply a rearrangement of claims on the assets of the firm."

Reorganization may change to straight-bankruptcy if debtor breach the law or agreed plan. IT has supervisory role over debtor to stick to the plan, keep in mind that proceedings are still ongoing. It may as well be completed by fulfillment of the plan or its substantial parts.⁴⁰

³⁵ § 316-364 of IA

³⁶ Till 2014 limit was CZK 100 million (Creditreform s.r.o., 2017).

³⁷ § 340 of IA

³⁸ § 359 of IA

³⁹ § 341 of IA

⁴⁰ § 362-364 of IA

5. Financial analysis

“A Man's management of his own purse speaks volumes about character” ~ Thomas Jefferson

Financial analysis's object is to diagnose company. That is useful when assessing the quality of management and the performance of a firm as unit. The impact of management's decisions is reflected in a company's performance and measured via various financial ratios. Ratios are derived from information released via financial statements, capital market data or economic statistics (figures).

As Gibson (2011 p. 187) points out analysis is judgmental process.

Ratios could measure the performance of the company not only in a meaning of profitability, it could reveal approaching bankruptcy or financial distress as well. Both of above mentioned are substantially interweaved.

5.1. Debt paying ability

Debt paying ability is derived on the firm's ability to generate cash or have liquid short term assets to settle current debt requirements. That is short-term ability of paying debts. Furthermore, the firm must maintain this ability in long-term.

5.1.1. Liquidity

Company's assets might be of a different degree of liquidity and it is important to distinguish amongst them. When the urgent need of cash outflow occurs and company's cash is depleted, it has to turn its most liquid assets into cash. The most liquid are usually receivables and inventory, however there is always problem with valuing inventory. On the top of that there are certain kind of industries with insignificant or no inventory levels.

On the one hand short-term lenders are satisfied when firms have liquid assets, on the other hand it is inefficient for firm to have excess cash lazing in bank. To assess different liquidity positions of firm's various ratios are employed.

- Net-Working-Capital-to-Total-Assets-Ratio

Most liquid assets are current assets. Current liabilities subtracted from current assets creates net working capital. Working capital is expected to be positive (usually).

$$\text{Working capital} = \text{current assets} - \text{current liabilities}$$

Current working capital should be compared with prior years.

If sales on credit are included in receivables ratios might be overstated.

- Current Ratio

Current ratio is measuring how many times can firm meet its short-term liabilities, therefore the higher the better. Surprisingly both, healthy and unhealthy, firm's ratios is relatively stable (Beaver, 1966). Current ratio is very simple it just compares current assets with current liabilities.

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

Sometimes it is suitable to net short-term investment against short-term debt to avoid inflating current ratio's value (Brealey, et al., 2011).

Current guidelines are to have current ratio level at approximately 2 or slightly below, nevertheless industry comparison is always needed to obtain reasonable understanding. The shorter the operation cycle the lower current ratio (Gibson, 2011).

- Quick (Acid-Test) Ratio

Different ability of assets to become liquid is reflected in quick ratio. For example inventory may not be as liquid as marketable securities and thus current ratio is misleading. Moreover, abovementioned valuation dispute over inventory could occur.

$$\text{Quick ratio} = \frac{\text{cash} + \text{marketable securities} + \text{receivables}}{\text{current liabilities}}$$

(Brealey, et al., 2011)

Common recommendation is to maintain quick ratio value at approximately 1, again industry comparison is needed. (Gibson, 2011)

- Cash Ratio

Finally, most liquid assets are cash and marketable securities.

$$\text{Cash ratio} = \frac{\text{cash} + \text{marketable securities}}{\text{current liabilities}}$$

(Brealey, et al., 2011)

High cash ratio may indicate inefficient firm's cash management. Excessive cash should be used within company's operations (Gibson, 2011).

Although none of the standard measures of liquidity take into account company's borrowing capacity. If a firm has guaranteed line of credit low cash ratio will not be such an issue (Brealey, et al., 2011).

5.1.2. Leverage

Know the debt capacity of firm is equally important for shareholders as well as for creditors. Creditors are paid out their interest payments from profit and the rest go to shareholders. In good times bigger part of profit is kept by shareholders, however when profit decrease situation could turn the other way around. The principle of financial leverage lies in increasing the shareholder's profit in good times and, unfortunately, in reducing it in bad times.

There are two approaches towards leverage ratios – balance sheet approach and income statement approach, depend on which financial indicator is employed.

- Debt Ratio

Financial leverage can be measured as percentage of long term capital.

$$\text{Long – term debt ratio} = \frac{\text{long – term debt}^{41}}{\text{long – term debt} + \text{equity}}$$

High long-term debt ratio is typical for leveraged buyouts.

⁴¹ Long-term debt should include long term financial leases as well, since it is a commitment to make payments (similar to obligation).

Another possibility how to calculate leverage is as percentage of equity.

$$\text{Long-term debt-equity ratio} = \frac{\text{long-term debt}}{\text{equity}}$$

Above mentioned measures ignore short-term debt. That makes sense if company is not regular short-term borrower. Otherwise it may be preferable to modify the definition and include all liabilities.

$$\text{Total debt ratio} = \frac{\text{total liabilities}}{\text{total assets}}$$

The higher the value the bigger the risk for creditors.

- Times-Interest-Earned Ratio

As banks prefer borrowers whose interest payments are covered by earning with room to spare, another way to measure the financial leverage may be preferable. Ratio of earnings before interest and taxes (EBIT) to interest payments is also known as interest coverage.

$$\text{Times-interest-earned} = \frac{\text{EBIT}}{\text{interest payments}}$$

Times-interest-earned ratio describes the firm's ability to keep jumping over the hurdle rate in form of interest payments.

Value of times-interest-earned approaching 1 force the company to spend all EBIT in order to pay the interest costs that is not preferable. The value of 2 or 3 is considered to be sufficient for certain lenders (Brealey, et al., 2011).

Firms with high, or growing revenues and EBITs are able to pay higher interest, thus they are granted with higher debt capacity. Vice versa the companies with low or decreasing revenues and EBIT should avoid taking on too much debt. Otherwise they can end up in bankruptcy.

Brealey, et al. (2011 p. 717) observe various definitions of numerator. Sometimes depreciation is excluded in other cases its just earnings plus interest or earnings before interest but after tax. Last case seem dull because interest is paid first, taxes afterwards.

- Cash Coverage Ratio

With regards to depreciation, it can be added to EBIT in order to obtain operating cash flow. This indicator is further employed to calculate cash coverage ratio. Cash coverage is measuring how many times operating cash flow can cover the interest payments (Brealey, et al., 2011).

$$\text{Cash coverage} = \frac{\text{EBIT} + \text{depreciation}}{\text{interest payments}}$$

- Leverage and the Return on Equity⁴²

Return on equity (ROE) is influenced with firm's mode of cash raising. On the one hand, issuing new debt lower the profit, on the other hand profit is distributed amongst fewer shareholders, than when new shares are issued. To find out which effect dominates formula, developed by E. I. DuPont de Nemours and Company, is utilized.

$$\begin{aligned} \text{ROE} &= \frac{\text{net income}}{\text{equity}} \\ &= \text{leverage ratio} \times \text{assets turnover} \times \text{operating profit margin} \\ &\quad \times \text{debt burden} \\ &= \frac{\text{assets}}{\text{equity}} \times \frac{\text{sales}}{\text{assets}} \times \frac{\text{after-tax interest}^{43} + \text{net income}}{\text{sales}} \\ &\quad \times \frac{\text{net income}}{\text{after-tax interest} + \text{net income}} \end{aligned}$$

The two middle terms are return on assets (ROA) and are not connected with financing. Although, the first and last depend on the debt-equity mixture. When firm is financed by debt, first ratio is greater than 1 and last ratio is less than 1 and thus “leverage can either increase or reduce return on equity“ (Brealey, et al., 2011 p. 718).

⁴² Return on equity and return on assets are thoroughly described in next chapter.

⁴³ After-tax interest is calculated as (1-tax rate)*interest.

5.2. Performance and efficiency

Profitability is vital concern of stockholders since their dividends are derived from profits (based on revenues). The same applies to creditors, whose preferred source of funds for debt coverage are funds generated by debtor's core business.⁴⁴

While assessing profitability the focus should be placed on relative measures rather than absolute numbers. Earnings should be compared to a base such as productive assets, owner's capital employed (equity) or creditor's capital employed (debt) (Gibson, 2011).

Return on Equity and Return on Assets (ROA) are known as book rates of return or accounting rates of return. Both are derived from accounting information. Dissimilar to market-value based measures, they are not affected by the current market swings and future expectations.

ROE is net income to equity, so that it measures the return to shareholders from their equity investment.

$$ROE = \frac{\text{net income}}{\text{equity}}$$

If we would like to know assets's, that is equity plus total liabilities, income generating ability we rely on ROA. Brealey, et al. (2011 p. 715) offer following calculation of ROA.

$$ROA = \frac{\text{after - tax interest + net income}}{\text{assets}}$$

Besides just calculating ROA, DuPont formula help to analyze the originator of change. Does the change occurred due to change in sales volume or its profitability? In order to find out ROA is broken down.

$$\begin{aligned} ROA &= \frac{\text{after - tax interest + net income}}{\text{assets}} = \frac{\text{sales}}{\text{assets}} \times \frac{\text{net income}}{\text{sales}} \\ &= \text{asset turnover} \times \text{operating profit margin} \end{aligned}$$

⁴⁴ Profitability measuring ratios should include only profit from core business operations. Extraordinary items or discontinued operations profit should be excluded.

DuPont formula helps to differ amongst companies with high margins, as luxury and lifestyle selling brands, and companies profiting from high volume of sales, such as food retailers (Brealey, et al., 2011).

DuPont formula also help in identifying the companies who are either differentiators or low cost companies, whose main competitive advantage is low price and high volume of sales. Differentiators are companies with strong brand or technological knowledge. Those are rather following so called “blue ocean strategy” that lies in creating new trends, markets. Their competitive advantage is not based on “be the cheapest” strategy.

Efficiency ratios are showing how efficient the companies are with their assets. Asset turnover ratio measure “how hard the firm’s assets are working” (Brealey, et al., 2011 p. 713). In other words the firm’s capacity of generating sales. The ratio is telling us how much sales are generated by every monetary unit of our assets.

$$\text{Asset turnover} = \frac{\text{sales}}{\text{assets}}$$

Refinements to sales as well as to assets are suitable. Sales relating to investments and construction in progress should be excluded. Otherwise ratio understate the firm’s capability of sales generation (reality is better).

Rule of thumb says it should be more than 1. Decreasing value of this metric is signaling some problem. It could be inappropriate purchasing policy that cause amass of useless or unsellable inventory. Furthermore, it can indicate undesirable accumulation of irrecoverable debts.

In general it is possible to measure sales to specific parts of assets. For example current assets and their components (receivables, working capital, inventory, financial assets) or long-term assets and their components.

Firms with high receivables turnover usually have quick paying customers and either efficient credit department or restrictive credit policy. Late payers are quickly followed up and only reliable customers are offered to pay promptly.

Another way of measuring efficiency is measuring the time. Calculating the average length for customers to pay their invoices. The shorter the better.

$$\text{Average collection period} = \frac{\text{receivables}}{\text{average daily sales}} = \frac{\text{receivables}}{\text{sales}/365}$$

Based on comparison of firm's average collection period and average payment period, it can either be creditor or debtor depending on firm's market power. In case firm's collection period is longer than its payment period it is basically providing interest free loan.

5.3. Bankruptcy predicting models

Credit risk models evaluating corporate credit risk could be divided into two groups. The first group are accounting-based models. Those models relies on accounting data from financial statements that are combined and various ratios are created. As Beaver (1966 p. 72) specify "a "financial ratio" is a quotient of two numbers, where both numbers consist of financial statement items."

Model could be univariate (Beaver, 1966), multivariate (Altman, 1968) or using logistic regression (Ohlson, 1980), and can predict corporate failure. Beaver (2005 p. 93) notes "it is well established that financial ratios do have predictive power up to at least five years prior to bankruptcy." Furthermore, the size of a company is important, too. Ohlson (1980 p. 110) points out that there are basic statistically significant factors affecting probability of failure that is the size of the company, a measure of the financial structure, a measure of performance and a measure of current liquidity. Those ratios are empirically estimated from sample of failed and non-failed companies.

The other group are market-based models, those have deep theoretical foundation. Option-pricing strategy, developed by Black, et al. (1973) and Merton (1974), serve to evaluate corporate liabilities and calculate the probability of default.

