

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

Department of Economics



DIPLOMA THESIS

Business Plan of Microbrewery Foundation

in the Czech Republic

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Department of Economics

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DIPLOMA THESIS ASSIGNMENT

Fabiánová Aneta

Economics and Management

Thesis title

Business plan of microbrewery foundation in the Czech Republic

Objectives of thesis

The objectives of this diploma thesis are the analysis and evaluation of the aspects influencing the microbrewery foundation in the condition of the Czech Republic.

Methodology

The diploma thesis would be divided into the theoretical and practical part. The theoretical part will be focused on the literature overview and would point out the information needed for the analysis in the practical part. The practical part would be based on the basic environment overview, financial analysis and the evaluation of the results. The environment would be examined with the help of appropriate analysis and the financial part would be based on suitable calculations.

Schedule for processing

The time schedule would be specified during the consultations.

DECLARATION

I hereby declare that I have worked on my Diploma Thesis titled Business Plan of Microbrewery Foundation in the Czech Republic individually and independently. All resources which I have used are listed in bibliography.

In Prague, 30th November 2011

.....

Bc. Aneta Fabiánová

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I would like to state special thank to my supervisor Ing. Tomáš Maier, Ph.D. for his guidance, expert suggestions and valuable recommendations regarding my diploma thesis.

The big thank belongs to my family and friends for their continuous support and especially to my parents for giving me the opportunity of getting university education.

Business Plan of Microbrewery Foundation in the Czech Republic

SUMMARY

The diploma thesis '*Business Plan of Microbrewery Foundation in the Czech Republic*' focuses on the situation of the establishment of microbreweries, under the given condition in the Czech Republic.

The theoretical part of the study provides the information about the origin of the brewing, the situation in the microbrewery environment, the basic theory how to examine the general business environment and also the information about the important aspects necessary for the financial analysis. Subsequently the theoretical aspects are the basis of the practical part which deals with the evaluation of the environment of the brewery industry in the Czech Republic and with the financial analysis. Afterwards, all information are evaluated and summarized and the decision about realization of the project is done.

KEY WORDS

Microbrewery, Environment, Financial Analysis, Investment, Costs, Revenues, Profitability

Podnikatelský záměr založení minipivovaru v České republice

SOUHRN

Diplomová práce na téma '*Podnikatelský záměr založení minipivovaru v České republice*' se zaměřuje na situaci zakládání minipivovarů v daných podmínkách České republiky.

Teoretická část této práce přináší informace o původu pivovarnictví, o situaci v prostředí minipivovarů, základní teorii důležitou pro zkoumání podnikatelského prostředí a také aspekty významné pro tvorbu finanční analýzy. Praktická část uvádí nabyté teoretické znalosti v praxi. Nejprve analýza prostředí a následně analýza finanční přivedou čtenáře k zajímavým poznatkům důležitým k ohodnocení takového projektu. Samotný závěr práce se věnuje diskuzi o výnosnosti a podmínkách realizace projektu.

KLÍČOVÁ SLOVA

Minipivovar, prostředí, finanční analýza, investice, náklady, výnosy, rentabilita

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1. INTRODUCTION

The beer, *'The liquid bread of the Czech nation'* is the phenomenon of the Czech Republic. This popular beverage is traditional and favorite for the Czech citizens and also important for the Czech economy as a whole.

The trend in the overall beer production is increasing. In 2000 the overall world consumption of beer reached 1,374 billion hl and in 2005 it was 1,572 hl. [32, p.18] The financial crisis, as well as other influences, has led to a decrease in beer production. On the other hand the overall expectations of the beer market are positive. As a reflection of the financial crisis, both the economic growth and beer consumption are expected to increase. A higher increase is expected in the lager production. Customers will also tend to choose special beers from the given supply. [59]

The importance of the Czech beer is also noticeable from the behavior of many beer organizations. In 2011, *'The Association of Legal Entities'* was established by the *'Czech Beer and Malt Association'*. The main purpose of this organization is to protect the authenticity of the Czech beer and to preserve the traditional recipes and Czech ingredients. [61]

There is a long tradition of selling the beer in pubs. Nowadays the pubs sell less than 50 % of the produced beer. The beer is for these enterprises very important and creates about 25 % of their revenues. [60] It is very important to mention that the beer quality does not depend only on the production process and good ingredients but also on the logistic process. The research carried out from May 2011 showed the importance of the behavior of gastronomical institutions including restaurants and shops. The research underlined the importance of the influence of well-qualified employees who know how to handle with the beer, maintain the technological appliances and who are familiar with the process of cleaning. [58] This information was also said by Vesely who argued that Brewer brews the beer, but the pub manager makes it. [60]

According to these facts the beer industry looks very advantageous. Especially the increasing demand on the special beer can signify the possibility of the potential market and subsequently the profitability in this field. The following study is based on the idea of financial prosperity and examines wheater the potential microbrewery foundation can be profitable or not. The study focuses on the basis of the business environment especially on the detail study of the accounting and financial situation of the microbrewery establishment.

2. OBJECTIVES AND METHODOLOGY

Objectives

The objective of this diploma thesis is to analyze the aspects influencing the foundation of microbrewery and to explore and describe the whole situation of microbrewery foundation from the accounting and financial point of view. The thesis brings the statement whether the investment is acceptable or not. According to the results the proposal for the possible improvement is suggested. The conclusions might be useful for everyone who would like to set up his/her own business in any field. The secondary objective is to bring an overall idea about the current situation in the microbrewery businesses.

Methodology

The theoretical part of this study is focused on the description of the history of microbreweries, methodology of brewing, introduction to business environment and description of the main financial variables important for analyzing the whole situation. All the data mentioned in the theoretical part were contributed to the analysis in the practical part.

The practical part is based on the examination of the environment. The study of the environment focuses on the data selection, comparison and determination of the most relevant aspects. It is very important to establish the potential advantages and disadvantages of making business in the given environment. This analysis is based on the results from SWOT analysis, 5 Porter's Forces and PEST analysis.

. At the beginning of the financial and accounting analysis the important assumptions were determined. The brewery's production was 700 hl of beer per year and the microbrewery did not export it. It is expected that the whole production was sold. The data analysis has examined the relevant prices, rates and other necessary information needed for the calculation. Firstly, the technical analysis determined the technical needs of the property. Its cost was estimated on the basis of current offers from the companies '*Minibrewery System*', '*Pivo Praha*' and '*Pacovské strojírny*'. To choose the appropriate

way of financing the analysis of loan and leasing was done; and the present value of both types was calculated. According to the comparison of the results and advantages and disadvantages of both possibilities the loan was chosen.

Subsequently the costs and revenues analysis was completed and the price for 1 unit of the product was determined. The production price per 1 liter of beer was calculated as the total costs divided by the total production. One pint of 12° beer costs 30.00 CZK and the same amount of 10° beer costs 24.00 CZK. From all entry data the total revenues and costs were expressed and were the basis for the income tax, profit and cash flow calculations. To prove wheater the investment is profitable or not, net present value and interest rate of return were calculated. The net present value of the investment was compared to the initial property price and the profitability possibility was expressed. Subsequently, with the usage of total assets turnover, debt ratio and profit margin on sales, the financial situation in the future was calculated. On the basis of all results the proposal for improvement of the investment was suggested.

All these data provide the investor with the basic information in order to make a reasonable decision. These data are important for him/her to choose wheater he/she is able to run the investment.

3. LITERATURE OVERVIEW

At the beginning of the following study the meaning of the word ‘*beer*’ has to be expressed. *‘This golden-yellow sparkling beverage with a distinct and smooth flavor of hops and a beautiful thick foam made its way to the entire world.’* [32, p.11] This explanation is very general. The visual aspects as the color, the description of the taste and the widening of the beer all around the world are expressed in clever and simple way.

A little bit broader description is provided by Basarova and Hlavacek who said that beer is an alcoholic beverage made from the cereal malt, water and hops. The typical bitterness is provided by the hops. They also described the differentiation in the production between dark beers and light beers. The light beers are made from the light malt and the dark from dark or caramelized malt. [3, p.8] Maier evaluated this definition as very suitable for the Czech beer and Czech environment. [29, p.35]

The Czech beer could also be characterized as the pale beer which *‘...has a gold color of medium to higher intensity and a weak to medium aroma of pale malt and hops, is sparkling and has white compact foam after it is poured into a glass. Malt and hops dominate its taste. Unusual aromas or flavors are not permissible, only a slight flavor of pasteurization, yeast or esters is acceptable. The beer has medium to high fullness thanks to an unfermented residual extract, with a characteristic difference between the apparent and attainable degree of fermentation. A lower degree of fermentation also means a lower content of ethanol.’* [32, 9.14]

3.1 The Beer Origin

To get an overall overview about the beer industry it is suitable to mention the beer origin. There have been many theories describing the origin of the beer. The following text describes two of them which are dated back to the 10,000 – 15,000 BC and tried to answer the question how was the beer founded. First ‘*story*’ states that someone had forgotten the bowl with the cereal mash in front of the house. Suddenly the rain started and filled in this cup. After some time and on the hot sun the water and the cereal mash started spontaneously fermented. The other ‘*legend*’ answers the same question in the way that

someone bit the bread for sick person and spited it out to the water. And same as in the first story this product started fermented in the given appropriate and hot conditions. [6, p.12]

From these situations it is obvious that the main ingredients for the beer production were bread and water. It has to be underlined that the taste of the ancient beer was really different than it is today. The consistence was thicker and contained small pieces of used ingredients. This was the reason that drinkers had to sip this beverage using some special cups or straws. [6, p.12]

The beer was important in all historical periods and its value was known also in the prehistoric time. Hornsey mentioned: *'Thus, in the field of social psychology, drink has played a more important part than food, especially since the primitive discovery of fermentation, and more latterly, distillation, made ethyl alcohol a constituent of drinkables.'* [13, p.1] From this citation it is obvious that the beer, as well as the other beverages, were not used merely to quench one's thirst, but to also became a part of everyday social life. [13, p.1]