Shumway (2001) criticize single-period (discrete-time) models as static giving incorrect inferences. He proposed to use hazard model that is a combination of accounting and market variables. Also known as survival and duration analysis, the model is providing alternative with similar or slightly better results.

In order to rely on market-based models developed stock market is a must. This condition may be a considerable obstacle in Czech Republic. With regards to latter case study – this group will not be further described within this work.

On the top of that, the comparison of all above mentioned models is giving ground to assumption, that accounting-based models give at least comparable results as market-based ones.

Altman (2002) compares market based Moody's KMV model⁴⁵ and his Z score model in case study of Enron and WorldCom. Both metrics give very similar ratings as a result.

Beaver, et al. (2005) note that explanatory power of accounting based ratios may have slightly decreased throughout the time (since 1960s), probably due to increase in intangible assets that is not fully reflected by additional FASB standards.⁴⁶

Hazard models and market-based ones gave comparable results (Beaver, et al., 2005).

When whichever model is used it is important to keep in mind, that models are empirically build on certain data set (in sample) and furthermore verified on data set (out of sample) with same attributes. Data sets are from certain industry, country or exchange. Applying models on different data sets, from different industry, country, and time frame give unstable result (Grice, et al., 2001). On the top of that sometimes the normality of data is not confirmed (Beaver, 1966).

5.3.1. Altman's Z-score model

Similarly as Beaver, Altman was pioneer as well, but in the area of multivariate model in order to bridge the gap “between traditional ratio analysis and the more rigorous statistical techniques” (Altman, 1968 p. 589). Altman's theory is based on greater statistical significance of multivariate framework of ratios than the sequential ratio comparison could bring. The goal is to identify the firms heading towards failure within two years. Altman pointed out the advantages of multiple discriminant analysis (MDA).

⁴⁵KMV was developed by Czech mathematician Oldřich Vašíček and his fellow reasearchers Stephen Kealhofer and John McQuown. Model was later (2002) bought by Moody's for aprox USD 210 million (Wikipedia, 2017).

⁴⁶ Financial Accounting Standard Board created 150 new standards since 1973 mainly in order for financial statements to represent “fair value” (Beaver, et al., 2005).

Best discriminant function at 1968 was following.

$$Z = 0,012 * X_1 + 0,014 * X_2 + 0,033 * X_3 + 0,006 * X_4 + 0,999 * X_5$$

Where:

X_1 – working capital / total assets (WC/TA)

X_2 – retained earnings / total assets (RE/TA)

X_3 – earnings before interest and taxes / total assets (EBIT/TA)

X_4 – market value equity / book value of total debt (MVE/TL)

X_5 – sales / total assets (S/TA)

Z – overall index

Based on the overall value of Z the firm should be classified as either “non-bankrupt“ if $Z > 2,99$. The interval between $\langle 1,81; 2,99 \rangle$ is defined as zone of ignorance or grey area. If Z falls into grey area it is not possible to decide and further guidelines are needed. If Z falls below 1,81 the firm is going to bankrupt.

| | | |
|---------------|-----------|-----------|
| Distress zone | Grey zone | Safe zone |
| < | 1,81-2,99 | < |

Figure 6 Original Z score boundaries, source (Altman, 1968)

X_1 (WC/TA) – working capital is defined as difference between current assets and current liabilities. In other words assets and liabilities that are to be turned into cash in the near future and “it roughly measures the company’s potential reservoir of cash“ (Brealey, et al., 1991 p. 679). For that reason the healthy company’s ratio is stable contrary with value attaining 0,4. Failing firm would experience consistent operating loss and thus current assets in relation to total assets would shrink. The unhealthy’s firm ratio is, on the contrary, decreasing. From value 0,3 five years prior to failure till 0,05 one year prior to failure. (Beaver, 1966) Obviously company with no cash reservoir, higher current liabilities than current assets, cannot survive.

X_2 (RE/TA) – this ratio is usually favorable for older firms, that had a time to accumulate retained earnings. Nevertheless it mirrors real life where the age of the firm matters as occurrence of bankruptcy of younger firms is much higher. (Altman, 2002) In addition RE / TA highlight the use

of internally generated funds for growth⁴⁷ (low risk capital) or other people's money (higher risk capital).

X_3 (EBIT/TA) – ratio measures “the true productivity of firm's assets“ (Altman, 1968 p. 595). “Firm's ultimate existence is based on the earning power of its assets“ (Altman, 2002 p. 11). This ratio examines the capability of the firm to generate profits from its assets similarly as X_2 , however X_3 is taking into account only current year (no cumulating).

X_4 (MVE/TL) – ratio of consist of market value of shares compared to total debt (current and long-term) measure the extent of possible drop of equity value before the firm becomes insolvent, that is before its liabilities exceed the assets. According to (Altman, 1968) it provides with important market value dimension, that other studies neglect.

Not all companies are quoted, but still desire to get a loan and so they have to be rated. Altman later substitutes market value with book value of net worth so that the Z score is applicable to privately held companies. Although the ad hoc modifications are not scientifically valid. (Altman, 2002)

X_5 (S/TA) – sales generating ability measure the management's capacity to deal with competition. Surprisingly this ratio is of insignificant statistical importance on univariate analysis, but has second highest contribution within MDA.

As time flows, firms (industries, economies) evolve and thus the information value of Z score may diminish. Moreover, as Taffler, et al. (2007) point out there is systematic deviation in applying ratios developed on public companies to privately held ones. Altman, aware of this facts, presented updated versions and different variations of Z score.

- Z' for private firms (not publicly traded)

When MVE is replaced by BVE, we get following discriminant function.

$$Z' = 0,717 * X_1 + 0,847 * X_2 + 3,107 * X_3 + 0,420 * X_4 + 0,998 * X_5$$

⁴⁷ The higher the RE relative to TA the less debt used

The boundaries applicable for private companies are 1,23 and 2,9.

| | | |
|--------------------|-----------------------|----------------|
| Distress zone < | Grey zone 1,23-2,9 | Safe zone > |
|--------------------|-----------------------|----------------|

Figure 7 Z score for private firm's boundaries, source: (Altman, et al., 2017)

- Z'' for non-manufacturers

When MVE is replaced by BVE, and X_5 is omitted industry effects are minimized.

$$Z'' = 6,56 * X_1 + 3,26 * X_2 + 6,72 * X_3 + 1,05 * X_4$$

For non-manufacturers the boundaries are 1,23 and 2,9.

| | | |
|--------------------|-----------------------|----------------|
| Distress zone < | Grey zone 1,23-2,9 | Safe zone > |
|--------------------|-----------------------|----------------|

Figure 8 Z score for non-manufacturers boundaries, source: (Altman, 1983)

- Z''' for emerging markets

In order for Z'' score to be more applicable in emerging markets Altman added constant 3,25.

$$Z''' = 3,25 + 6,56 * X_1 + 3,26 * X_2 + 6,72 * X_3 + 1,05 * X_4$$

Boundaries applicable for emerging markets are slightly different 1,1 and 2,6 (Altman, 1983).

| | | |
|--------------------|----------------------|----------------|
| Distress zone < | Grey zone 1,1-2,6 | Safe zone > |
|--------------------|----------------------|----------------|

Figure 9 Z score for emerging markets boundaries, source (Altman, et al., 2017)

On the top of that Altman (2002) believe that it is even better to develop specific models for specific industries. Recently explanatory variables (ratios) of Z''' score were statistically tested across European and non-European countries and confirmed (Altman, et al., 2017). Model designed for emerging markets seems to be appropriate for Czech Republic.

5.3.2. IN Financial Analysis

IN Financial Analysis (INFA) aim to be diagnostic tool developed especially for private domestic⁴⁸ and foreign industrial companies from Czech environment. The knowledge of stock value derived from stock market is not needed. The authors pointed out importance of interconnection of

⁴⁸ Domestic means Czech owner, foreign means foreign owner.

financial and risk controlling view indicator, that was not constructed by anyone else (Neumaierová, et al., 2014).

Therefore the Neumaier created family of IN indexes based on MDA. They started at 1995 with IN95 (bankruptcy index) followed with credibility index called IN99 in 1999. Followed by credibility index IN01 in 2002, that was updated and finally IN05 in 2004 was created. Index IN05 is giving two information the probability of value creation and danger of bankruptcy (Neumaier, et al., 2005).

Index IN05 could be defined as:

$$IN05 = 0,13 * \frac{assets}{liabilities} + 0,04 * \frac{EBIT}{interest\ costs} + 3,97 * \frac{EBIT}{assets} + 0,21 * \frac{sales}{assets} + 0,09 * \frac{current\ assets}{current\ liabilities}$$

The boundaries to distinguish between firms are 1,6 and 0,9.

| | | |
|--------------------|----------------------|----------------|
| Distress zone < | Grey zone 0,9-1,6 | Safe zone > |
|--------------------|----------------------|----------------|

Figure 10 IN05 boundaries, source (Neumaierová, et al., 2014)

If firm falls below 0,9 it is possible to expect bankruptcy with probability of 97% and no value creation with 76%. In between the zone the probability of bankruptcy is 51% and probability of value creation is 71%. Firms above 1,6 are expected to go bankrupt with probability of 8% and create value with 95%.

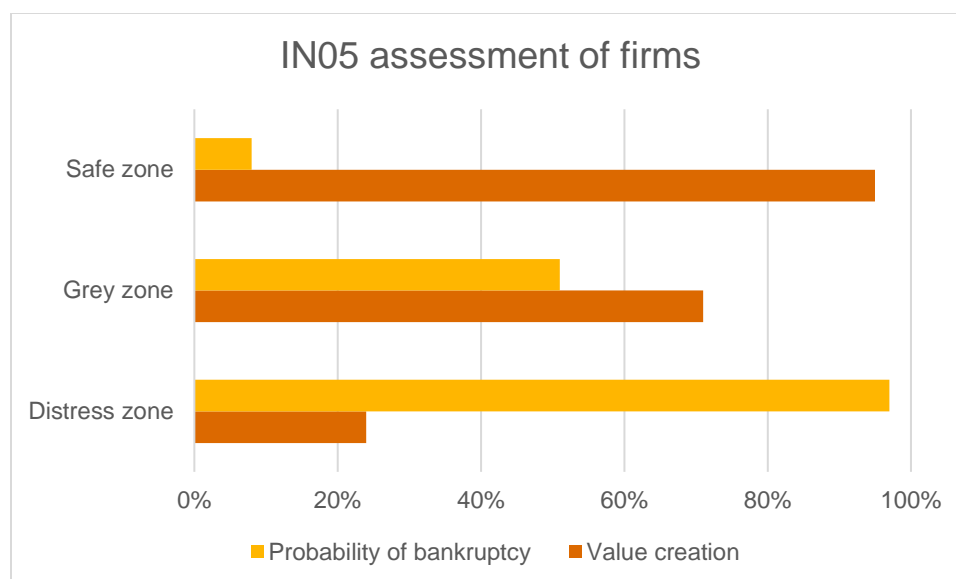


Figure 11 IN05 assessment of firms, source (Neumaierová, et al., 2014)

The advantage of IN index is its construction combining owner's and creditor's point of view.

Five year predictive ability was confirmed on Czech companies. IN05 gave even better results than Altman Z'score, Taffler or Quick test (Machek, 2014).

5.3.3. Kralicek's Quick test

Developed by Austrian economist Peter Kralicek (1991), mostly used in Germany and Austria. Quick test that was modified in 1999 represents solvency models.

Test consists of four financial ratios, two indicators of financial stability and two indicators of efficiency. All four are rated by marks from 0 to 4, where 0 represents the worst performance and 4 the best. Subsequently, final mark is created as simple arithmetic average.

Table 6 Kralicek's Quick test marks guideline, source (Machek, 2014)

| Mark | 0 | 1 | 2 | 3 | 4 |
|----------------------------|-------------|-------------------|-------------------|-------------------|-----------------|
| Assets / Equity | $X_1 > 0,8$ | $0,8 > X_1 > 0,6$ | $0,6 > X_1 > 0,4$ | $0,4 > X_1 > 0,2$ | $0,2 > X_1 > 0$ |
| Liabilities / Operating CF | $X_2 > 0,8$ | $0,8 > X_2 > 0,6$ | $0,6 > X_2 > 0,4$ | $0,4 > X_2 > 0,2$ | $0,2 > X_2 > 0$ |
| EBIT / Assets | $X_3 > 0,8$ | $0,8 > X_3 > 0,6$ | $0,6 > X_3 > 0,4$ | $0,4 > X_3 > 0,2$ | $0,2 > X_3 > 0$ |
| Operating CF / Sales | $X_4 > 0,8$ | $0,8 > X_4 > 0,6$ | $0,6 > X_4 > 0,4$ | $0,4 > X_4 > 0,2$ | $0,2 > X_4 > 0$ |

Firm's evaluation is based on final mark as described in table below.

Table 7 Kralicek's Quick test classification of firms, source (Marek, 2007)

| Score | Position |
|-------|-----------|
| 4 | Very good |
| 3 | Good |
| 2 | Average |
| 1 | Weak |
| 0 | Very weak |

Simplicity is the main advantage of Kralicek's Quick test. Moreover, it is possible to calculate the results online via his webpage.⁴⁹ Test should not be used for financial companies.

Disadvantage might be the fact that it is not giving specific boundary denoting bankruptcy.

The power of Kralicek's Quick test was tested on Czech companies for period 2007-2012 and was rated as second worst after Taffler's Z-score. (Machek, 2014)

⁴⁹ www.kralicek.at

6. Case study of SAZKA a.s.

“Success is going from failure to failure without losing enthusiasm.” ~ Winston Churchill

Sazka has long history. Despite its almost monopoly position Sazka bankrupted. Financial performance assessment and bankruptcy indicating models will be used in order to find out why.

6.1. Lottery business and Sazka’s market position before bankruptcy from 2004 to 2010

First of all, lotteries and bets are highly regulated business all over the world. Moreover, lottery is very country specific. Legal framework of running lottery or betting business changed multiple times during last two decades in Czech Republic, but the substance remained same. To run a lottery or betting business one need a license that is granted by Ministry of Finance of the Czech Republic (hereinafter MF). Part of levy must be redistributed to municipalities. Before 2011 part of levy was redistributed by sports unions directly to local sports clubs.

The gambling industry, as monitored by MF, experienced significant growth during period 2004-2010. Main trend is growth of branch of technical games. Internet bets were included in this branch till 2009 and separate numbers were not reported. Lottery group, including Sazka, went through slight growth from CZK 6 billion in 2004 to CZK 7,6 billion in 2006, followed with oscillation between CZK 7,6 billion and CZK 7,3 billion CZK during 2006-2009. The period ended with major drop by CZK 0,5 billion in 2010.

Table 8 Gambling business in Czech Republic during 2004-2010 in CZK billion, source (SALEZA, a.s., 2010)

| Segment | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-------------------------|-------|-------|-------|--------|--------|--------|--------|
| Slot machines | 47,80 | 50,10 | 52,80 | 57,20 | 63,30 | 48,70 | 37,80 |
| Casinos | 11,00 | 10,10 | 10,50 | 9,60 | 9,80 | 9,60 | 8,90 |
| Lottery | 6,00 | 6,90 | 7,60 | 7,30 | 7,50 | 7,30 | 6,80 |
| Bingo | 0,20 | 0,20 | 0,20 | 0,20 | 0,10 | 0,00 | 0,00 |
| Bets (brick and mortar) | 10,60 | 11,40 | 12,30 | 12,00 | 11,90 | 8,80 | 7,70 |
| Bets (internet) | n/a | n/a | n/a | n/a | n/a | 5,80 | 7,70 |
| Technical games | 9,00 | 12,00 | 14,80 | 22,20 | 35,90 | 47,60 | 56,60 |
| Total | 84,60 | 90,70 | 98,20 | 108,50 | 128,50 | 127,80 | 125,50 |
| YtY change | 8% | 7% | 8% | 10% | 18% | -1% | -2% |

Based on comparison of Sazka's revenue from lottery and the whole lottery industry Sazka's dominance is more than obvious. Sazka accounted for more than 95% of lottery industry in 2010. Moreover, lottery business is not taxable as standard business. That is why Sazka's tax charges seems to be enormously low.

Sazka's revenues rocketed from CZK 8,46 billion in 2004 to CZK 12,39 billion in 2008 and reach all-time best. Although drop followed in 2009 and 2010's revenue plummeted to CZK 9,28 billion. Similar experience is observable from all other indicators.

Table 9 Selected Sazka's indicators and its evolution in CZK billion (employees FTE) during 2004-2010

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------------------------------|------|------|-------|-------|-------|-------|------|
| Revenue | 8,46 | 9,34 | 10,29 | 10,40 | 12,39 | 10,66 | 9,28 |
| Lottery and bets | 6,59 | 7,25 | 7,90 | 7,66 | 8,06 | 8,37 | 7,34 |
| Other | 0,80 | 0,76 | 0,94 | 0,82 | 0,57 | 0,67 | 0,56 |
| Costs total | 7,14 | 7,79 | 8,59 | 8,99 | 11,14 | 9,41 | 7,86 |
| Costs in form of paid prizes | 3,52 | 3,74 | 3,94 | 3,85 | 4,03 | 4,42 | 3,62 |
| Profit before tax | 1,38 | 1,63 | 1,76 | 1,45 | 1,27 | 1,27 | 1,45 |
| Profit after tax | 1,32 | 1,56 | 1,70 | 1,42 | 1,26 | 1,25 | 1,43 |
| Yields | 1,11 | 1,29 | 1,08 | 1,04 | 1,00 | 0,87 | 0,91 |
| N of employees FTE | 422 | 433 | 453 | 459 | 462 | 471 | 456 |

The difference between the revenues from lottery and costs⁵⁰ is known as yields (*Czech term výtěžky*). In compliance with law (Act No. 202/1990 Coll. On Lotteries and other similar Games) at least 20%⁵¹ of lottery yields are to be redistributed to publicly beneficial purposes in form of levy. Usually through civil society organizations and non-governmental organizations mainly connected with sport in order to support the development of sport in Czech Republic (SALEZA, a.s., 2010).

Sazka's biggest revenue stream is lottery. In general Sazka's revenue are following above mentioned scenario of growth and fall in last two years.

⁵⁰ Lottery prizes and operating costs are included in term costs.

⁵¹ Rate of 20% was applicable if difference between revenues and costs was more than CZK 1 million.

Table 10 Sazka's revenues breakdown in CZK billion, source SALEZA,a.s.'s AR 2004-2010

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-----------------------------|------|------|------|------|------|------|------|
| Revenues from core business | 6,59 | 7,25 | 7,90 | 7,66 | 8,06 | 8,37 | 7,34 |
| Lottery only | 5,63 | 6,86 | 7,26 | 6,92 | 7,20 | 7,15 | 6,52 |
| Sportka | 3,79 | 5,00 | 5,18 | 4,74 | 5,01 | 4,29 | 4,34 |
| Lucky 10 | 1,12 | 1,13 | 1,35 | 1,50 | 1,41 | 1,43 | 1,31 |
| Euromillions | 0,18 | 0,14 | 0,13 | 0,14 | 0,20 | 0,23 | 0,35 |
| Bets total | 0,65 | 0,37 | 0,32 | 0,27 | 0,41 | 0,76 | 0,56 |
| Online bets | n/a | n/a | n/a | n/a | n/a | 0,59 | 0,45 |
| Other | 0,31 | 0,02 | 0,32 | 0,47 | 0,45 | 0,46 | 0,26 |

Major lottery is "Sportka" that generated CZK 4,343 billion in 2010, another CZK 1,310 billion by "Lucky 10". Sazka also introduced euro lottery "Euromillions" in 2003, however it generated only CZK 354 million in 2010.

Bets in 2004 are influenced by ice hockey championship held at SAZKA Arena in Prague of which Sazka was significant sponsor. Online bets figures for 2004-2008 are not available. Although online bets are vital part of total revenues resulting from bets. In 2010 revenues from sport bets attained CZK 559 million. CZK 447 million of it were from online bets.

Sazka's bets market share was 3,63% in 2010. It is obvious that lottery is core business of Sazka and its main value generator.

6.2. SAZKA's trademark in new millennium

SAZKA a.s.⁵² (hereinafter Sazka⁵³) started as a lottery company in 1950s. Modern Sazka was created with newly established limited company on 27.12.1992. Sazka's shareholders structure remained stable until 2010.

Majority of shareholders are civil organization societies or other non-governmental organizations. Largest shareholder, basically controlling whole company, was Czech Sports Union (*Czech term Česká unie sportu, s.z.*).⁵⁴

⁵² Legal entity with ID 26493993 bears name SAZKA a.s. since 27.6.2014, original bankrupted entity ID is 47116307 and its current name is SALEZA, a.s.

⁵³ Sazka refers to the company as a brand (not taking into account different legal entities)

⁵⁴ Former name is Czech union of physical education and sports (*Czech term Český svaz tělovýchovy a sportu known as ČSTV*)

Table 11 Sazka's shareholder structure before bankruptcy, source (SALEZA, a.s., 2010)

| Shareholder | Share in CZK ths. | % of shares |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|
| Czech Sports Union (<i>Česká unie sportu, s.z.</i>) | 951,48 | 67,98% |
| The Sokol movement (<i>Česká obec sokolská</i>) | 189,54 | 13,54% |
| Czech association Sport for everyone (<i>Česká asociace Sport pro všechny, občanské sdružení</i>) | 77,86 | 5,56% |
| Czech Auto club (<i>Autoklub České republiky</i>) | 55,98 | 4,00% |
| Association of sport unions CR (<i>Sdružení sportovních svazů České republiky</i>) | 49,87 | 3,56% |
| Czech Olympic Committee (<i>Český olympijský výbor</i>) | 27,99 | 2,00% |
| Czech Shooting Union (<i>Český střelecký svaz</i>) | 20,23 | 1,45% |
| Association of physical education clubs and sport clubs CR (<i>Asociace tělovýchovných jednot a sportovních klubů České republiky</i>) | 14,31 | 1,02% |
| Eagle (<i>Orel o.s.</i>) | 12,34 | 0,88% |
| Total | 1 399,60 | 100% |

In new millennium (after 2000) the possibility to buy a lottery ticket was almost unlimited. There were 6523 terminals⁵⁵ that were located in various places (shops) including 2134 post outlets, 1965 newsstands and tobacco shops, 871 gas stations and 469 grocery and convenience stores. The sales were not limited only to brick and mortar shops but online tools were used as well. From few kind of lotteries in 50s Sazka's portfolio grew into more than 50 lotteries in 2010 (SALEZA, a.s., 2010). Although, major impact on company's revenues had only few of them as mentioned above. Sazka has tried to penetrate sport bets market but never gained significant market share. Lottery was the biggest revenue generator as it is Sazka's core business. Apart from that, lottery is considerably more profitable than betting business.

There was possibility to buy tickets for cultural and sport event via webpage www.sazkaticket.cz. Almost six million tickets for more than CZK 2,8 billion were sold between the years 2004-2010.

Wide network of terminals gave Sazka the opportunity to introduce new services for customers. One of them was the possibility to top up prepaid mobile cards, this service was introduced during 2002, and brought profit of approximately CZK 100 million in 2003 (SALEZA, a.s., 2003).

Terminals were further used for e-payments and as payment points for postal orders.

⁵⁵ Terminal in the meaning of electronic machine accepting lottery tickets.

With time Sazka grew into holding with multiple subsidiaries, but none of them were of a significant importance or impact to balance sheet or statement of profit and loss. Whole holding had 606 employees. Sazka itself accounted for 476 of them.⁵⁶ Moreover apart few of them there were no business synergies.

The company widened its business portfolio and tried to introduce new revenue streams in form of new services, however core lottery business remains the main “cash cow“. Lottery license and brand are probably the biggest Sazka’s competitive advantages. Based on performance, Sazka’s lottery business itself was a golden egg and therefore all Czech billionaires were interested in it.

Before moving forward, I consider it important to present other denominator’s in Sazka’s bankruptcy.

6.2.1. SAZKA Arena – the troublemaker

The bottleneck was the idea to build multifunctional sports arena known as SAZKA Arena with capacity of 18 thousands places. The construction works started at October 2002 and arena was opened at March 2004 at the occasion of ice hockey world championship held in Prague in 2004. The arena is one of the best in Europe with unique architectural roof construction that was awarded.

Sazka itself admit the cost of the arena to be CZK 7,2 billion (three times more than expected).⁵⁷ In order to raise such an amount Sazka had to take huge debt. Funds were raised through short term loans at the beginning and afterwards replaced by bonds (SALEZA, a.s., 2003). In 2003 Sazka borrowed CZK 1,85 billion. In 2004 Sazka issued bonds in the amount CZK 5,6 billion (EUR 175 million) with maturity 10 years and interest of 7,375 %. Bonds were rated by S&P as BB- with stable outlook and traded on exchange in Luxembourg. Whole amount was used by “Občasné sdružení ZELENÝ OSTROV”⁵⁸ (hereinafter OSZO) to finance the construction of arena. Managers of issuance were Credit Suisse First Boston and Penta Finance (hereinafter Penta⁵⁹)

⁵⁶ Real number of employees not FTE, including maternity leaves etc.