3.1.1 The Origin - Egypt and Mesopotamia

The origin of the beer production comes from Mesopotamia and Egypt. Egypt was always considered to be the inventor of the beer. In the last century the scientists started to have more questions about the primacy. The studies of the beer evidences showed that the origin could be situated in Mesopotamia, especially Sumer. *'Most historical accounts of brewing cite ancient Babylon of some 8,000 years ago as the birthplace of beer.'* [13, p.76]

Probably, Mesopotamia, the area between two rivers called Euphrat and Tigris (today Iraq), was the first area where the beer and the bread production started. On the basis of the archeological discoveries and the findings from the Czech expert on Orient Bedrich Hrozný one can realized that the Sumerian were the first who produced beer. The production was dated between 4,000 and 3,000 BC. [6, p. 12, 18]

The first mention of the process of brewing is described in the *'Hymnus Goddess Ninkasi'* who became the Sumerian symbol for the beer. The production method is based

on the usage of bread and water. The special bread which containing the malt was baked and put into the water. The process of fermentation could start suddenly and after some time the beer was ready to use. One can ask how it is possible that this beverage was called beer without using any hops. The hops started to be used later and were not known at that time. The bitterness was given by some other ingredients, for example by the roasted malt in the ashes. [6, p.13]

Around 2,000 BC the Babylonians took over the Mesopotamia and continued with the beer production. Many types of beer were produced that time, for example the '*dense beer*', '*black beer*' and the '*red beer*'. Anyway, the density of the beer was closer to the bread than to the today's beer. [6, p.14, 15]

According to the historians there was the privilege of the brewing in the hands of the pharaohs. Later on the brewing was spread out between the aristocracy and priests. The beer was very important which is shown by the form of the salary. There were some professions which have received part of the salary in form of the beer. In addition, beer was used in some rituals, e.g. as the sacrificial gift, by the church service or by the funeral. Beer was also used as the part of some medicines. [6, p.19, 21]

Despite of the fact about the Sumerian primacy of the beer's origin, there exist more information and evidence of brewing from Egypt. Many archeological finds were dated into the Predynastic era (5,500 – 3,100 BC) and the written evidences of the beer importance comes from Early Dynastic (3,100 - 2,686 BC). [13, p.32]

Greek writers, for example Greek geographer and historian Strabo (64 BC – 23 AD) considered Egypt as the inventor of the beer. [49]. The Egyptians assigned the invention of the beer to their god of the underworld Osiris.[34] The beer that time was made from barley and was drunk daily as an alternative to water. It is important to mention that beer in the ancient Egypt did not contain so much alcohol and was recommended for immediate usage. There were many advantages for the Egyptian economy as well. The portion of the grain production used for brewing and baking strengthened the economy as well as the political society. The beer was much more used by poverty than by wealthy people who

used to drink wine. Some cultures, for example Greeks, thought that beer can cause many health problems to the human beings, such as the extreme urination or affects on the brain. On the other hand the Egyptian beer became more spread out in the following years. The beer was cheaper than the wine because of the amount of barley and the less problematical brewing technology. [13, p.33, 34]

3.1.2 The Origin in Other Olden Beer Areas

The Greeks were not a beer-drinking nation. They were not so much interested in the beer. But anyway they imported beer from Egypt as well as other nations like Spain and some other west-European countries. This drink spread out and became famous in many other countries. The beer drinking countries were for example: Hebrews, Philistines, Armenians or Syrians. On the other hand, the other nations such as Nubians or the Ethiopians, has their own style of brewing. They have used different methods and material to produce this beverage. [13, p. 117-119]

Around the year 3,100 BC there were an evidence of beer production in Israel. One can say that this country can belong to the inventors of beer but at that time Israel was under the Egyptian power. This fact didn't show us the importance of beer for the citizens of Israel. On the other hand, the beer was mentioned in the Bible as the 'intoxicating drink'. In some Hebrew scripts about faith one can find the mention of beer as a product brought from Egypt. The wine was probably the most used drink, but the beer was its substitute. [13, p. 117-119]

3.3 Microbreweries

The description of the special part of the beer industry – microbreweries – is very crucial and has to be mentioned. The USA is considered as the '*origin*' of the microbreweries. '*It was in the 1980s that microbreweries took off in the United States and it is now generally accepted that a microbrewery there produces fewer than 15,000 barrels of beer a year. These small microbreweries run by a few people. Adopt various marketing strategies that are different to large brewers.*' [17, p.152] This definition speaks about the microbreweries in the USA and it is obvious that there cannot be said one definition for the whole world, especially because there exist many factors influencing the situation such as the area.

Although the US origin *'the term microbrewery originally originated in the United Kingdom during the late 1970s. Though it was originally used to reflect on the size of the breweries, it gradually came to reflect a different attitude and approach to adaptability, flexibility, experimentation, and customer service.'* [35] The US breweries are termed as *'craft breweries'*. [36]

In the relationship to the Czech Republic, the microbrewery produces 500 – 3,000 hl of the beer with the maximal capacity of 10,000 hl. [31, p.331] This enterprise does not export, does not have its own distribution network, does not sell its products to other stores, it is not owned by any international company and its owners have emotional relationship to their microbrewery. [29, p.98]

The trend of establishing the microbreweries is increasing. The beer produced in the microbreweries provides its customers with very interesting taste. This beer is not filtered almost everywhere. The freshness of the beer is ensured but the durability is not so long like is by the filtered or pasteurized beers. *'The popularity behind these products was the fact that their trend was spread quickly, and hundreds of smaller breweries popped up, attached to a bar where the product could be enjoyed by all. As microbrews gained in popularity, some became more than just simple microbrews, as they catered to a broader range of beer.'* [35] The microbreweries are famous for the production of non-pasteurized and no filtered beer with higher content of vitamin B in the microbreweries. This is mostly the reason that consumers search for such an enterprise. The taste of the beer is different and interesting for the consumers. [6, p.150]

3.3.1 Microbreweries in the USA

The American history of the microbreweries is dated back to late 1970s. The needs of the consumptions were changing to the traditional style. *'These homebrewing roots gave birth to what we now call the 'Craft Brewing' industry.'* [36]

In 1965 the American with the German origin Fritz bought the brewery Anchor Brewing Company and started to brew very traditional beer which was different from the beer produced in the USA before. In 1976 small The New Albion Brewery in California

was established. The beer was as well the original and because of some advertisement the tradition of brewing at home started to be stronger. [6, p.148]

1980s were great years for the explosion of microbreweries in the USA. The locals were served by very traditional beer with different untypical flavor. These enterprises have to fight with not easy market conditions. *'The number of craft brewers has gone from 8 in 1980 to 537 in 1994 to over 1600 in 2010. Craft brewers operate in 344 congressional districts and the majority of Americans live within 10 miles of a brewery. Truly craft brewers and craft beer drinkers are participants in a revolution. There has never been a better time or place to drink beer than in the US right now.'* [36]

The microbreweries are described by their higher flexibility and adaptation to their customers. The beer flavor should be unique and the taste can be interesting and different for the customers. In the USA the name craft brewery is mostly use for the microbreweries. *'It was in the 1980s that microbreweries took off in the United States and it is now generally accepted that a microbrewery there produces fewer than 15,000 barrels of beer a year. These small microbreweries, run by a few people. Adopt various marketing strategies that are different to large brewers.'* [17, p.152]

Orakwue wrote that *'Microbrewers are small producers of beer that serve local and regional consumers. Brewpubs are extensions of microbreweries. Brewpubs brew their own beer and sell it in their own local pubs. Small local brewery is therefore not a new idea.'* [18, p.130] There is very important the idea of producing the beer on one place and selling it directly at the same place – pub. The beer does not have to be sell just in the pub but also to the third party: *'Microbreweries may sell directly to consumers, but they also may bottle their beer and may sell it through wholesalers and retailers.'* [30, p.81]

Orakwue also mentioned that the consumer behavior differs nowadays. He said that when customers taste the beer with the typical taste from microbreweries they *'do not want to go back to the bland canned beer brands flooded with chemicals and additives.'* [18, p.130]

At the beginning of 80s there were hundreds of microbreweries in the USA. This fact was spread out to the Europe, as well to the today's Czech Republic. [6, p.148]

3.3.2 Microbreweries in the Czech Republic

The beer production has a deep tradition in the area of today's Czech Republic. There were many influences from many other tribes such as Celts, Markomans or the Slavs. Till the end of the 9th century the beer was brewed at people's homes but after that the beer became more important and was a part of the trade. [6, p.31]

'The first record about beer brewing on the Czech territory is linked with the Břevnov Monastery and says that local Benedictines made beer and wine there in 993.' [33, p.11] In the 10th century the Benedictines produced wine and as well the beer. The beer production was unfortunately forbidden by the Czech bishop Vojtěch. This prohibition was under the death penalty and lasted till 13th century by the king Václav I. The concrete information about the beer production and recipes do not exist. Most likely the oldest mention about the hops production belongs till 11th century in the foundation document of Prince Břetislav I. The first documentation about the beer production is the foundation document for the Vyšehrad Chapter from the Czech King Vratislav II. from the 11th century. There is the mention about the hops tithe for beer production. From the 1130 there was the other document from Prince Soběslav I., which describes the tithe from the subjects who brew the beer at home. [3, p.15-16]

After the Velvet Revolution in 1989 there were many political changes influencing the beer industry. In this year there were 71 breweries. After January 1990 the difficult process of restitution started. Just few breweries were returned without any difficulties. For instance the brewery *'U Fleků'*, *'Vysoký Chlumec'* or *'Košumberk'*. After that the brewery in Český Krumlov and in Humpolec were sold for the higher price. The brewery in Český Krumlov changed the name into *'Eggenberg'* and Humpolec is from that time known as *'Bernard'*. Just *'Budějovický Budvar'* and some more breweries have Czech owners. The *'Budějovický Budvar'* is now the last brewery owned by the Czech state. But still there exists the discussion about the possible privatization and the transformation into joint-stock Company in government. [6, p.55-56]