⁵⁷ It seems incredible that E & Y Valuations s.r.o. later estimated the value of arena to be CZK 1,57 billion.

⁵⁸ In 2016 entity with ID 26628821 was renamed to “Zelený Ostrov, z.s.” OSZO was represented by shareholders of Sazka, therefore the assumption of same ownership structure seems reasonable.

⁵⁹ In this thesis Penta refers to whichever firm controlled by Penta Investments – Czech private equity firm.

(SALEZA, a.s., 2004). Based on information noted in 2005's annual report Sazka paid on time all liabilities (SALEZA, a.s., 2005).

6.2.2. Bestsport, a.s.

Bestsport was once fully owned by Sazka. Bestsport is special purpose vehicle governed in order to build and operate arena. Ownership structure was not that stable as Sazka's. It changed during years. First significant change occurred in 2003 when 90% was sold to OSZO. Sazka's held the rest (10%) and lent CZK 2,687 billion to Bestsport (SALEZA, a.s., 2003). In 2004 Sazka's loans to Bestsport were CZK 7,648 billion (SALEZA, a.s., 2004). This amount was further raised in 2006 after exchange of bonds. Last change in ownership of Bestsport (before bankruptcy) occurred in 2009. Since 2009 Sazka owned only 0,07% of Bestsport (SALEZA, a.s., 2009). The remaining part was held by OSZO with similar shareholder's structure as Sazka's. Finally in 2010 Sazka's receivables as reported were CZK 6,415 billion (SALEZA, a.s., 2010).

The role of OSZO was simple as a civil society organization it was entitled to be on the list of beneficiaries of levy. Transfer of ownership of Bestsport from limited company (Sazka) to civil society organization (OSZO) gave Sazka possibility to pour more money into SAZKA Arena and report same profitability. OSZO had a leasing contract with Bestsport in order to purchase the arena in the future – that never happened.⁶⁰

Bestsport original entity (ID 19013825) is in liquidation. In 2012 Bestsport's assets were transferred to entity created in order to run insolvency proceedings (ID 24215171). This entity is currently in liquidation, as its goal was achieved. Finally arena was transferred to current bearer of the name Bestsport, a.s. Entity with ID 24214795 in 2012 of which ultimate owner is PPF⁶¹.

6.2.3. Aleš Hušák

Sazka's diehard CEO and chairman of the board (since 1995) is very important stakeholder in this narrative. It is obvious that Sazka's owners were either too incompetent or easily to be manipulated. With loose control the agency problem was visible even from outside. Mr. Hušák

⁶⁰ Informations about OSZO published via Commercial register are either incomplete or misleading, therefore it is hard to find more informations about it

⁶¹ In this thesis PPF refers to whichever firm from PPF Holding or controlled by Petr Kellner

had two Bentleys at his disposal. On the top of that, as a wine enthusiast he made Sazka to purchase vineyard KOLBY a.s. (via Agro Tera,a.s.) and subsequently invested millions into it.⁶²

Mr. Hušák even denied the proposal of Sazka's long-term CFO Jan Prádler to let strategic investor in the company that allegedly came in 2005 in order to avoid insolvency. Mr. Hušák wanted to solve the issue by himself (Prádler, 2011). The motive could be to maintain his powerful position with lots of perks, high social status and influence.

Moreover, right before bankruptcy Sazka owned shares of Komerční banka, a.s. in total amount of CZK 105 million and shares of Citibank Europe plc in total amount of CZK 55 million and few other banks probably in order to straighten Mr. Hušák's negotiating position (SALEZA, a.s., 2010).

6.3. Highway to hell

Issued bonds were in April 2006 exchanged⁶³ for bonds with lower interest. New notional was EUR 215 million (CZK 6,1 billion) with maturity of 15 years (2021) and interest rate of 9%. Interest was dependent on rating. The better the rating the lower the interest. In 2006 S&P's changed their rating from "B+" to "B" with negative outlook. The funds were further lent to Bestsport with interest of 9,975%. On the top of that Sazka used cross currency swap to hedge the currency risks and interest swap to hedge the interest risks (SALEZA, a.s., 2006).

At the end of 2006 Sazka recorded unpaid interest from Bestsport in the amount of CZK 551 million (SALEZA, a.s., 2006).

Furthermore, in 2006's annual report Sazka noted that there is huge credit risk connected with ability of Bestsport to repay the loan, as the loan represent more than half of the Sazka's balance sheet and part of the repayments were postponed (SALEZA, a.s., 2006).

Nevertheless the exchange was presented as optimization of capital structure aiming to change short term financing of arena to long term, the decrease in rating should warn shareholders.

⁶² CZK 32 million in 2004 (SALEZA, a.s., 2003) and another CZK 15 million in 2006 (SALEZA, a.s., 2006).

⁶³ First issuance was repaid with new one (SALEZA, a.s., 2006).

Moreover it is obvious it was not favorable exchange for Sazka given that indebtedness significantly increased.

In 2007-2008 Sazka rented SAZKA Arena's name and changed it to O₂ Arena (SALEZA, a.s., 2007).

During 2007 S&P's changed the rating again to B+ with stable outlook, that influenced interest rate that decreased from 9% to 8,5% (SALEZA, a.s., 2007). Rating was changed back to B at November 2009 and even more downgraded to B- at the beginning of December of 2009 that means 9% interest rate. Change in rating did not come unexpected. In 2009 based on IFRS 7.39 Sazka presented all the remaining non derivative financial obligations in millions of CZK. Including notional and interest they were of following age structure (SALEZA, a.s., 2009).

Table 12 Sazka's financial obligations in CZK million as at 31.12.2009, source (SALEZA, a.s., 2009)

| 31.12.2009 | Due up to 1 year | Due in 1-2 years | Due in 2-5 years | Due in more than 5 years |
|------------------------------------------------|------------------|------------------|------------------|--------------------------|
| Issued bonds | 717,74 | 767,64 | 2 493,16 | 5 903,52 |
| Bank loans | 1 650,00 | 0,00 | 0,00 | 0,00 |
| Liabilities from financial leasing | 23,32 | 11,24 | 55,95 | 0,00 |
| Trade and other payables (bearing no interest) | 2 057,95 | 5,53 | 1,74 | 286,62 |
| Provided financial guarantees | 304,31 | 233,84 | 703,92 | 0,00 |
| Total | 4 753,32 | 1 018,24 | 3 254,76 | 6 190,13 |

On the top of that, the comment on situation came as well. Sazka had stated that the bank loans in the amount of CZK 1,2 billion are due in first quarter of 2010 and another CZK 0,45 billion due in second quarter of 2010 with Sazka having no available liquidity to settle those claims. Moreover, current credit line agreements were prolonged week by week. Management mentioned that the short-term structure of those bank loans will be solved with new pool financing. According to annual report negotiations were heading to mutual agreement, however based on later actions this statement is arguable (SALEZA, a.s., 2009).

The problem originated in Bestsport and OSZO incapability to settle its liabilities to Sazka. In 2009 and 2010 Sazka's loans (including interest) to aforementioned companies exceeded CZK 9 and 10 billion respectively (SALEZA, a.s., 2010).

Table 13 Sazka's receivables from Bestsport and OSZO as at 2010 and 2009, source (SALEZA, a.s., 2010)

| In CZK million | 31.12.2010 | 31.12.2009 |
|----------------|------------|------------|
| Bestsport | 6,415 | 6,281 |
| OSZO | 3,798 | 3,417 |
| Total | 10,213 | 9,698 |

During 2010 rating completely sunk. Firstly to CCC+ with developing outlook on 15.3.2010. Furthermore 17.12.2010 to CC with negative outlook.

Subsequently in 2010 age structure changed as well. The most visible change occurred in the due dates of issued bonds.

Table 14 Sazka's financial obligations in CZK million as at 31.12.2010, source (SALEZA, a.s., 2010)

| In million CZK as at 31.12.2010 | Due up to 1 year | Due in 1-2 years | Due in 2-5 years | Due in more than 5 years |
|------------------------------------------------|------------------|------------------|------------------|--------------------------|
| Issued bonds | 5 412,77 | 0,00 | 0,00 | 0,00 |
| Bank loans | 1 634,59 | 0,00 | 0,00 | 0,00 |
| Liabilities from financial leasing | 13,89 | 13,89 | 22,62 | 0,80 |
| Trade and other payables (bearing no interest) | 2 051,90 | 24,64 | 1,31 | 261,08 |
| Provided financial guarantees | 731,64 | 149,38 | 61,25 | 0,00 |
| Total | 9 844,79 | 187,91 | 85,18 | 261,88 |

Sazka tried to negotiate new pool financing during 2010, however this attempt was disrupted. In December 2010, corporate raider Radovan Vitek⁶⁴ bought claims resulting from defaulted loans from banks via one of his companies Moranda, a.s. (Komerční banka, a.s. CZK 462 million and Raiffeisenbank, a.s. CZK 400 million). KKCG⁶⁵ joint this run and bought unsettled claim in the amount of CZK 400 million from Fortis Bank at the January 2011 (SALEZA, a.s., 2010).

For detailed overview see Sazka's short-term bank loans and other liabilities in CZK million reported as at 31.12.2010. Interest rate of defaulted loans is sanction interest rate (SALEZA, a.s., 2010).

⁶⁴ Sazka confirmed only assignment of loans to Moranda, a.s. and Siderius Holdings Limited, based on further development of situation and based on the press we can assume the ultimate owner is Radovan Vitek

⁶⁵ In this thesis KKCG refers to whichever firm from KKCG Holding or controlled by Karel Komárek jr.

Table 15 Sazka's short-term bank loans and other liabilities in CZK million as at 31.12.2010, source (SALEZA, a.s., 2010)

| Creditor | 31.12.2010 | 31.12.2009 | Interest rate p.a. | Due date |
|-------------------------------------------------------------------|------------|------------|--------------------|------------|
| Komerční banka, a.s. (then Moranda, a.s.) | 427 | 400 | 25% | 15.12.2010 |
| Česká spořitelna, a.s. | 400 | 450 | 5,41% | 05.01.2011 |
| Raiffeisenbank a.s. (then SIDEREUS HOLDINGS LIMITED) | 406 | 400 | 29% | 17.12.2010 |
| Fortis Bank SA/NV (then KKCG STRUCTURED FINANCE LIMITED) | 402 | 400 | 20% | 17.12.2010 |
| Total | 1 635 | 1 650 | | |

Subsequently Mr. Vitek filed insolvency petition on 17.1.2011. His motivation was clear. He wanted to take over the company or get a reasonable bid for it. Shortly afterwards the outstanding debt was assigned to PPF.

Bond's rating was downgraded on 12.1.2011 to D with regards to defaulted loans.

On 4.3.2011 creditor KKCG joined the unsatisfied creditors and filed insolvency petition, too. On 15.3.2011 Citibank unsuccessfully demanded the claims resulting from hedging derivatives in the amount of CZK 212 million to be paid (SALEZA, a.s., 2010).

Finally on 18.3.2011 rating was cancelled due to incapability of agencies to monitor situation.

In addition, management of Bestsport filed insolvency petition for Bestsport on 31.3.2011 and thus made the repayment of loans unlikely (SALEZA, a.s., 2010).

On the top of that 15.4.2011 trustee of bonds issuance BNY Mellon Corporate Trustee Services Limited send a letter demanding immediate repayment of interest and notional.

Additionally, on 25.3.2011 Aleš Hušák, CEO and chairman of the board of Sazka at that time, joined and filed insolvency petition as well. Finally on 29.3.2011 insolvency⁶⁶ was announced.⁶⁷

6.4. Straight-bankruptcy resulting in going concern

Josef Cupka was appointed as insolvency trustee. First committee of creditors was summoned on 26.5.2011. Six members were appointed into committee of creditors. Creditor n 1 Moranda, a.s., creditor n 3 SIDERIUS HOLDINGS LIMITED, creditor n 8 KKCG STRUCTURED FINANCE LIMITED, creditor n 15 GTECH Global Services Corporation Limited, creditor n 16 Česká spořitelna, a.s. and creditor n 1506 THE BANK OF NEW YORK MELLON.

Sazka's CEO employed self-defendant technic and tried to borrow CZK 2,5 billion from GLADIOLUS, a.s.⁶⁸ As this attempt came late, and it was easily destroyed. Such an action was not approved by creditor's committee.

Number of biggest creditors as KKCG and PPF look with favor to reorganization. The registered claims were in the amount of CZK 15 billion⁶⁹ (all the bonds were immediately due to payment) (Smrčka, 2013).

Nevertheless, court announced straight-bankruptcy. The straight-bankruptcy was in a form of auction of whole firm according to § 290 of IA. This way the continuation of the whole firm was assured. De iure Sazka went through bankruptcy, however de facto it was reorganization.

KKCG's and PPF's joint venture offered the highest bid in the amount of CZK 3,81 billion. On 1. 11. 2011 deal was closed (Cupka, 2015).⁷⁰ Subsequently in 2012 KKCG and PPF became new owners of Sazka as well as of Bestsport. Roles slightly changed later.

The price for Sazka can be considered as a bargain given that after only twelve months KKCG purchased PPF's share (50%) allegedly for CZK 5,6 billion (Motejlek, 2012). Afterwards in 2013 PPF purchased KKCG's 43% share in Bestsport allegedly for CZK 600 million⁷¹ and thus became

⁶⁶ All three criterions were met.

⁶⁷ Insolvency proceedings n MSPH 60 INS 628 / 2011.

⁶⁸ GLADIOLUS, a.s. was joint venture of Martin Ulčák's E-Invest (owner tobacco shops that run 243 of Sazka's terminals) and Penta.

⁶⁹ Only CZK 4,409 billion as secured.

⁷⁰ Penta offered CZK 5,1 billion, however not through auction because of the inconvenient purchase agreement.

⁷¹ That would give arena the value of CZK 1,4 billion close to the value estimated by E & Y Valuations

majority owner with 86% of shares (Novotný, 2013). Minority shareholders were squeezed out in 2015.

6.5. Sazka's debt paying ability before bankruptcy

As Sazka's core business is lottery and bets, where sales are cash based the assumption of no credit sales seems reasonable. Moreover, under the term sales we would consider the revenues from core business only (lottery).

6.5.1. Sazka's capital and assets structure

Sazka's funding consist of long-term liabilities that accounted for more than 50% of the whole balance for period 2004-2010. Long-term liabilities were created almost solely by issued debt, mainly in form of bonds. The growth of current liabilities during last year is given by defaulted loans that were due immediately.⁷²

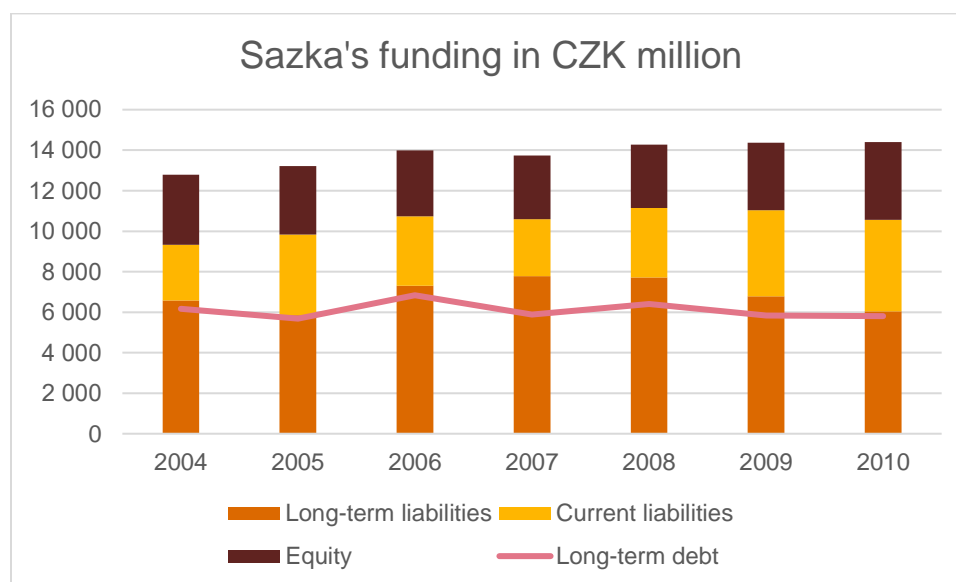


Figure 12 Sazka's funding 2004-2010, source SALEZA, a.s.'s AR 2004-2010

With regards to such a huge amount of debt I consider it interesting, that only collateral provided to bond owner's was Sazka's headquarters⁷³ with book value CZK 691 million in 2010. This seems

S.T.O.

⁷² Sazka unsatisfied with assignment of claims took legal action and sued banks for damage of reputation in amount equivalent to loans and thus influenced created receivables.

⁷³ Building and land.

a bit insufficient to me. Apart from building, Sazka signed blanco promissory notes, however this form of collateral hardly provides ring-fenced assets.

To achieve $\frac{\text{equity}}{\text{liabilities}} = 1$ ratio proposed by Kislingerová, et al. (2010) is quite distant from reality. In 2010 this ratios was 0,36.

Assets alike were created mainly by long-term assets, although again I see the problem in structure of them. Majority of long-term assets were intercompany loans provided to OSZO and Bestsport.

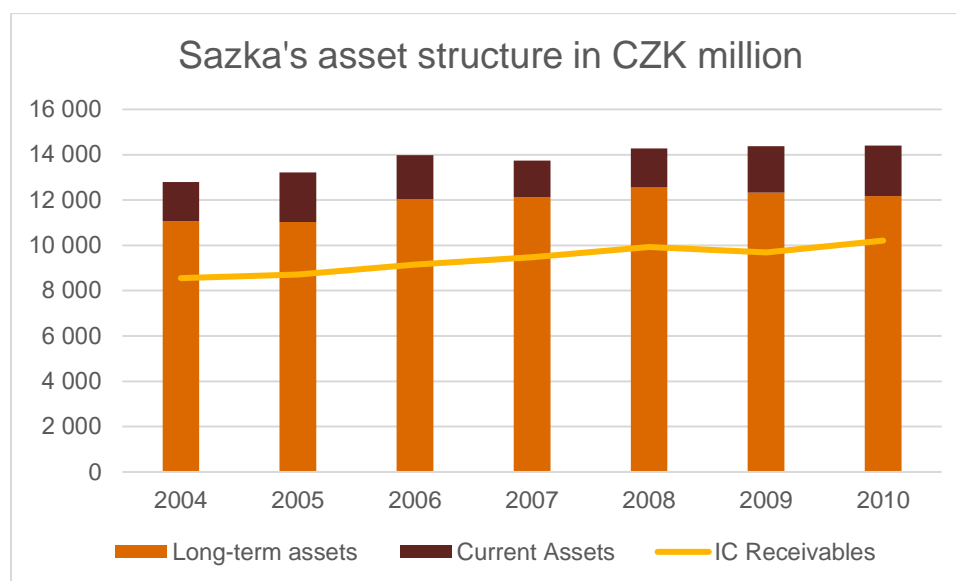


Figure 13 Sazka's asset structure 2004-2010, source SALEZA, a.s.'s AR 2004-2010

What is more, there were no allowances created for intercompany receivables. It is common accounting policy to not create allowances for intercompany receivables, however as annual report in 2006 note the existence if is issue with settlement of those receivables I consider it appropriate to create allowances for such receivables. The role of auditor may be questioned in this case.

6.5.2. Sazka's liquidity before bankruptcy

Sazka's working capital was highly negative and its evolution in period 2004-2010 made it even worse. The issue is that from beginning SAZKA Arena did not have stable financing. It was financed through short-term loans. With regards to exceeding the original budget it would be hard to ensure a stable financing before construction was finished.

Table 16 Sazka's working capital in CZK million, own calculation, source SALEZA, a.s.'s AR 2004-2010

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| Current assets | 1 713 | 2 197 | 1 941 | 1 606 | 1 714 | 2 042 | 2 233 |
| Current liabilities | 2 757 | 3 992 | 3 424 | 2 811 | 3 418 | 4 262 | 4 520 |
| Working capital | -1 044 | -1 795 | -1 484 | -1 205 | -1 704 | -2 220 | -2 287 |

Even though current liabilities are inflated by short-term debt, netting with current investments would not be helpful, since there are almost none.

The problems with short-term liquidity are observable from current ratio as well. The ratio is not even approaching recommended value (2). Firm is not able to cover its short-term obligations with short-term assets. The closest industry in this measure is food with 1 (Brealey, et al., 2011 p. 722). As (Beaver, 1966) mentioned ratio is relatively stable no matter whether the firm is healthy or not.

Table 17 Sazka's liquidity ratios, own calculation, source SALEZA, a.s.'s AR 2004-2010

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------|------|------|------|------|------|------|------|
| Current Ratio | 0,62 | 0,55 | 0,57 | 0,57 | 0,50 | 0,48 | 0,49 |
| Quick ratio | 0,35 | 0,19 | 0,31 | 0,30 | 0,22 | 0,19 | 0,14 |
| Cash Ratio | 0,10 | 0,10 | 0,15 | 0,12 | 0,15 | 0,11 | 0,07 |

Quick ratio is below recommended value (1) as well. On the top of that, there is an issue with receivables. Sazka has intercompany receivables in the value of CZK billions amongst short-term receivables. If I were a bank analyst I would omit those, as Sazka stated already in 2006, that there is issue with them being paid. So I did, therefore the intercompany receivables are omitted.⁷⁴

Very low level of liquid assets is further demonstrated by very low cash ratio. There is obviously no industry with so levels of cash ratio apart from retail, where this ratio may be biased by market power of retailers.

Despite the problems with liquidity, Sazka survived six years.⁷⁵ This is indicating strong ability to obtain short-term financing from banks.

⁷⁴ In 2010 intercompany receivables were CZK 6,42 billions from Bestsport and CZK 3,8 from OSZO (Saleza AR 2010)

⁷⁵ It may have been even more if the hostage takeover did not occur

6.5.3. Sazka's leverage before bankruptcy

Long-term debt⁷⁶ equity ratio experienced its peak in 2006 when new bonds were issued, but in general it was mainly stable oscillating between 60% and 67%. In comparison with other industries the ratio exceeding 60% could be found only in food industry, other industries have in general lower values. Therefore we can conclude that Sazka had immense long-term debt.

In general, the same applies to long-term debt-equity ratio with experiencing its peak with issuance of new bonds when long-term debt was 210% of equity.

Sazka was short-term illiquid and used huge short-term debt, as two above mentioned measures ignore short-term debt it may be more suitable to use total debt ratio. Total debt ratio is showing that debt accounted for more than 70% of total balance sheet that is quite a lot.

Table 18 Sazka's debt ratios, own calculation source SALEZA, a.s.'s AR 2004-2010

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-----------------------------|------|------|------|------|------|------|------|
| Long-term debt ratio | 0,64 | 0,63 | 0,68 | 0,65 | 0,67 | 0,64 | 0,60 |
| Long-term debt-equity ratio | 1,78 | 1,68 | 2,10 | 1,87 | 2,05 | 1,75 | 1,51 |
| Total debt ratio | 0,73 | 0,74 | 0,77 | 0,77 | 0,78 | 0,77 | 0,73 |
| Times-interest-earned | 4,27 | 3,88 | 4,09 | 3,17 | 2,74 | 2,89 | 3,22 |
| Cash coverage | 4,69 | 4,10 | 4,32 | 3,28 | 2,88 | 3,08 | 3,40 |

Times-interest-earned ratio is slowly falling even though the EBIT was attaining the value of CZK 2 billion. Fall is due to growing interest payments. It is interesting that this ratio is reaching, sometimes exceeding recommended value (2-3).

Despite the fall cash coverage ratio, the EBIT with depreciation, is even more emphasizing ability of Sazka to pay the interests.

6.6. Sazka's performance and efficiency before bankruptcy

Performance of Sazka and its breakdown between years 2004-2010 is measured by ROA and ROE and will be compared across various industries.⁷⁷

⁷⁶ Deposits for terminals, long-term leases and other long-term obligations are included in long-term debt.

⁷⁷ Potential buyers are private equity firms investing in various industries, therefore this comparison seems reasonable.

- ROA

ROA higher than 10% is surpassing all other industries compared with data provided by Brealey, et al. (2011 p. 722). Industries with highest ROA are food (10,5%), meals and pharmaceuticals (10,1%).