The other breweries were privatized and had got the foreign owners. The new owner of the brewery '*Pilsner*', '*Velké Popovice*' and '*Nošovice*' is the group '*SAB, South African Breweries*'. Prague breweries owned the English group BASS PLC. But because they cooperated with huge loses they sold these breweries to the Belgian-South American group '*InBev*'. This group closed the brewery '*Branik*' in 2007. The Holland concern '*Heineken*' bought two breweries '*Starobrno*' and '*Znojmo*'. The brewery '*Krušovice*' is owned by the German brewery group *Dr.Oetker*. The positive influence of the foreign owners is their investing which helped to the great technical development of these breweries which is important for the quality and quantity of the Czech beer. [6, p.55-56]

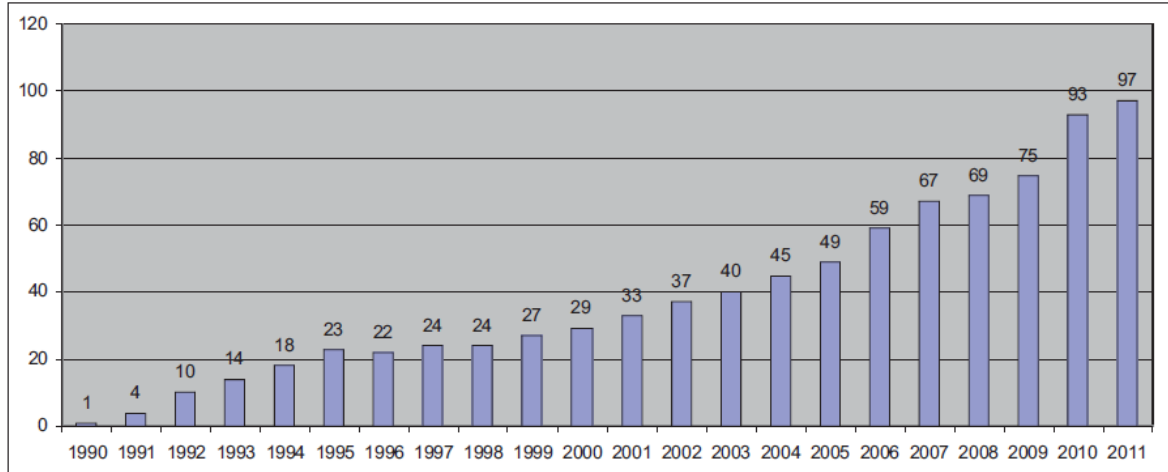
The competitor of Plzeň is České Budějovice in the Czech Republic. This city produces the beer called '*Budweiser*'. The very famous case from the brewery field is about the name Budweiser. The beer from České Budějovice was exported as Budweiser Budvar in the end of 19th century. The original '*Budvar*' is made from malt and Žatec hops. [13, p.627]

The oldest microbreweries were houses with the right of brewing. From 15th century there were established and abolished around 200 breweries. In the second half of the 19th century there existed 40 breweries in the Prague and after the World War II there left just 2 microbreweries – '*U Fleků*' and '*U Svatého Tomáše*'. From 1991 till 1999 there were established 31 microbreweries in the Czech Republic. [6, p.55-56]

The oldest microbrewery which is still in use is the Microbrewery '*U Fleků*' in Prague, which was established already in 1495. In 1991 there was established the microbrewery '*Meloun – hostinec a pivovar u Lípy*' in the region Hradec Králové. This microbrewery does not exist anymore. In 1992 there were set up the microbrewery '*Pegas*' in Brno and '*Pivovarský dvůr*' in Chýně. [6, p.150, 151]

The following graph (graph 1) describes the development of the volume of the microbreweries in the Czech Republic. In 1990 there was just one microbrewery and nowadays there exist around 97 microbreweries. [31, p.332]

Graph 1: Development of Microbrewery Numbers in the Czech Republic



Source: Kvasný průmysl, Ekonomické aspekty vzniku restauračního minipivovaru; Fabiánová and Maier

In 1993 the *'Novoměstský pivovar'* brewery was opened in Prague. This microbrewery is now the second largest in Prague, has 15 hl brew house and has interesting interior. The third largest microbrewery according to the brew houses' size is the *'Kláštevní pivovar Strahov'*. This brewery has 10 hl brew house and was opened in 1995. The other microbrewery *'Richter Pub'* and *'Pivovarský dům'* have the 5 hl brew house. [6, p.152, 153] The Appendix 1 shows the map with the occurrence of the microbreweries in the whole area of the Czech Republic.

3.4 The Ingredients and the Process of Beer Production

For the future cost analysis it is important to describe the ingredients and also the technological process at least from the broad point of view.

3.4.1 The Ingredients

There exist 4 most important ingredients needed for the beer production. It is water, barley, hop and yeast.

- *Water*

Water, one of the basic ingredients, is used for beer production and also for washing and cleaning of the operation in the brewery. The general assumption is that for 1 liter of

beer there is the water consumption from 7 – 12 liters depending on the size and technical condition of the brewery.[8, p.70,71]

The main criterion for choosing the water is its hardness. The unit of measurement is mmol/l. According to this measurement which expresses the oxide calcium in one liter of water = 0.0179mmol/l, the water is divided:

- *Soft* – till 1.4 mmol/l
- *Medium hard* – till 2.1 mmol/l
- *Hard* – till 5.3 mmol/l
- *Very hard* – over 5.3 mmol/l

This water has to have the quality of drinking water and the description come under the specific law. Also the water can be different for different beers. The suitable water for the light beers is the soft water with less amount of magnesium. For the dark beer harder water is also suitable. [6, p.74]

- *Barley*

Barley is the basic ingredient for the malt production in the Czech Republic from the Middle Ages. This cereal was grown in the large volume. The spring malting barley is the important ingredient for the malt production. The special barley used for the malt production has to have some optimal characteristics: dry basis till 88 %, starch till 11 %, the protein contain max 10 - 11 % in the dry basis etc. [6, p.78]

- *Malt*

The malt is made from the macerating of the barley germination, malting and drying. By the barley macerating there is a huge increase of water in all barley grains (10 % - 15 % to 40 % - 47 %). These conditions are great for the germination of grains and synthesis and other important processes using the enzymes starts. [3, p.8]

These processes are important for producing of the good quality beer. This phases takes from 5 till 7 days and then the drying under 80 – 85 °C can start. These phases lower the water in the grains to 3 - 5% (from 40 %). This malt is used for the light beers. On the other hand the malt used for dark beers differs in the last phases of germination where the

higher temperatures are used (100 °C) and the dark malt arises. The caramelized malt is made of roasting of the green malt under temperature of 120 °C – 180 °C. [6, p.9]

- *Hop*

This ingredient is very typical for the beer taste. This ingredient is in fact essentially dried heads of the female plant of the European hop (*Humulus lupulus* var. *europaeus*) from the cannabis family (*Cannabaceae*). The hop plants have normally 72 – 78 % of water. The hop has to be dried under max 50 temperature of °C and at the end it has to contain max 8 % of water. After that it has to be stored and at the end it has max 11 % of water. The hop is nowadays used in the different form of granules, so called pellets. The reason is that the hop could change its structure during the transportation or storing. [6, p.74-77]

The acids included in hops provide the beer with the bitterness, special aroma, are antibacterial and protective and makes the beer unique. The plant hop contains hops resin which contains the bitter substances; essential oils for ensuring the aroma; and the polyphenols for the typical beer taste.

There exist great conditions for the hops growing in the Czech Republic and the important producers are Žatec, Ústěck and Tršice in the Czech Republic. [6, p.77]

- *Yeast*

The importance of the yeast in the brewery industry was found out in the second half of the 19th century. Generally yeasts belong to the unicellular fungus. Today the special yeast for bottom fermentation which works under 15 – 23 °C and for top fermentation which needs just 6 – 14 °C is used. The first type is used for the beer types: ale, porter, stout. The second type is used for the pilsner type of beer. [6, p.80, 81]

3.4.2 The Production Technology

The beer production contains following phases: preparation of hopped wort, the main fermentation, secondary fermentation, maturing of the beer ripening and the final modification like pasteurization, stabilization and tapping off the beer to the bottles or kegs. [3, p.9]

1) Preparation of Hopped Wort

At the beginning the barley malt has to be grinded. The very important device is the brew house, where part (mostly 1/3) of the mixture of milled malt and water is boiled. This process is called mashing and means the transformation of starch and some other substances to the solution. [3, p.9] After this the process of filtration divides the fluid malt from the hard malt. [32, p.15]

2) Fermentation

After the above mentioned process it is very important to strain some rests of the malt which produces the unhopped wort and boil the unhopped wort. In this process very important substances which create the bitterness of the beer are made. Also during the boiling of hopped wort some important substances arise. The purpose of the main fermentation is to convert the extract to the alcohol and carbon dioxide. [3, p.9]

The boiled hopped wort has to be cooled down and then the brewer's yeast has to be added. After this the first phases of the fermentation can begin. There exist two kind of yeast. One for the bottom fermentation where yeasts go down after the process of fermentation and the other for the top fermentation where they stay always on the top of the product after the fermentation. This fermentation takes from 7 - 10 days. During the main fermentation there arise alcohol, carbon dioxide and some other 'products'. [3, p.9]

3) Secondary Fermentation and Maturing

The second fermentation works under lower temperature – 0°C. This period takes between 1 and 3 months but it is possible to decrease this time to one week. This decrease is used mostly by the modern companies. This process of secondary fermentation and maturing is to give more carbon dioxide to the beer. [3, p.9]

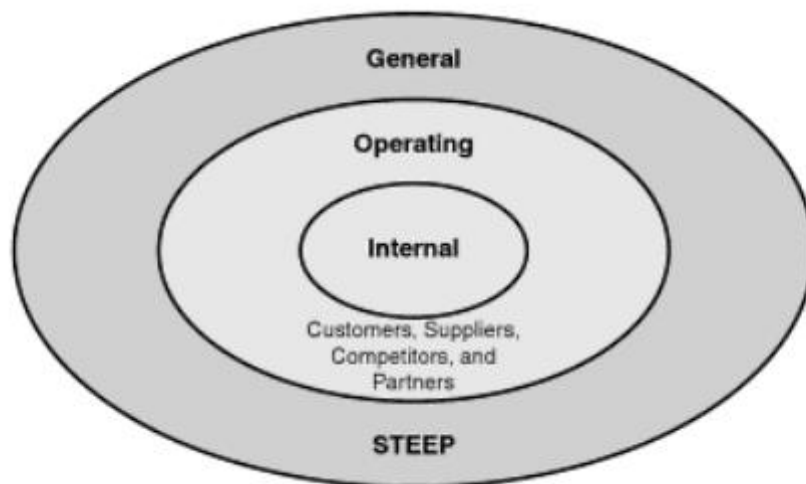
4) Final Processes

The matured beer is always better to filter and tap off to the kegs. The process of pasteurization can be also done. This is important for prolonging the durability of the beer. [3, p.10]

3.5 Business Environment

Everyone who would like to set up his/her business should be aware of levels of the environment. The picture 1 points out the general, operating and internal environment.