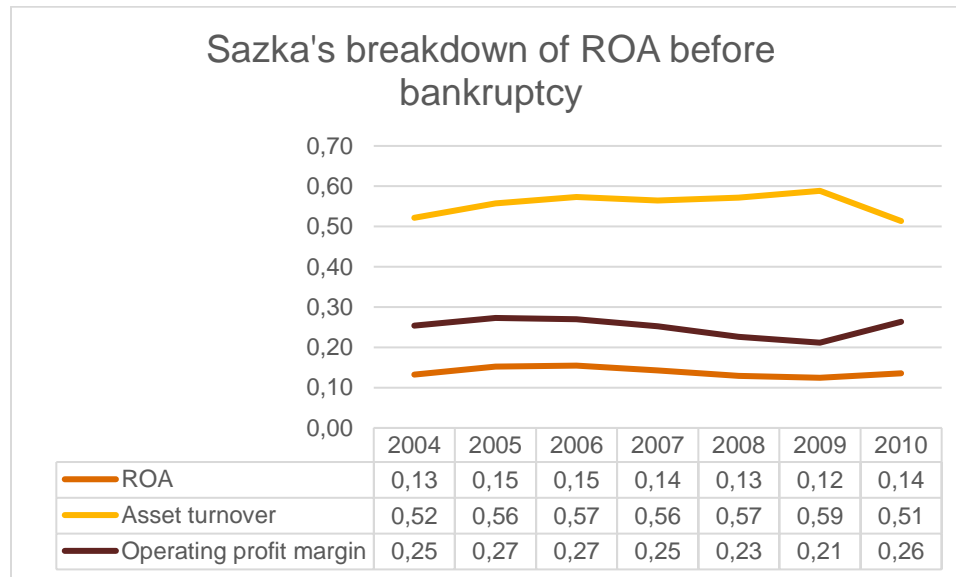


Figure 14 Sazka's ROA before bankruptcy, own calculation source SALEZA, a.s.'s AR 2004-2010

As we can see in table high ROA consist of incredibly high asset turnover. On the top of that Sazka is very efficient with operating margin exceeding 20% for the whole period. That is very rare, the industry closest to Sazka's value is pharmaceuticals (15,9%).

From this point of view Sazka had high profit margin, probably due to its exclusivity given by license to run lottery. This was even multiplied by high asset turnover. Given the fact that assets were inflated with issued bonds the sales were considerably good.

- ROE

Sazka's ROE showing significantly higher return than other industries. Either pharmaceuticals (29,2%) (Brealey, et al., 2011 p. 722), that are considered to be the most profitable are not even approaching Sazka's return on equity. Sazka's ROE is oscillating between 37% and 52% for the whole period.

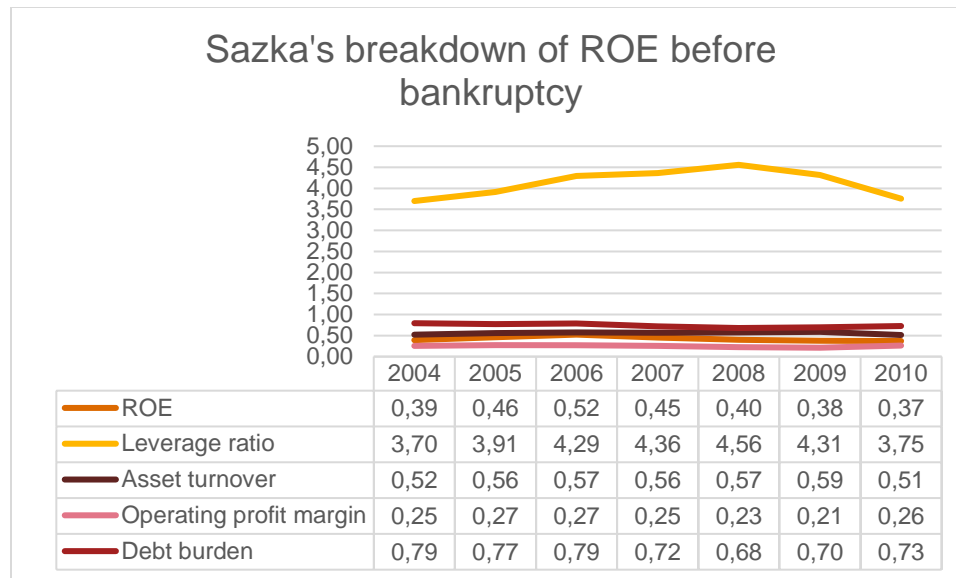


Figure 15 Sazka's ROE before bankruptcy, own calculation source SALEZA, a.s.'s AR 2004-2010

DuPont analysis is showing us, that ROE is mainly influenced by surreal leverage. This is the main driver of Sazka's ROE. Even though debt burden is quite high other ratios are surpassing other industries so that Sazka's ROE is immense.

Sazka is non-manufacturing company therefore there is no sense in analyzing its inventory turnover. Besides Sazka standalone had none inventory for period 2004-2010.⁷⁸ Based on structure of receivables and payables it is not reasonable to calculate their turnover either.

6.7. Sazka's bankruptcy indicators

Above mentioned bankruptcy indicating models are going to be used in order to find out, whether the bankruptcy could have been expected or not.

6.7.1. Sazka's Altman's Z score

As mentioned above Sazka is non-manufacturing company, however question arise whether Czech Republic is emerging market or not. Certain agencies are classifying Czech Republic as emerging others as developed. According to income per capita Czech Republic is classified as emerging market (2016), therefore it seems reasonable to calculate both. Nonetheless, I believe, that Sazka should be classified based on non-manufacturing Z score.

⁷⁸ On the consolidated level the only inventory recorded were wine bottles from Kolby a.s.

As we can see Z score for emerging markets (Z''') would classify Sazka as good company with no issues. The opposite is obvious from Z score for non-manufacturers (Z''), that would put Sazka into grey zone amongst at 2004, 2006, 2007, however in 2006, 2007 the score just slightly passed the boundary. Moreover, in 2005, 2008, 2009 and 2010 Sazka is rated as bankruptcy approaching firm.

Table 19 Sazka's Altman's z score, own calculation, source SALEZA, a.s.'s AR 2004-2010

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-----------------------------|------|------|------|------|------|------|------|
| Z'' for non-manufacturers | 1,39 | 1,07 | 1,18 | 1,19 | 0,85 | 0,65 | 0,87 |
| Z''' for emerging markets | 4,64 | 4,32 | 4,43 | 4,44 | 4,10 | 3,90 | 4,12 |

The rating in 2006 and 2007 may be influenced by additional financing from new bond issuance in 2006. From this point of view Altman's Z score for non-manufacturers seems to be working.

6.7.2. Sazka's INFA

Index developed especially for Czech companies is not giving us a firm ground to decide whether Sazka was heading towards bankruptcy or not.

Table 20 Sazka's IN05 before bankruptcy, own calculation, source SALEZA, a.s.'s AR 2004-2010

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------------|------|------|------|------|------|------|------|
| Index IN05 | 1,09 | 1,15 | 1,17 | 1,08 | 1,00 | 0,99 | 1,04 |

Based on IN05 values the company lies in the grey zone. That means bankruptcy with 51% and 71% of value creation. Not surprisingly, IN05 more or less confirms great performance as the ratio with greatest weight is very similar ROA.

6.7.3. Sazka's Kralicek's quick test

On the one hand ratios taking into account the debt or capital structure are assessing Sazka as very weak company that is jeopardized by bankruptcy. On the other hand ratios based on performance are assessing Sazka as very good company.

Table 21 Sazka's Kralicek's Quick test before bankruptcy, own calculation, source SALEZA, a.s.'s AR 2004-2010

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-----------------|------|------|------|------|------|------|------|
| Assets / Equity | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Liabilities / Operating CF | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EBIT / Assets | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Operating CF / Sales | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Kralicek's Quick Test mark | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Kralicek's Quick Test classification | average | average | average | average | average | average | average |

Unfortunately, overall Sazka's mark is average company. Average is not result that would indicate approaching bankruptcy and therefore Kralicek's quick test is not really helpful.

6.8. Aftermath⁷⁹

Till now four lawsuits against the sale of company were filed, three of them were already dismissed.

Sazka's ROA⁸⁰ decreased below 10% after bankruptcy. That is still quite good number. Decrease is mainly due to decrease in operating profit margin to 12%. Change in profit margin is mainly due to low level of net income, while sales literally skyrocketed to CZK 11 billion (from 7,4 in 2010).

Although asset turnover experienced sharp rise (from 52% to 75%). Due to above mention changed in sales, while assets remained almost same.⁸¹

⁷⁹ I will assess Sazka's performance after bankruptcy for years 2013-2015, as newer annual reports are not available. For years 2011, 2012 there were still changes in ownership of Sazka and its subsidiaries and therefore figures are misleading. Furthermore, 85% value from reorganizations and mergers is usually extracted within first two years, therefore the period 2013-2015 seems reasonable (Ang, 2015).

⁸⁰ For performance being comparable with above calculated one, only sales from lottery are being taken into account, however sales from betting business experienced substantial rise.

⁸¹ (SAZKA a.s., 2015), (SAZKA a.s., 2014), (SAZKA a.s., 2013), (SAZKA a.s., 2012), (SAZKA a.s., 2011), (SALEZA, a.s., 2011)

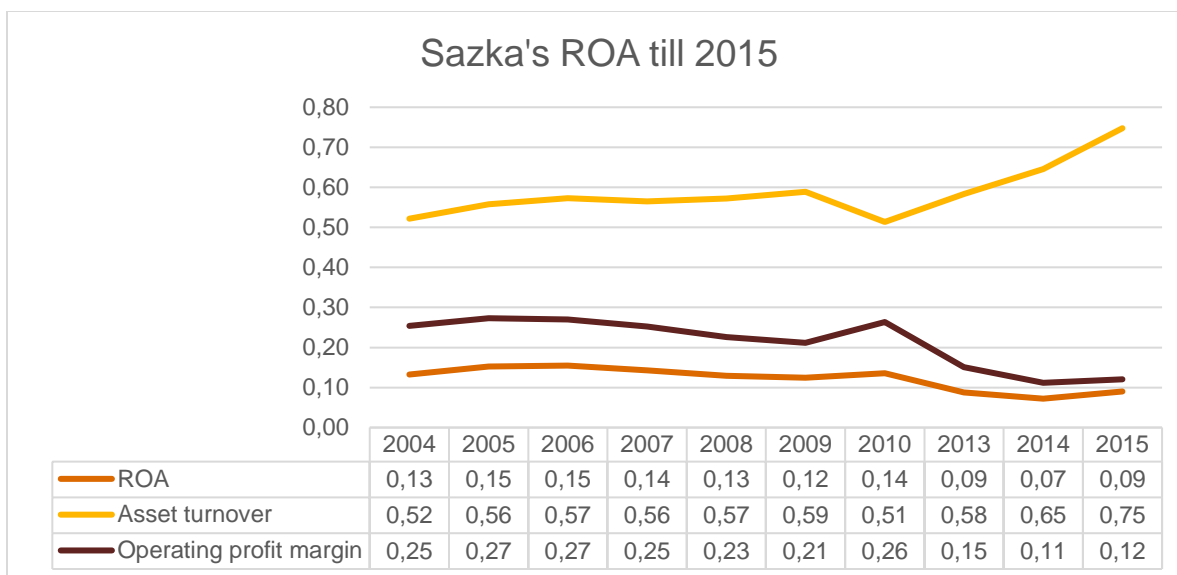


Figure 16 Sazka's ROA comparison till 2015, own calculation, source SALEZA, a.s.'s AR 2004-2010, SAZKA a.s.'s AR 2011-2015

Sazka's ROE decreased as well. The main originator of this change is lower leverage ratio. Given the over indebtedness of Sazka in 2010, change in debt level could have been expected.⁸² With lower debt level interest cost are lower, too. Besides, net income decreased as well, therefore debt burden level remained almost unchanged.