Picture 1: Three Levels of the Environment



Source: Analysis without paralysis; Bensoussan, Fleischer

'Managers must be aware of these environmental levels, know what factors they include, and try to understand how each factor and the relationships among the factors affect organizational performance.' [4, p.170]

3.5.1 General Environment

General Environment is actually the Macro-Environment and *'It is a major source of uncertainty'*. [28] This environment is actually where threats and opportunities occur. Threats answer the questions like what should be the person who set up the business aware of; and opportunities provide this person with the answer on the question what is the next big thing. [28]

'A useful tool when scanning the general environment is PEST analysis.' [10, p.51] This analysis means the description of the political, economic, social and technological factors. Pest Analysis is focused on the political, economic, social, technological factors which directly influence the company. This analysis is sometimes called STEEP but means exactly the same factors plus the environmental factor. [4, p.169] There exists also the

PESTLE analysis which is exactly the same like PEST but include also legal and environmental factors. But these factors could also be part of political and environmental factors. [10, p.51]

'PEST analysis is simply another tool to help the organization detect and monitor those weak signals in the hope of recognizing the discontinuities or fractures shaping the environment that will ultimately find their way into the competitive environment.' [10, p.51] From this definition it is obvious that there is the connection between the general and competitive environment.

- *Political Factors* means the influences by the government policy. The government policy is mostly more important for the multinational companies. The political stability is important for everyone who would like to make business in such country. Under the term of governmental policy it can be meant the deregulation or privatization. [10, p.52]
- *Economic Factors* include *'interest rates, disposable income, unemployment rates, retail price index (inflation), gross domestic product (GDP), and exchange rates.'* [10, p.54]
- *Social Factors* describe the society, its structure, demographical situation, social and cultural customs. [21, p.131]
- *Technological Factors* represent the technological capacity and the speed of technological changes in the given country. [21, p.131]

3.5.2 Operating environment

The operating environment examines the attractiveness with the help of the tool called Porter's Five Forces. *'Porter distinguishes five competitive forces: competition among established competitors, with new competitors, with substitutes, with suppliers, and with customers. These five forces determine how well a company fares, and particularly how profitable it can be.'* [20, p.195]

- *Threat of Entry*

'New entrants to an industry bring new capacity, the desire to gain market share, and often substantial resource.' [19, p.23] Also the probability of entry to the new industry is important. That is the reason that there exist some barriers to entry. The main barriers are: Economies of scale, Product differentiation (importance of the brand), Capital Requirements (the need to have enough resources), Cost disadvantages independent of size, Access to distribution channels, Government Policy. [19, p.24]

- *Bargaining Power of Suppliers = Powerful Suppliers*

Suppliers can increase the prices or decrease the quality of their goods or services. This is their main tool to *'squeeze profitability out of an industry unable to recover cost increases on its own prices.'* [19, p.28]

- *Bargaining Power of Buyers = Powerful Buyers*

Buyers can *'force down prices, demand higher quality or more service, and play competitors off against each other – all at the expense of industry profits.'* [19, p.28]

- *Threat of substitutes*

It is important to know what is the possible substitute of the product the company wants to sell. *'Unless it can upgrade the quality of the product or differentiate it somehow (as via marketing), the industry will suffer in earnings and possibly in growth.'* [19, p.32]

- *Rivalry among existing competitors = Jockeying for position.* [19, p.34]

Porter argued that the rivalry can be express as the price discount, the entry of new product, advertisings, and service development. If the rivalry increases the profitability decreases. [19, p.18]

Appendix 2 explains the Five Porter's Forces in the graphical way.

3.5.3 Internal Environment

The internal environment is characterized by strategic groups, competitors, segments, resources and capabilities.

Analysis of the Strategic Groups is useful mostly for the planning of new products and provides the first information about the differences between the competitors. [23, p.135] The Competitor Analysis is important to examine and get knowledge about the competitive environment. *'a competitor analysis is the first step the firm takes to be able to predict the extent and nature of its rivalry with each competitor.'* [12, p.133] Segmentation is the process where the customers are divided into the homogeneous groups with the same needs. The factors could be the life style, personality and many others. [9, p. 128,129] Resources and capabilities are important for the future strategy formulation. Resources and capabilities mean the source of profitability and determination of the performance. [9, p.132,133]

3.5.4 SWOT

The shortcut SWOT means strengths, weaknesses, opportunities and threats. As it was already said, opportunities and threats are important for the external environment. Strengths and weaknesses are on the other hand important for the internal environment. Strengths describe areas where the company is doing really well. Weaknesses provide the information about areas where the company is doing bad. *'SWOT analysis allows an organization to assess its current strategy in light of its changing environment (and its competitors), and to help turn potential threats into opportunities and weaknesses into strengths.'* [10, p.61] The internal part is actually based on the resources and capabilities of the company.

3.6 The Financial Principles Needed for the Calculation

It is very important to define the important economical, financial and accounting terms for the future analysis. *'Accounting is an important system that provides essential information about the financial activities of an entity to various individuals or groups for their use in making informed judgment and decisions.'* [15, p.3] Accounting includes many different and important terms. The following description and analysis is based on the main information needed for the calculation of cash flow, net present value, and payback of the investment.

The main purpose of the financial analysis is the recognition of the financial position of the given enterprise. The data are needed also for the financial decisions. On its basis the decisions about the volume of the production, the capital requirements or the price creation are made. The internal and external data are needed. As the internal data one can consider the financial statements, the annual reports, internal regulations etc. External data could be data from macro-economical analysis, from other auditors companies etc. [24, p.70,71]

3.6.1 Investment

According to Židková the investment from the micro-economical point of view is defined as the money expense where the revenues are expected in the long time. [25, p.14]

For the purpose of the following analysis it is important to identify the Long Term Assets. [16, p.8] *‘Long term assets are defined as follows: Acquisition cost exceeds CZK 40,000 (for intangible, acquisition cost exceed CZK 60,000). The usage period exceeds one year (this condition is not required for real estate).’* [5, p.282]

From the economical point of view this assets constantly brings its value to the production cycles. The revenues used for the acquiring of the long term tangible assets needed for investment is called capital revenue. The acquiring could be made by purchasing, own construction, leasing, as a present or inheritance. The amount of the money expenses depends on the acquiring firm. [25, p.14, 15]

3.6.2 Price of the Product

At the beginning it is important to mention the basic economical relationship between supply and demand. Ball and Seidman describe the supply as: *‘any product that a seller offers for sale’* [1, p.4] and demand as: *‘the buyer’s willingness to pay for a product. To make it simply, demand is desire plus money.’* [1, p.10] These information are the basis for the pricing. *‘Price is where demand meets supply.’* [1, p.10] Price is the product of the market where the supply and demand meet. If the price increases the quantity of the sold product decreases in case that other conditions are constant. [22, p.75]

3.6.3 Costs vs. Expenses

‘Total costs are comprised of fixed and variable expenses. Fixed costs do not vary with output. These costs include interest expenses, rent on leased plant and equipment,

depreciation charges associated with the passage of time, property taxes and salaries for employees not laid off during periods of reduced activity. Because all costs are variable in the long run, long run fixed costs always equal zero. In economical analysis, the short run is the operating period during which the availability of at least one input use. In the short run, operating decisions are typically constrained by prior capital expenditures. In the long run, no such restrictions exist.’ [11, p.30]

The difference between costs and expenses is sometimes not clear and sometimes it is really difficult to make the distinction. The term ‘costs’ is mostly used for acquiring the goods or services. The term ‘expenses’ is used to describe the usage or consumption of the goods or services. But on the other hand: *‘The costs of running the business during the accounting period may be termed as expenses.’* [2, p.4]

The manufacturing costs are all costs needed for producing the product which would be ready to sell. From the accounting point of view these costs are marked as inventory till they are sold. After selling those out they become costs of sales or costs of goods sold. These costs are divided as labor, material and overhead. [14, p.22]

From the accounting point of view the term expense is used for the Income Statement and the Profit and Loss Account. Banerjee mentioned that *‘the term expense is used because here the emphasis is on measurement of the income of the business for a given period of time by matching efforts (expenses) with accomplishment (revenues).’* [2, p.4] The term ‘cost’ is mostly used by the cost accounting.

3.6.4 Revenues and Profit

‘Revenues (the amount charged to customers for goods or services) increase the equity in the business enterprise.’ Revenues are actually the income from the business activities, for instance from the sale of goods and services.[15, p.5,9]

‘Total revenue is the function of output.’ [11, p.34] There exists the equation:

$$TR = P * Q \quad (1)$$

P ... price

Q ... quantity (unit sold). [11, p.34]

Total profit is simply the difference between total revenue and total costs. [11, p.34] The following formula expresses the relationship:

$$\pi = TR - TC \quad (2)$$

TR ... total revenues

TC ... total costs. [11, p.34]

3.6.5 Financial Statements

There exist three key financial statements. For the purpose of the description of the financial position of a unit in the given time the Balance Sheet is used. Income Statement describes the relationship between revenues and expenses and leads to show the performance of the enterprise (the profit and loss). The third is the Cash-Flow Statement which *'provides information about the cash inflows (receipts) and cash outflows (payments) over a period of time.'* [15, p.15]

- *Balance Sheet*

Balance Sheet is a financial statement which expresses the assets on the left side and liabilities and equity on the right side of the table. The sum of all the items included in assets has to be equal to the sum of liabilities and equity. [15, p.15] The construction of the Balance Sheet should be well arranged and should express clearly the structure of the assets, the capital structure, the financial situation, the indebtedness, the liquidity etc. The possible comparison of two balance sheets from two consecutive years could show the development of the financial situation of the enterprise. [22, p.59]

- *Income Statement*

The Income Statement shows the revenues and expenditures and expresses the calculation of profit. According to EU the 4th Directive there exist 4 possible ways of the form according to nature or function. [22, p.73]

- *Cash Flow*

'The statement of cash flows analyses changes in cash and cash equivalents during a period. Cash and cash equivalents comprise cash on hand and demand deposits, together

with short-term, highly liquid investments that are readily convertible to a known amount of cash, and that are subject to an insignificant risk of changes in value. [15, p.66] Cash flow is divided into three parts: from operating activities, from investing activities and from financing activities. For the following analysis it is very important to understand the term Cash Flow from Operating Activities. Which are: *'the main revenue-producing activities of the entity that are not investing or financing activities, so operating cash flows include cash received from customers and cash paid to suppliers and employees.'* [15, p.66] Investing activities describes the purchasing of long-term assets and other non-cash investment. The financial activities focus on the change in the capital of an enterprise or usage of the unit's structure. [15, p.66]

3.6.6 Loan vs. Leasing

- *Loan*

According to Žídková, the long term loans are given for more than 4 years by the bank or other financial institution and mean the agreement between debtor and creditor. The most important condition is the investment intention. This agreement has to include the information about the time to maturity, the way of paying back, interests and guarantee if some point of the agreement would not be fulfilled. There exist some ways of paying back the loan:

- Individual plan
- Equal repayments – the interest and the loan are paid back separately
- Annuity – which is set up for every time periods with the same repayment

$$A = \frac{(1+r)^n \cdot r}{(1+r)^n - 1} \cdot U \quad (3)$$

A ... annuity per year

U ... total amount of loan

r ... interest rate

n ... time to maturity (years). [24, p.62]

- *Leasing*

'Leasing is a process by which a firm can obtain the use of a certain fixed assets for which it must pay a series of contractual, periodic, tax deductible payments. The lessee is the receiver of the services or the assets under the lease contract and the lessor is the owner of the assets.' Actually the owner of the property is lessor and the lessee is accurate to use it. [15, p.144]

3.6.7 Depreciation

'Depreciation is defined in FRS 15 as the measure of the cost or revalues amount of the economic benefits of the tangible fixed asset that have been consumed during the period. The definition continues: 'Consumption includes the wearing out, using up or other reduction in the useful economic life of a tangible fixed asset whether arising from use, effluxion of time or obsolescence through either changes in technology or demand for the goods and services produced by the asset.' [7, p.151]

Acquisition costs and salvage value has to be known at the beginning of the calculation and this relationship could be represented by following formula:

$$\text{Costs to be allocated} = \text{acquisition costs} - \text{salvage value} \quad (4)$$

Salvage value or often called disposal value, scrap value or residual value is the value of the asset at the end of its useful life. [15, p.141] The following table (table 1) describes 6 depreciation groups, the time for the depreciation for each group and the examples of the property which belongs to the group.

Table 1: Depreciation Groups

<i>Group</i>	<i>Time (years)</i>	<i>Examples</i>
1	3	Equipment, tools for machinery
2	5	Cars, most of equipment for machinery
3	10	Vault, metal constructions
4	20	Houses from wood and plastic
5	30	Houses, motorways, roadways
6	50	Administration houses, museums

Source: Podnikatel.cz, Odpisy hmotného majetku v účetnictví a daňové evidence;
Own Translation

1. Accounting Purposes

The depreciation for the accounting purposes is mostly calculated according to the following formula and the depreciation reaches the same values for every year. [15, p.142]

$$Depreciation = \frac{\text{The Initial Price for the Asset (CZK)} - \text{Salvage Value (CZK)}}{\text{Useful Life (years)}} \quad (5)$$

2. Tax Purposes

For the tax purposes the entity has to choose between the accelerated and straight line depreciation. The straight line depreciation is calculated as:

$$Depreciation = \text{rate (\%)} * \text{value of the property. [54]} \quad (6)$$

The accelerated depreciation is calculated as:

$$Depreciation = \text{coefficient} * \text{value of the property [54]} \quad (7)$$

The following table (table 2) shows the coefficient for the accelerated depreciation and the percentage rate for the straight line depreciation according to the depreciation groups. The first part expresses the coefficients for the accelerated depreciation and the second shows the percentage rate for the straight line depreciation.

Table 2: Accelerated Depreciation vs. Straight Line Depreciation

Group	Accelerated Depreciation			Straight Line Depreciation (in %)		
	1. Year	Next Years	For Increased Price	1. Year	Next Years	For Increased Price
1	3	4	3	20	40	33.3
2	5	6	5	11	22.25	20
3	10	11	10	5.5	10.5	10
4	20	21	20	2.15	5.15	5
5	30	31	30	1.4	3.4	3.4
6	50	51	50	1.02	2.02	2

Source: Podnikatel.cz, Odpisy hmotného majetku v účetnictví a daňové evidence;
Own translation

3.6.8 Evaluation of the Investment

Profitability, risk and liquidity are the main criteria for deciding if the investment would be realized or not. For the determination of the economical efficiency it is important to set up the total investment expenses, the way of financing, the balance between expenses and revenues, the right method of the evaluation of the investment and to make the final decision. [24, p.85,86]

- Static Methods

The factor of time is not included by using the static methods of evaluating the investment. These methods are useful for evaluating short time investments, one-time investment, in case that inflation or interest rates are low. [24, p.95]

The Profitability of the Investment

The profitability is calculated as average cash flows divided by the investment. The average value is used in case that the cash flows are not the same in every years. The profitability should be higher than the interest rate of long term loans. [24, p.93]

Payback Period (alternatively Average Rate of Return)

The Payback Period is calculated as the investment divided by the average cash flow. If the loan is used for the financing, then also the loan would be used for the calculation as the investment value. The payback period should be compared to the useful life of the assets. If the payback period is lower the investment is more efficient. [24, p.97]

- *Dynamical Methods*

These methods include the factor of time in the calculation. It is very useful for long-term investment, progressive investment which means the contribution on the investment in time; the revenues would be getting progressively in the long time. It is obvious that the risk and time factors generally increase the expenses and devalue the revenues. [24, p.97]

For this type of evaluation it is abnormally important to set up the point in time to which all the efficiency ratios calculation and the interpretation would be done. This time is called the zero point.

The basic indicators are:

Net Present Value (NPV)

NPV describes the absolute value of the difference between the present value of revenues of the investment and present value of the expenses on the acquiring of the investment. The calculation depends on the way of spending of the investment expense and the point zero. [24, p.98]

The calculation is done according to:

$$NPV = PCVF - IN = \sum_{t=1}^n \frac{CF_t}{(1+k)^t} - IN \quad (8)$$

NPV... net present value

PCVF ... net present value of cash flow

IN ... cost of investment

k ... capital costs (discount rate)

t ... time (from 1 to n)

n ... useful life. [22, p.295]

Results from this calculation could be:

1. $NPV \geq 0$... investment is acceptable because the required yield is higher than the interest rate
2. $NPV < 0$... investment is not acceptable
3. $NPV = 0$... revenues are the same as expenses. [22, p.295]

Internal Rate of Return (IRR)

It is defined as an interest rate when the present value of the required revenues from the investment is equal to present value of the required expenses on the acquirement of the investment. This relationship is express by following formulas:

$$PVCF = IN \quad (9)$$

$$\sum_{t=1}^n \frac{CF_t}{(1+k)^t} = IN \quad (10)$$

CF ... cash flow

$PVCF$... net present value of cash flow

IN ... cost of investment

k ... capital costs (discount rate)

t ... time (from 1 to n)

n ... useful life. [22, p.295]

3.6.9 The Financial Ratios

The financial ratios could be the basic for the evaluation of the enterprise and every financial analysis. There exist 5 main areas:

- 1) Liquidity Ratios measure the ability to pay out all the obligations. These ratios deal with the questions like if the company would be able to pay all the obligations to the maturity. [22, p.342]
- 2) Asset Management Ratios (activity ratios) express the efficiency in using the assets. If the entity has more assets than it is needful, than has higher costs and lower profit. If the company has fewer assets then the profit is lower than it could be. [22, p.344]

The Total Assets Turnover (TAT) is the example of activities ratios and measures *,a firm's efficiency at using its assets in generating sales or revenue.'* [47] If the ratio is higher the firm is more effective. [47]

$$TAT = \frac{Sales}{Total Asset} \quad (11)$$

- 3) Debt Management Ratios measure the usage of the debt to finance the business.

The debt ratio shows the leverage of the company. If the ratio is higher than 1 it means that debt is higher than the assets. This ratio differs in every industry.

$$Debt Ratio = \frac{Total Debt}{Total Assets} \quad (12)$$

- 4) Profitability Ratios show the influence of liquidity, indebtedness, activity on the profit after tax. [22, p. 345, 347]

Net Profit Margin is the profitability ratio and measures the portion of net profit for 1 CZK of the income. The higher the number is the better the company is in transferring sales into net profit. [57]

$$Profit Margin on Sales = \frac{Net Profit}{Sales} \quad (13)$$

- 5) Market Value Ratios express how the market evaluates the past activity of the enterprise and its future possible position. [22, p.350]

3.7 Taxation

One of the often discussed topics is the taxation. There exist many types of taxes but this part is focused on the description of the consumer tax, income tax and value added tax.