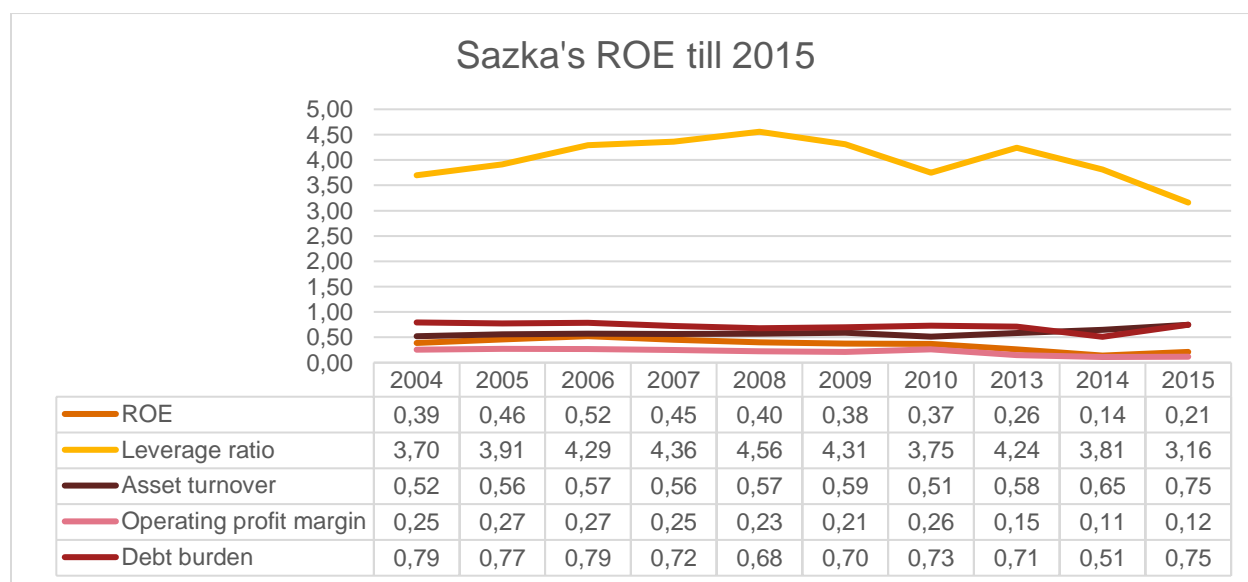


Figure 17 Sazka's ROE comparison till 2015, own calculation, source SALEZA, a.s.'s AR 2004-2010, SAZKA a.s.'s AR 2011-2015

⁸² KKCG is providing Sazka with additional funding. In 2015 loan was CZK 2,1 billion bearing CZK 177 million as interest (SAZKA a.s., 2015).

Based on above mentioned facts, Sazka's performance seems to be worse than it used to be, however still very good if compared across industries. What is more sales are growing rapidly and company has gained bigger market share in betting business. Even though profits are smaller I believe that current shareholders benefit also from synergies in their lottery holding.⁸³

6.9. Findings

Sazka's story is one of the most beautiful corporate takeovers in Czech history that is probably fully compliant with law.

From the very beginning there is obvious agency situation. Sazka borrowed short-term funds in order to finance the project of new arena. In the beginning the amount was quite small compared to Sazka's EBIT, creditors have small incentive to monitor the outcome of project and therefore the bank's surveillance was quite loose.⁸⁴ The problem escalated when arena's budgeted costs were three times overrun. Probably due to certain expropriation of wealth during construction.

Another agency relationship is between shareholders and Sazka's CEO at that time. Mr. Hušák is experienced manager and probably capable one. Although, Sazka's board members seemed to be quite opposite. They were either inexperienced with governing⁸⁵ such an entity or easily to be manipulated. The first is possible given the fact that majority of them was from civil society organizations, the latter is possible as well given the perks that CEO had.

Mr. Hušák was the agent act in his own good. He filed for bankruptcy as last one and probably only in order to have a chance to compile reorganization plan. The problem is that at that time he faced more experienced and aggressive principals – corporate raiders.

Moreover Mr. Hušák employed few self-defendant technics. First he tried to obtain additional financing from Gladiolus. Afterwards, when this was dismissed by new principals, he requested MF to suspend Sazka's lottery license during insolvency proceedings and thus make Sazka less

⁸³ KKCG recently established international lottery and gambling holding acquiring shares in Greek's OPAP, Austrian's Casinos Austria and was granted licence to run lottery in Italy (SAZKA Group, 2016).

⁸⁴ Only collateral was Sazka's headquarters.

⁸⁵ Shleifer, et al. (1997 p. 737) see corporate governance as a subject that "deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment."

valuable. Both of those attempts were in his own good, not in creditor's, not in Sazka's, not in shareholder's. Excellent misuse of principal-agent relationship.

As a consequence, new principals (KKCG, PPF) opt for the easiest way to take over the company. They forced company into straight-bankruptcy instead of reorganization, however with aim to preserve it. Interesting fact is, that sale of a whole company is possible within reorganization as well. The situation may have been influenced by the fact that in Czech Republic there are not many opponents who can outbid KKCG and PPF joint venture.⁸⁶ On the top of that, it was probably the cheapest option. Paid price (CZK 3,81 billion) is significantly less than CZK 15 billion registered claims.

The desire to avoid negotiations with creditors and knowledge of their financial capacity probably lead KKCG and PPF to opt for straight-bankruptcy. As a result, principal opt for *de iure* HBC with the aim of preserving the company, so that it is comparable to bankruptcy with SBC.

The proceedings were quite fast. Starting on 17.1.2011 (first petition) and ending with first partial settlement was done on 15.6.2012, lasted only 515 days (1,4 year).⁸⁷ Average recovery rate (same for secured and unsecured, as they are settled proportionally) was on average 30% of their claims.⁸⁸ Another important metric is cost of estate. Author is not able to estimate creditor's expenses in form of lawyers, judicial fees, consultants etc. Costs will be high that is sure, just IT was entitled to approximately CZK 45 million.⁸⁹ Nevertheless, ratio of 17%, applicable to Czech Republic for last years, give us CZK 648 million. *De iure* legal entity went through bankruptcy but the core business was sold as a whole and continue till this day.

Lottery is very specific business and there are few lottery companies, therefore the comparison of performance was made with other industries. Even though Sazka was over indebted and illiquid its performance was outstanding. Sazka was operating with high leverage, high profit margin and high asset turnover at the same time and thus generated awesome ROA and ROE that is probably the reason for such an attention of Czech billionaires. The fact, that the problem of company was

⁸⁶ Besides in 2010 MF granted licence to lottery games to Penta's sporting bets subsidiary Fortuna (SALEZA, a.s., 2010). Based on this fact I assume that Penta's actions were only to prolong the insolvency proceedings of Sazka in order to gain market share for own company.

⁸⁷ Based on doing business methodology.

⁸⁸ Own calculation based on data from Cupka (2015).

⁸⁹ IT remuneration is given by law and decree No. 313/2007 Coll.

the debt not the business itself may push KKCG and PPF in the direction of straight-bankruptcy as the reorganization was not needed just restructuring of claims. Current Sazka's ROA and ROE are lower than in 2010 yet still exceeding other industries.

Specific of lottery business is even more observable from widely recommended bankruptcy prediction models. Altman's Z score for non-manufacturers seems to be the best to rate Sazka. It predict approaching bankruptcy in 2005, 2008, 2009 and 2010. Altman is followed by IN financial analysis (IN05) that revealed Sazka's ability to generate value for owners, however indicate bankruptcy with probability of 51%. The least successful model is Kralicek's Quick test, that rate Sazka as average company overall – not revealing any problems.

Explanation of such obstacles is already mentioned above. There are few lottery companies in every country and therefore they do not fit models developed on broad range of industries. Besides lottery companies have specific asset structure – no inventory, no factory and in Sazka's case almost no own brick-and-mortar shops.

Conclusion

“The worst bankruptcy in the world is the person who has lost his enthusiasm.” ~ H. W. Arnold

In this thesis I wanted to introduce Czech insolvency proceedings with applicable agency theory implications and financial analysis ratios, that could be used in order to assess firm's liquidity, indebtedness, performance and efficiency. Afterwards I applied above mentioned measures in case study of Sazka in order to find out what was the originator of its insolvency and whether it could have been expected. I consider this important due to the fact that in current fast pacing economy new industries are created and old ones are becoming obsolete. This lead to mulitple threats of bankruptcies or opportunities to reorganize firms and thus find socially preferable solution.

Life cycle of business ends with two alternatives, either company goes bankrupt or is reorganized. Both of those alternatives transform the asset claims of shareholders and debtors. Shareholders are left with null claims, however debtors may have fixed or hybrid claims dependant on whether their claim is secured or not.

Bankruptcy itself vary from state to state not only from legal point of view, but by efficiency in execution. Bankruptcy proceeding should be short, with reasonably low administrative costs and high recovery rate. From this point of view Czech Republic made huge step forwards after accepting new Insolvency Act. The country is considered to be 26th best in the world in processing insolvency. Insolvency in Czech Republic is supposed to last 2,1 years and secured creditors are supposed to recover 66,5% of their claims, however with the costs amounting to 17% of debtor's estate.

While running business multiple type of agency relationships are created. One of those is if company borrows money and became agent. Lender in a position of principal should apply measures to secure its claims, even though they may be connected with controlling costs. Secured lender is tempted towards straight-bankruptcy, however it may benefit more from potential future business with debtor, therefore the possibility to rescue the firm may be favourable. Bankrutpcy with soft budget constraint increases the efficiency of credit markets, however only in developed ones. In order to assure the credit that his position is secured the bankruptcy law must be flawless.

Otherwise debtor tend to expropriate the wealth and creditor would never risk its claims just to give the debtor a chance to be reborn.

Czech insolvency proceedings are obviously fine in this way, they offer the possibility of bankruptcy due to insolvency, over indebtedness or impending insolvency. The solution may be either straight-bankruptcy or reorganization. Insolvency judge and trustee play important role in insolvency proceeding. They should be just and fair, but to whom? They are in role of agent, but who is principal, creditors, debtor's shareholders? Overall, it is better to avoid doing business with company heading towards bankruptcy. Counterparties should assess the health of each other.

For this purpose they can use financial analysis ratios that were introduced in sixth chapter. What is more, approaching bankruptcy is to be revealed with bankruptcy models.

Financial analysis of Sazka revealed Sazka's over indebtedness. On the one hand, Sazka's long-term liabilities accounted for more than half of balance sheet. Moreover, Sazka was short-term illiquid. Over indebtedness was caused by Sazka's attempt to finance construction of O₂ Arena (former SAZKA Arena) by issuing debt in the value of EUR 215 million. On the other hand Sazka's business model, based on brand and lottery license, was able to generate high profits. Almost not influenced by Sazka's financial situation. Sazka return on assets was 14% and return on equity was 37% in 2010. Sazka had 95% market share in 2010 and generated revenues of CZK 7,828 billion resulting in CZK 1,424 billion of profit.

Although it is important to bear in mind that models are estimated on certain "structure of data set" and thus the application to different structure may be misleading. Altman estimated whole range of ratios. The best for our case study seem to be the ones for emerging markets and for non-manufacturers. Altman's z score for emerging markets did not reveal Sazka's problem, probably due to the nature of Sazka's business. Different results were given by Altman's model for non-manufacturers that classified Sazka as bankruptcy approaching in 2005, 2007, 2008, 2009, 2010. INFA index IN05, estimated on Czech companies, is not suitable for Sazka as its business model is one of a kind and financial ratios alike. IN05 put Sazka into grey zone meaning that it would generate value for shareholders with 71% probability and is threatened by bankruptcy with 51% probability. Kralicek's Quick test, estimated on German and Austrian companies, had the worst prediction classifying Sazka as average company. In other words not revealing weakness of Sazka.

Overall, Czech Insolvency Act provides firm guidelines sufficiently protecting creditor and yet giving the debtor a chance to reorganize. Although, future amendments of Insolvency act should be discussed with economists, too. Furthermore, bankruptcy is always obvious from financial statements reported on year end. The bottleneck is which model should be used to reveal it. Clearly, models estimated on manufacturers in USA cannot be applied to non-manufacturers in Czech Republic. I think it may be interesting to estimate specific models for specific industries as lottery businesses or betting businesses.