Consumption Tax

According to the law no. 353/2003 Coll. about the consumption taxes (§ 80, § 91) the subject of taxes on the beer is: a) the product mentioned in the nomenclature 2203 containing more than 0.5 % of alcohol, or b) the mixture of the product mention in a) with the non-alcoholic beverages mentioned under the code of nomenclature 2206 containing more than 0.5 % alcohol. [55]

The given legislation determines the big Balling's formula to the counting the extract of the hopped worth. This is important to calculate the unit of measurement – the degree of the beer to express the beer concentration. SAGIT said that the small not dependent brewery is the brewery with the yearly beer production not higher than 200,000 hl and is not economically dependent on other brewery and its storages are not technologically or differently connected to other brewery. [55] The basis for the consumption tax calculation is the amount of beer in hectoliters.

$$\textit{The amount of beer in hl} * \textit{°P (degree Plato)} * \textit{reduced rate} \text{ [55]} \quad (14)$$

The next table (table 3) expresses the tax rate and the basis for the calculation of the taxes from the beer:

Table 3: Consumption Tax - Rates

Code of Nomenclature	<i>The tax rate for every percentage of the extract of the hopped wort in CZK/hl</i>					
	Basic rate	Reduced rates for small independent breweries				
		The group according to the volume of the production, in hl/year				
		Till 10,000 (incl.)	Over 10,000 till 50,000 (incl)	Over 100,000 till 150,000 (incl.)	nad 100 000	Over 150,000 till 200,000 (incl.)
2203; 2206	32.00	16.00	19.20	22.40	25.60	28.80

Source: Sagit, Daň z piva, Own Translation

Income Tax

Income tax is the direct tax which lowers the profit. This tax is described in the law No. no.586/1992 Coll., about the income taxes. The income tax for the legal entities is 19% and is calculated from the tax base. [38]

VAT (Value Added Tax)

The value added tax (VAT) is *'generally due on a supply of goods or services with the place of supply in the Czech Republic carried on by a taxable person in the course of economic activities. The taxable supply usually means goods or services provided for a consideration. However, certain transactions carried out for no consideration represent also a taxable supply, e.g. private use of business assets and provision of gifts.'* [41] This tax is legalized in the law no. 235/2004 Coll., about the value added tax. The normal VAT is 20 % and the reduced VAT is 10 %. [39]

4. BUSINESS PLAN OF THE MICROBREWERY FOUNDATION IN THE CZECH REPUBLIC

4.1 The Introduction and Project Assumptions

For the model of the investment intention it is important to set up the principle assumptions. The following part guides the reader through the basic points of the industry environment analysis where the key issues are pointed; further the main financial issues are examined and the economical issues from enterprises' point of view are reported.

As was already mentioned in the theoretical part, the amount of microbreweries increased incredibly during the last years. Because of this fact it is expected that running a business such a microbrewery could be interesting and profitable. [29, p.98]

The intention of the following plan is to set up the microbrewery in the middle size industrial Czech city called Kladno. To be concrete, according to the Czech Statistical Office, Kladno was marked as the third largest region with the highest density of population in the Středočeský region in 2008. Kladno is the biggest city in the region. [45] This fact can ensure us about the potential market and about the presence of the potential customers. Appendix 3 shows the map where Kladno is situated. The Kladno city tries to make and develop suitable conditions for the business development in the given area, for example by improving the local legislation, maintenance of the infrastructure or establishment of the info center for the tourism. [48]

Project Assumptions:

The subsequent analysis is based on the following assumptions:

- This microbrewery
 - Does not export the beer
 - Does not have its own distribution network
 - The production is sold directly in the brew pub
 - Is owned by one Czech owner – who is the legal entity and tax payer
- The microbrewery will be established in the already existed house which is owned by the investor
- Microbrewery's production will be 700 hl per year

- The increase in the production is possible but it is not included in the calculation
- It is expected to produce 12° and 10° beer, and the price calculation would result in the average price for both types of beer together
- The owner is the tax payer
- All production is expected to be sold
- The investor means the same as owner in this study

4.2 Environmental Overview - The Situation in the Czech Republic

It is obvious that there exist many important factors influencing businesses in the beer industry. For the purpose of this thesis just some of them were chosen to be characterized and describe the environment.

Political and Legal Environment

The political and legal situation could be characterized by taxation. The general assumption is that if the taxes are higher the consumption is lower and the number of employees in the given industry decreases.

The tax system is continuously changing in every country as well as in the Czech Republic. The higher taxes in the Czech Republic were expected to bring 1,3 mld CZK to the Czech state budget but brought just 345 million CZK. In 2010 there was the decrease of the beer production about 7.9 % in comparison to 2009. Also the decrease of demand on the tap beer was 12.8 % from 2009 to 2010. [42] The impact on the breweries and malt houses was high. [50]

Economical Point of View

Very important indicator from the economical point of view is the disposable income. The price of every product as well as the beer is always more important for people with lower income. But the higher the price is the customer will search for cheaper product. With the higher disposable income there is the increase in the taste preferences. [43] This fact could positively influence the beer production in the microbreweries because these enterprises produce new types of beer and the demand for these products increases.

The other economical factor '*Employment*' shows how huge the beer industry is. There are 7,400 employees in the direct beer production in breweries, 12,300 employees in the logistic, 32,000 employees in the restaurants and other gastronomical companies, 2,800 employees in the shops. [44] These numbers indicate the importance of the beer industry in the Czech Republic.

Social Factors

It is also very important to point out the social view and the customer behavior. The last years' trend showed changes in demand. The increase of demand on the special beers was about 40 % from 2009 to 2010. The increase is also visible by selling out the beer in PET bottles. The factor which influences this situation is that the PET bottles have better quality and there is no huge impact on the beer quality. In the season this type of packaging is quite famous mostly because of the barbecue and other activities typical for summer. [42]

To conclude the situation on the market the demand on the special type of beers is increasing although the common customers prefer the beer from the bigger companies. On the other hand the legal framework is not advantageous to the small beer producers and charges them with higher taxes.

Strategic Map

There is the strategic map describing the relationship between the beer mark and the market. For this analysis it is important to look at the group of microbreweries (the group number 5). The price and the quality of the product are higher and comparable to price of the beer produced by many global breweries and some regional breweries. But the microbreweries run their business in the local field. It is also visible that the main competitors would be the regional breweries.

Competition

In the city of Kladno there already exists the microbrewery called '*U Kozlíků*'. This brewery is built in the already existed restaurant. [65] It is very important to point out that the main competitors for every microbrewery are also the restaurants.

SWOT

The SWOT analysis is very useful tool to identify the opportunities and threats, and strengths and weaknesses from internal and external point of view.

- *Strengths*

The main strengths would be the good quality of the services. These small enterprises focus more on the customer needs and are able to satisfy it. Also they are very flexible and are not afraid of many innovations. The beer product is the special and unique beer.

- *Weaknesses*

Between the weaknesses could be included the running business in the local area. These businesses do not contribute hugely on the market share. Also the profitability is not guaranteed.

- *Threat*

The main threat is the price of the possible competitors – bigger breweries. Also there exist lower prices by the important beer. This fact can cause that the consumer in the Czech Republic could start to buy foreign beer. [50]

- *Opportunities*

The good name of the Czech beer could lead to the increase of the beer tourism in the Czech Republic and could increase the number of customers. [44] As the opportunity also the prediction of the increasing demand on the special beer could be taken.

Conclusion

To conclude the situation in the market one can say that there are many threats and opportunities. The microbrewery has the advantage in brewing very differentiated and unique product which can help to focus more on the customers. The demand on these special beers increased in the last time so the higher increase can be expected. People with higher disposable income would prefer better quality and unique taste of beer and could be important customers. On the other hand the price of the beer in the microbrewery is higher

than from the big breweries. The big brewery could set up lower prices and still could be profitable. This is mostly because of the economy of scale which is not possible by the microbreweries.

4.3 Financial Analysis

The main purpose of the following analysis is to examine and point out the principal issues which have to be taken in the consideration by the establishing of an enterprise. The analysis is divided into four main parts: Initial Investment, Costs/Expenses and Revenues, Evaluation and Final Discussion.

4.3.1 The Initial Investment

The investment is the asset which is not used for the immediate consumption but which is determined for the production of other products. [22, p.272] For every investment it is essential to analyze all the needs which the property has to fulfill. In the case of the microbrewery foundation there are many technical requirements considered as necessary. When the right and suitable property is chosen the suitable way of acquiring has to be examined. [24, p.87]

Hence, this chapter is concentrated on the technical evaluation, the suitable property choice and the possibilities of financing this acquisition.

The Technical Description of the Microbrewery

Prior to the property acquiring all necessary questions about its technical conditions and production capacity has to be answered. The subsequent plan focuses on the purchase of the microbrewery with the total production of 700 hl per year. It is possible that the production would rather increase in the close future but this choice is not considered by the following calculations but it is just included in the estimation of technical aspects.

According to the Brewia Technologies (table 4) it is optimal to define the area about 90 m² for the microbrewery with the capacity of 1,000 hl. For the microbrewery with the production of 500 hl per year, the required area should be 60 m². Because it is expected that the microbrewery will be profitable, and maybe the production will be enlarged in the future, the needed area would be considered as 90 m². The brew house itself requires 20 – 30 m² of this area. The height of tanks is expected to reach 3 m and this is also the minimal height of ceilings. [31, p.331]

Table 4: Technical Requirements for the Brew House

Capacity (hl/year)	500	1,000	3,000	5,000	10,000	15,000
Required Area (m ²)	60	90	130	170	210	220
Height of Ceiling (m)	3	3	3.8	3.8	3.8	3.8
Height of Tanks (m)	3.0	3.0	3.2	3.2	4.0	4.5

Source: Brewia Technologies, Prostorová náročnost , Own Translation

4.3.1.1 The Brew House

The price of the brew house is estimated according to the current offers from three chosen companies producing brew houses. For example the company Mini Brewery System offers the brew house with basic components for 4,387,536.00 CZK without VAT, Pacovské strojírny for 4,788,240.00 CZK without VAT and Pivo Praha for 4,965,900.00 CZK without VAT. For the purposes of the following calculation it is assumed that the price for the brew house is 5,000,000.00 CZK without VAT. This assumption is made from the average price of these three companies which is equal to 4,713,892.00 CZK without VAT + possible non standard equipment in amount of almost 300,000.00 CZK without VAT. The VAT (value added tax) is 20 %. [26][27][53]

The detailed costs are stated in the following table (table 5):

Table 5: Initial Costs for the Investment, in CZK

	Price w/o VAT	Price with VAT (20%)
Total Costs of Microbrewery Equipment	5,270,000.00	6,324,000.00
... Price of the Brew House	5,000,000.00	6,000,000.00
... Installation	250,000.00	300,000.00
... Construction Works	8,000.00	9,600.00
... Transport	12,000.00	14,400.00

Source: Own Elaboration Based on the Given Offers

The left column points out the particular necessary costs. The column in the middle shows the price of this investment without VAT and the right column expresses the price with VAT 20 %. The price of the brew house is estimated as 5,000,000.00 CZK and the costs for the installation, construction works and transportation has to be added.

The most expensive item from the brew house is the boiling system which costs around 2,000,000.00 CZK without VAT. The price depends mostly on the producer and material. The other components are additional, for example fermentation room, filters or automatic devices. The transportation costs depend on the distance between the producer and the place of the installation (in our case it is Kladno). The price is expected to be 12,000.00 CZK. In this amount the hourly salary for the driver and the salary for the co-worker would be in total amount of 1,000 CZK. The price for one kilometer is very changeable. In this case it is calculated with 20 CZK per kilometer. The one way travel takes 3 hours, unloading 2 hour and the travel back in amount of 2 hours (because the vehicle would be without any freight). The expected time would be 7 hours. The total price for this service would be 7,000.00 CZK. The additional 5,000.00 CZK would be the price for 250 kilometers. The construction work would be 8,000.00 CZK in case that one worker would be employed for 4 days – 32 hours and he would be paid 250.00 CZK for an hour. The installation with the expectation of 4 workers for 3 weeks is estimated to be 200,000.00 CZK + transportation, accommodation and food (50,000.00 CZK).

4.3.1.2 The Way of Financing

It is important to find out the way of financing the brew house. Following text describes two possibilities of the financing: borrow & buy and leasing. To choose the right option the following steps has to be done:

- 1) Payment schedule for the loan
- 2) Depreciation plan
- 3) Current costs for the acquiring of the asset via loan
- 4) Current costs for the acquiring of the asset via leasing
- 5) Comparison and the final choice

- 1) Payment schedule for the loan

The required amount for the investment is 5,270,000.00 CZK. The loan is expected to be taken for 15 years with the interest rate of 8 %. It has to be taken into the consideration that each loan is different by every bank. All the necessary information about the loan could be calculated differently for each project. It is also important to mention that the business loans are mostly not possible to get for the total amount, but for fewer amounts. In

the following analysis it is assumed that the loan would be received for 100 % of the required price.

Discounted interest rate in this case is 0.116829545 and the yearly annuity payment is 615,691.70 CZK. Table 6 contains the information about the annuity repayment, interest, and amortization, initial and final situation. This type of document is called payment schedule.

Table 6: Payment Schedule, in CZK

<i>Year</i>	<i>Initial Situation</i>	<i>Annuity Payment</i>	<i>Interest</i>	<i>Amortization</i>	<i>Final Situation</i>
1.	5,270,000.00	615,691.70	421,600.00	194,091.70	5,075,908.30
2.	5,075,908.30	615,691.70	406,072.66	209,619.04	4,866,289.26
3.	4,866,289.26	615,691.70	389,303.14	226,388.56	4,639,900.70
4.	4,639,900.70	615,691.70	371,192.06	244,499.65	4,395,401.05
5.	4,395,401.05	615,691.70	351,632.08	264,059.62	4,131,341.44
6.	4,131,341.44	615,691.70	330,507.31	285,184.39	3,846,157.05
7.	3,846,157.05	615,691.70	307,692.56	307,999.14	3,538,157.91
8.	3,538,157.91	615,691.70	283,052.63	332,639.07	3,205,518.84
9.	3,205,518.84	615,691.70	256,441.51	359,250.19	2,846,268.65
10.	2,846,268.65	615,691.70	227,701.49	387,990.21	2,458,278.44
11.	2,458,278.44	615,691.70	196,662.28	419,029.43	2,039,249.01
12.	2,039,249.01	615,691.70	163,139.92	452,551.78	1,586,697.23
13.	1,586,697.23	615,691.70	126,935.78	488,755.92	1,097,941.31
14.	1,097,941.31	615,691.70	87,835.30	527,856.40	570,084.91
15.	570,084.91	615,691.70	45,606.79	570,084.91	0.00

Source: Own Elaboration

From the above mentioned calculation it is obvious that the interest decreases when the initial amount decreases. Interest is always subtracted from the annuity payment to get the amortization. The table 6 also shows the situation regarding the final amount which means how much has to be paid to the end of the each year.

2) Depreciation Plan

Because the property would be in the investor's ownership, the depreciation plan has to be set up. The straight line method is the most frequently used especially for the

accounting and financial purposes, this method would be used also in the following calculation. [15, p.142]

It is expected that the property would be kept after the end of its useful life. That indicates that the salvage value is 0. The useful life for this equipment is estimated to 20 years and the depreciation expense would be equal to 5,270,000.00 CZK/20 which is 263,500.00 CZK.

3) Current costs for the acquiring of the asset via loan

Firstly, the tax savings and the depreciation tax savings has to be calculated. The depreciation tax savings are calculated as $19\% \times \text{depreciation expense of the given year}$. This 19 % means the income tax. [40] Tax savings are calculated analogous: $19\% \times \text{annuity payment}$. Net expenditures are expressed as the sum of these three amounts. Very important is the calculation of the present value. The amount of the investment would be transferred into the current period and then the comparison would be possible. The interest rate has to be discounted and is equal to 6.48 %.

The total PV for all years is 4,798,649.97 CZK. The interest tax savings and depreciation tax savings are calculated as the taxes or depreciation multiplied by 19 % tax. Table 7 reports the calculation of present value.

Table 7: Loan – Present Value Calculation, in CZK

<i>Year</i>	<i>Annuity Payment</i>	<i>Interest Tax Savings</i>	<i>Depreciation Tax Savings</i>	<i>Net expenditures</i>	<i>Present Value</i>
1.	615,691.70	-80,104.00	-50,065.00	485,522.70	455,975.49
2.	615,691.70	-77,153.81	-50,065.00	488,472.90	430,828.46
3.	615,691.70	-73,967.60	-50,065.00	491,659.11	407,248.94
4.	615,691.70	-70,526.49	-50,065.00	495,100.21	385,142.05
5.	615,691.70	-66,810.10	-50,065.00	498,816.61	364,418.73
6.	615,691.70	-62,796.39	-50,065.00	502,830.31	344,995.31
7.	615,691.70	-58,461.59	-50,065.00	507,165.11	326,793.25
8.	615,691.70	-53,780.00	-50,065.00	511,846.70	309,738.77
9.	615,691.70	-48,723.89	-50,065.00	516,902.82	293,762.61
10.	615,691.70	-43,263.28	-50,065.00	522,363.42	278,799.72
11.	615,691.70	-37,365.83	-50,065.00	528,260.87	264,789.02
12.	615,691.70	-30,996.58	-50,065.00	534,630.12	251,673.16
13.	615,691.70	-24,117.80	-50,065.00	541,508.90	239,398.29
14.	615,691.70	-16,688.71	-50,065.00	548,937.99	227,913.84
15.	615,691.70	-8,665.29	-50,065.00	556,961.41	217,172.32
Sum of all Present Values					4,798,649.97

Source: Own Elaboration

4) Current costs on the acquiring via leasing

Parallel, the present values for leasing has to be calculated. The following table (table 8) shows the way of calculation. Savings from repayments are calculated as 19 % * repayment. In case that the advantage payment is 450,000.00 CZK and the annual repayments reach 500,000.00 CZK than the total present value is 4,177,478.39 CZK.

Table 8: Leasing – Present Value Calculation, in CZK

<i>Year</i>	<i>Repayment</i>	<i>Savings</i>	<i>Net Expenditures</i>	<i>Present Value</i>
0.	450,000.00	-85,500.00	364,500.00	364,500.00
1.	500,000.00	-95,000.00	405,000.00	380,353.12
2.	500,000.00	-95,000.00	405,000.00	357,206.16
3.	500,000.00	-95,000.00	405,000.00	335,467.84
4.	500,000.00	-95,000.00	405,000.00	315,052.44
5.	500,000.00	-95,000.00	405,000.00	295,879.46
6.	500,000.00	-95,000.00	405,000.00	277,873.27
7.	500,000.00	-95,000.00	405,000.00	260,962.87
8.	500,000.00	-95,000.00	405,000.00	245,081.59
9.	500,000.00	-95,000.00	405,000.00	230,166.78
10.	500,000.00	-95,000.00	405,000.00	216,159.64
11.	500,000.00	-95,000.00	405,000.00	203,004.92
12.	500,000.00	-95,000.00	405,000.00	190,650.75
13.	500,000.00	-95,000.00	405,000.00	179,048.41
14.	500,000.00	-95,000.00	405,000.00	168,152.15
15.	500,000.00	-95,000.00	405,000.00	157,919.00
Sum of all Present Values				4,177,478.39

Source: Own Elaboration

5) Comparison

To compare these two possibilities it is suitable to make the difference between the present values of both options. Present value of the loan is equal to 4,798,649.97 CZK and present value of the leasing is 4,177,478.39 CZK. The value of leasing is lower in this case and shows the advantage for leasing in the amount of 621,171.58 CZK.

From this given comparison it is obvious that the leasing is more suitable for this investment. The result always depends on the agreement conditions of leasing and loan. Also the leasing is calculated with the entry advance payment which could be possibly the barrier for the small investor who does not have this initial amount of money.

The leasing companies always present the leasing via leasing coefficient which is calculated as total expenditures on leasing divided by the price of the microbrewery. In this case it means 7,950,000.00 CZK/5,270,000.00 CZK which is exactly 1.51. This number

shows that the lessee would pay 1.51 times more for the microbrewery than if he/she would purchase it directly.

Conclusion

It is very important to take into the consideration the ownership. With the usage of loan the owner is the one who takes the loan. On the other hand in case of leasing the owner is the lesser. At the end of this analysis it is important to mention that the leasing expenditures are not visible in the assets part of the balance sheet. There could be pointed just the owned property. Also the leasing is not stated in the balance sheet and this information could have the impact for example on the calculation of indebtedness of the entity and show the distorted results.

For this particular case the loan would be chosen. This choice was made based on the need of property ownership. But last years the leasing is used more and more frequently.

4.3.3 Cost Analysis

At the beginning of the cost analysis it is important to know the difference between costs and expenditures. This difference is described in the theoretical part of this thesis. For the purposes of the next calculation the expression costs and expenditures have the same meaning. It is mostly because this analysis is more general and does not include all term like receivables, obligations etc.

The following text describes the relevant costs needed for the future analysis and evaluation. These costs include material and energy, labor, depreciation and financial costs. [22, p.79]

4.3.3.1 Material and Energy Costs

The ingredients which are needed for the production and the whole production process are described in the theoretical part. It is obvious that the beer as well as the amount of the ingredients differs according to each recipe. The following analysis counts with the general information and values.

According to Chládek it is needed 17 – 20 kg of malt, 1.4 kg hops pellets, 0.5 – 1 liter of yeasts for producing 100 liters of 12° beer. [6, p.207] The Brewia Technologies

presents the total producing costs for 1 hl of beer as 600 CZK. [37] The following breakdown describes this situation more detailed.

- *Malt*

For the production of 1 hl of beer it is needed approximately 20 kg of malt. The whole year production is 700 hl. For this amount it is 1,400 kg of malt needed. The web shop www.vasepivo.cz presents the price of 17 CZK/1 kg for the light barley malt pilsner type. The total price for one year production has to be 23,800.00 CZK. This price could be different for 10° and 12° beer. But because of the fact that the microbrewery focuses on the beer quality there would not be any difference between the volume needed on the 10° and 12° beer.

- *Hops*

For producing 1 hl of beer it is suitable to use 1.4 kg of the hops pellets. The total amount would be 98 kg of pellets for the whole year production. The price is approximately 129.00 CZK for 0.5 kg of pellets. From these data it is obvious that the total price for the whole production is about 25,284.00 CZK.

- *Yeast*

The required amount of yeast is 1 l for 1 hl of beer. From this fact it is evident that there is the need of 700 l of yeast for year. The package which contains 11.5 g of yeast is needed for 20 – 30 l of beer.. The price is 44.00 CZK without VAT and 48.00 CZK with VAT. [46] If there is 25 l of beer produced from one package the total year costs are 134,400.00 CZK.

- *Water*

It is needed 5 hl of water for 1 hl of beer plus 4 hl of sewage. [53] The price of water in Kladno is 77.10 CZK for 0.1 m³. [63] For 700 hl of beer it is needed 700 hl*9 hl = 6,300 hl of water. 6,300hl is equal to 630 m³. 630 m³ * 77.10 CZK = 48,573.00 CZK per year. In the table 9 the amount 694 CZK is mentioned. This is the amount for 1,000 hl of beer.

- *Energy*

According to MBS the energy costs are estimated to be 1,190.00 CZK. The total amount would reach 83,300.00 CZK for the year.

4.3.3.2 Consumer Taxes

A little bit more complicated is this situation regarding consumer taxes. This tax increased in 2010. In the chapter Taxation the detailed calculation of the taxes is mentioned. The result is that the tax for 1 liter of 12° beer is 1.92 CZK by the production of 700 hl per year. The appropriate amount has to be counted according to this formula:

For the production of 700 hl of 10° beer: $700 \text{ hl} * 10^\circ * 16 \text{ CZK} = 112,000.00 \text{ CZK}$. For the case of 700 hl 12° beer it is $= 700 \text{ hl} * 12^\circ * 16 \text{ CZK} = 134,400.00 \text{ CZK}$. This calculation showed that it depends on the given portfolio of the beer produced.

The following table (table 9) shows the changes of the consumption taxes according to the concrete portfolio.

Table 9: Consumption Tax

	<i>Portfolio</i>	<i>Amount of hl Produced Yearly</i>	<i>Price of Tax for Year (in CZK)</i>	<i>Tax Per One Liter (in CZK)</i>
1.	10° beer	420	67,200.00	1.60
	12° beer	280	53,760.00	1.92
	TOTAL (for 1l)	700	120,960.00	1.73
2.	10° beer	350	56,000.00	1.60
	12° beer	350	67,200.00	1.92
	TOTAL (for 1l)	700	123,200.00	1.76
3.	10° beer	280	44,800.00	1.60
	12° beer	420	80,640.00	1.92
	TOTAL (for 1l)	700	125,440.00	1.79

Source: Own Elaboration based on SAGIT, Daň z piva

Table 9 shows the relationships between the price and the degree of the beer. If there are more liters of beer with higher grade produced, the total sum of taxes would be higher as well. The third portfolio shows the highest price for taxes. There was used 280 hl of 10° beer and 420 hl of 12° beer. In this case the total sum of taxes would be 125,440.00 CZK per year and the average price for one liter of beer is 1.79 CZK.

The consumption tax is the responsibility of each tax payer. It is important to set up the portfolio of the beer products (10°, 12°). This portfolio and every its change has to be announced to the responsible tax office to the date given by the law.

4.3.3.3 Labor costs - Salary - Brewer

The salary of the brewer is estimated to be 30,000.00 CZK per month. The yearly super gross salary paid by the owner is equal to 482,400.00 CZK. This salary includes the social and health insurance and is paid by the company for the year.

Table 10: Salary – Brewer, in CZK

	<i>Monthly</i>	<i>Yearly</i>
Brutto Salary	30,000.00	360,000.00
Social Insurance - 25%	7,500.00	9,000.00
Health Insurance - 9%	2,700.00	32,400.00
Gross Gross Salary - 34%	40,200.00	482,400.00

Source: Own Elaboration

The super gross salary is higher about 34 % than the gross salary. This 34 % is compounded from 9 % needed for the health insurance and 25 % for the social insurance. [64] It is important to realize that there is always possible to get some tax relief.

CONCLUSION

The below mentioned table (table 11) shows all costs needed for the production of 1 liter of beer. It is also visible that 54.06 % of all costs for 12° beer take the salary of the brewer. There exists the division on the fix and variable costs. In this case it is optimal to mention that the brewer’s salary could be included in the fixed costs till the production of 1,000 hl. Above this border he/she would not be able to produce the beer without any help. So, the percentage of the salary portion could be lower with the production of 1,000 l.

Table 11: Cost Analysis for the Beer Production, in CZK

	12° Beer		10° beer	
	With VAT	Without VAT	With VAT	Without VAT
Malt	23,800.00	21,420.00	23,800.00	21,420.00
Hops	25,284.00	22,755.60	25,284.00	22,755.60
Yeast	134,400.00	120,960.00	134,400.00	120,960.00
Water	48,580.00	43,722.00	48,580.00	43,722.00
Wage - Brewmaster	482,400.00	482,400.00	482,400.00	482,400.00
Consumption Tax	134,400.00	134,400.00	112,000.00	112,000.00
Energy	83,300.00	66,640.00	83,300.00	66,640.00
TOTAL	932,164.00	892,297.60	909,764.00	869,897.60
TOTAL/1 liter	13.32	12.75	13.00	12.43

Source: Own Elaboration

Table 11 shows the calculation for 700 hl of 10° beer or 700 hl of 12° beer. The total material and energy costs are 275,497.60 CZK for the 700 hl of 12° beer which is 30.87 % from the whole production costs. The movable item from all the above mentioned costs is the tax. The consumer tax is about 22,400.00 CZK higher for 12° beer for the same volume of production. This fact increases the production price for beers with higher degree.

The total costs for producing one liter of 12° beer reached 12.75 CZK and for 10° beer it is 12.43 CZK. That means that one pint (0.5 l) of beer costs 6.37 CZK for 12° beer and 6.21 CZK for 10° beer.

4.3.3.4 Depreciation

Very important section of the cost analysis is the depreciation. The depreciation is part of expenses. There exist two kinds of depreciation, for taxation and accounting purposes. The depreciation for the accounting and financial purposes were already calculated in the chapter 4.3.1.2 *The Way of Financing*. There were used the Straight Line Depreciation. This part focuses on the tax depreciation. In this analysis the brew house would be in the second group and the time for the depreciation would be 5 years.

The straight line depreciation is calculated as the value of the given property (without VAT) in the year multiplied the rate of the given year. These depreciations are mentioned in table 12:

Table 12: Straight Line Depreciation, in CZK

<i>Year</i>	<i>Rate</i>	<i>Initial Amount</i>	<i>Depreciation</i>	<i>Final Amount</i>
1.	0.11	5,270,000.00	579,700.00	4,690,300.00
2.	0.2225	4,690,300.00	1,172,575.00	3,517,725.00
3.	0.2225	3,517,725.00	1,172,575.00	2,345,150.00
4.	0.2225	2,345,150.00	1,172,575.00	1,172,575.00
5.	0.2225	1,172,575.00	1,172,575.00	0.00

Source: Own Elaboration

According to the current law the percentage for the first year is 11 % and for other 4 years it is 25.25 %. The depreciation is calculated as the amount of the property multiplied by this rate. The depreciation expense is lowest in the first year and from the second to fifth year remains the same.

The other type of depreciation, the accelerated depreciation, is calculated also with the usage of coefficients. The initial amount in the given year is divided by this coefficient. The below mentioned table (table 13) describes this situation:

Table 13: Accelerated Depreciation, in CZK

<i>Year</i>	<i>Coefficient</i>	<i>Initial Amount</i>	<i>Depreciation</i>	<i>Final Amount</i>
1. rok	5	5,270,000.00	1,054,000.00	4,216,000.00
2. rok	6	4,216,000.00	1,686,400.00	2,529,600.00
3. rok	6	2,529,600.00	1,264,800.00	1,264,800.00
4. rok	6	1,264,800.00	843,200.00	421,600.00
5. rok	6	421,600.00	421,600.00	0.00

Source: Own Elaboration

The following comparison shows that in case of accelerating depreciation the value decreased faster than for the case of straight line depreciation.

'