References

- Akerlof, George Arthur. 1970.** The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*. 3, 1970, Vol. 84.
- Altman, Edward I. 1968.** Financial Ratios. Discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*. 1968, Vol. 23, 4, pp. 589-609.
- Altman, Edward I. 2002.** Corporate Distress Prediction Models in a Turbulent Economic and Basel II Environment. 2002.
- . **1983.** *Corporate Financial Distress*. s.l. : Wiley Interscience, 1983.
- Altman, Edward I., et al. 2017.** Financial Distress Prediction in an International Context: A Review and Empirical Analysis of Altman's Z-Score Model. *Journal of International Financial Management & Accounting*. 2017, Vol. 28, 2, pp. 131-171.
- Ang, Ser Keng. 2015.** *Mergers & Acquisitions FNCE311 - course handout*. Singapore : s.n., 2015.
- Beaver, William H. 1966.** Financial Ratios As Predictors of Failure. *Journal of Accounting Research*. 1966, Vol. 4, pp. 71-111.
- Beaver, William H., McNichols, Maureen F. and Rhie, Jung-Wu. 2005.** Have Financial Statements Become Less Informative? Evidence from the Ability of Financial Ratios to Predict Bankruptcy. *Review of Accounting Studies*. 2005, Vol. 10, pp. 93-122.
- Begley, Joy, Ming, Jin and Watts, Susan. 1997.** Bankruptcy Classification Errors in the 1980s: An Empirical Analysis of Altman's and Ohlson's Models. 1997, pp. 1-33.
- Biais, Bruno and Recasens, Gilles. 2002.** Corrupt Judges, Credit Rationing and the Political Economy. 2002, p. 30.
- Black, Fischer and Scholes, Myron. 1973.** The Pricing of Options and Corporate Liabilities. *Journal of Political Economy*. 1973, Vol. 81, 3.
- Bonin, John and Schaffer, Mark E. 1999.** Revisiting Hungary's Bankruptcy Episode. 1999.
- Brealey, Richard A. and Myers, Stewart C. 1991.** *Principles of Corporate Finance*. s.l. : McGraw-Hill, Inc., 1991. ISBN 0-07-007405-4.
- Brealey, Richard, Myers, Stewart and Allen, Franklin. 2011.** *Principles of Corporate Finance*. 10e. New York : McGraw-Hill/Irwin, 2011. Printed on acid-free paper. ISBN 978-0-07-353073-4.
- Creditreform s.r.o. 2017.** creditreform. *creditreform*. [Online] Creditreform s.r.o., 2017. [Cited: 8 17, 2017.] <https://www.creditreform.cz/index.html>.
- Cupka, Josef. 2015.** *Insolvency proceedings n MSP H 60 INS-628 / 2011 final report*. Prague : Insolvency register, 2015.
- Gibson, Charles H. 2011.** *Financial Reporting and Analysis*. 12e. s.l. : Souht-Western Cengage Learning, 2011. ISBN 10: 1-4390-8086-0.
- Grice, John S. and Dugan, Michael T. 2001.** The Limitations of Bankruptcy Prediction Models: Some Cautions for the Researcher. *Review of Quantitative Finance and Accounting*. 2001, Vol. 17, pp. 151-166.
- Hart, Oliver. 2000.** Different Approaches to Bankruptcy. 2000, p. 18.

Insolvency Act No. 182/2006 Coll.

Insolvency proceedings n MSPH 60 INS 628/2011.

Janda, Karel. 2006. Agency Theory Approach to Contracting between Lender and Borrower. *Acta Oeconomica Pragensis*. 3, 2006, Vol. 14.

Janda, Karel and Rakicova, Annat. 2014. *Corporate Bankruptcies in Czech Republic, Slovakia, Croatia and*. Munich : s.n., 2014.

Janda, Karel. 2009. Bankruptcies with soft budget constraint. *The Manchester School*. 4, 2009, Vol. 70, pp. 430-460.

— **2004.** Bankruptcy Procedures with Ex Post Moral Hazard. 2004.

— **2006.** Lender and Borrower as Principal and Agent. *Working Paper 24/2006, IES FSV UK, Prague*. 2006.

Jensen, Michael C and Meckling, William H. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*. 3, 1976, Vol. 4, pp. 305-360.

Johnson, Simon, et al. 2000. Tunneling. *The American Economic Review*. 2000, Vol. 90, 2, pp. 22-27.

Kislingerová, Eva, et al. 2010. *Manažerské finance*. 3rd. Praha : C. H. Beck, 2010. ISBN 978-80-7400-194-9.

Knot, Ondřej and Vychodil, Ondřej. 2006. Czech Bankruptcy Procedures: Ex-post Efficiency View. 2006.

— **2005.** What drives optimal bankruptcy law design? *Finance a úvěr - Czech Journal of Economics and Finance*. 2005, 55, pp. 110-123.

Kornai, János. 1979. Resource-constrained versus Demand-constrained System. *Econometrica*. 4, 1979, Vol. 47.

Kornai, János, Maskin, Eric and Gérard, Roland. 2003. Understanding the Soft Budget Constraint. *Journal of Economic Literature*. 4, 2003, Vol. 41, pp. 1095-1136.

Kralicek, Peter. 1991. *Grundlagen der Finanzwirtschaft*. Wien : Ueberreuter, 1991. ISBN 10: 3800034158.

Landa, Martin. 2009. *Ekonomika insolvenčního řízení*. 1st. Ostrava : Key Publishing, 2009. p. 426. ISBN 978-80-7418-031-6.

Machek, Ondřej. 2014. Long-term Predictive Ability of Bankruptcy Models in the Czech Republic: Evidence from 2007-2012. *Central European Business Review*. 2014, Vol. 3, 2.

Marek, Petr. 2007. Vliv teorie zastoupení na teorii podnikových financí. *Český finanční a účetní časopis*. 2, 2007, Vol. 2.

Merton, Robert C. 1974. On the Pricing of Corporate Debt: The Structure of Interest rates. *The Journal of Finance*. 29, 1974, Vol. 2.

Modigliani, Franco and Miller, Merton H. 1958. The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*. 1958, Vol. 48, 3, pp. 261-297.

Motejlek, Miroslav. 2012. motejlefskocdopole. *motejlefskocdopole*. [Online] motejlefskocdopole.com, s.r.o., 12 18, 2012. [Cited: 8 17, 2017.]

<https://www.motejlejskocdopole.com/karel-komarek-potvrdil-ze-ma-srdce-knizete-rohana-zapltil-5565-miliard-korun-a-ma-tak-celou-sazku/>.

Myers, Stewart C. 1984. The Capital Structure Puzzle. *The Journal of Finance*. 1984, Vol. 39, 3, pp. 575-592.

Neumaier, Ivan and Neumaierová, Inka. 2005. Index IN05. [book auth.] Petr Červínek. *Sborník příspěvků mezinárodní vědecké konference "Evropské finanční Systémy"*. Brno : Ekonomicko-správní fakulta Masarykovy university, 2005, pp. 143-148.

Neumaierová, Inka and Neumaier, Ivan. 2014. INFA Performance Indicator Diagnostic System. *Central European Business Review*. 2014, Vol. 3, 1, pp. 35-41.

Novotný, Pavel. 2013. idnes. [Online] MAFRA a.s., 11 12, 2013. [Cited: 8 17, 2017.] http://ekonomika.idnes.cz/o2-arena-patri-petru-kellnerovi-dmx-/ekoakcie.aspx?c=A131112_132005_ekoakcie_fih.

Ohlson, James A. 1980. Financial Ratios and the Probabilistic Prediction of Bankruptcy. *Journal of Accounting Research*. 1980, Vol. 18, 1, pp. 109-131.

Ohlsson-Corboz, Anne-Valérie. 2015. *MGMT 310 Leading New Ventures to Growth - course handout*. Singapore : s.n., 2015.

Prádler, Jan. 2011. Bývalý třetí muž Sazky: Hušák byl jako řidič, co jede na dálnici opilý v protisměru. *Hospodářské Noviny*. Prague, 7 12, 2011.

PricewaterhouseCoopers Česká republika, s.r.o. 2017. pwc. pwc. [Online] PricewaterhouseCoopers Česká republika, s.r.o., 2017. [Cited: 8 10, 2017.] <http://www.pwc.com/cz/cs.html>.

Richter, Tomáš. 2017a. *Insolvenční právo*. Prague : Wolters Kluwer, 2017a. p. 624. ISBN 978-80-7552-444-7.

— **2008.** *Insolvenční Právo*. 1st. Praha : Wolters Kluwer, 2008. ISBN 978-80-7357329-4.

— **2017b.** Někteří soudci neznají ani základy fungování firem. *Česká Pozice*. s.l. : http://ceskapozice.lidovky.cz/nekteri-soudci-neznaji-ani-zaklady-fungovani-firem-f88-/tema.aspx?c=A170404_155731_pozice-tema_lube, April 6, 2017b.

— **2011.** Reorganizing Czech Businesses: A Bankruptcy Law Reform under Recession Stress-Test. *International Insolvency Review*. 2011, Vol. 20, pp. 245-254.

Ross, Stephen Alan. 1973. The Economic Theory of Agency: The Principal's Problem. *The American Economic Review*. 1973, Vol. 62, 2, pp. 134-139.

SALEZA, a.s. 2003. *Annual Report 2003*. Prague : SALEZA, a.s., 2003.

— **2004.** *Annual Report 2004*. Prague : SALEZA, a.s., 2004.

— **2005.** *Annual Report 2005*. Prague : SALEZA, a.s., 2005.

— **2006.** *Annual Report 2006*. Prague : SALEZA, a.s., 2006.

— **2007.** *Annual Report 2007*. Prague : SALEZA, a.s., 2007.

— **2008.** *Annual Report 2008*. Prague : SALEZA, a.s., 2008.

— **2009.** *Annual Report 2009*. Prague : SALEZA, a.s., 2009.

— **2011.** *Annual Report 2011*. Prague : SALEZA, a.s., 2011.

- . **2010.** *Annul Report 2010*. Prague : SALEZA, a.s., 2010.
- SAZKA a.s. 2011.** *Annual report 2011*. Prague : SAZKA a.s., 2011.
- . **2012.** *Annual report 2012*. Prague : SAZKA a.s., 2012.
- . **2013.** *Annual Report 2013*. Prague : SAZKA a.s., 2013.
- . **2014.** *Annual Report 2014*. s.l. : SAZKA a.s., 2014.
- . **2015.** *Annual Report 2015*. Prague : SAZKA a.s., 2015.
- SAZKA Group, a.s. 2016.** *KKCG and EMMA Capital among Members of a Consortium Awarded License to Operate "Lotto", the largest Italian lottery*. Prague : SAZKA Group a.s., 2016.
- Shleifer, Andrei and Vishny, Robert W. 1997.** A Survey of Corporate Governance. *The Journal of Finance*. 2, 1997, Vol. 52, pp. 737-783.
- Shumway, Tyler. 2001.** *The Journal of Business*. 2001, Vol. 74, 1.
- Schönfeld, Jaroslav and Smrčka, Luboš. 2012.** Důvody diskvalifikace sanačního principu v insolvenční praxi. 2012.
- Schönfeld, Jaroslav, Smrčka, Luboš and Arltová, Markéta. 2013.** Příčiny neúspěchu sanačních postupů v insolvenční realitě. *Politická Ekonomie*. 2013, 2.
- Smrčka, Luboš. 2013.** *Ovládnutí a převzetí firem*. 1st. Praha : C. H. Beck, 2013. p. 151. ISBN 978-80-7400-442-1.
- Stiglitz, Joseph Eugene. 2001.** Bankruptcy Laws: Basic Economic Principles. Resolution of Financial Distress – An International Perspective on the Design of Bankruptcy Laws. 1st ed. Washington: World Bank Institute. 1st, 2001.
- Synek, Miloslav, et al. 2000.** *Manažerská ekonomika*. 2nd. Praha : Grada Publishing, 2000. ISBN 80-247-9069-6.
- Taffler, Richard J. and Argawal, Vineet. 2007.** Twenty-five years of the Taffler z-score model: does it really have predictive ability? *Accounting and Business Research*. 2007, Vol. 37, 4, pp. 285-300.
- Taffler, Richard J. 1982.** Forecasting Company Failure in the UK Using Discriminant Analysis and Financial Ratio Data. *Journal of the Royal Statistical Society. Series A (General)*. 1982, Vol. 145, 3, pp. 342-358.
- The Presidents' Council Foundation. 2015.** <http://thepresidentscouncil.org>.
<http://thepresidentscouncil.org>. [Online] The Presidents' Council Foundation, 2015. [Cited: 8 16, 2017.]
<http://thepresidentscouncil.org/are-you-sure-of-which-business-life-cycle-stage-youre-in/>.
- The World Bank. 2017.** www.doingbusiness.org. [Online] The World Bank, 2017. [Cited: 8 10, 2017.]
<http://www.doingbusiness.org/data/exploretopics/resolving-insolvency/frontier>.
- Venyš, Ladislav. 1997.** *Bankruptcy in the Czech Republic*. [NATO Democratic Institutions Fellowship Programme 1995 – 1997] 1997.
- White, Michelle J. 2001.** Bankruptcy Procedures in Countries Undergoing Financial Crises – An International Perspective on the Design of Bankruptcy Laws. 1st ed. Washington: World Bank Institute. 1st, 2001.
- Wikipedia. 2017.** Wikipedia. *Wikipedia*. [Online] 8 17, 2017. [Cited: 8 17, 2017.]
https://cs.wikipedia.org/wiki/Oldrich_Vasicek.

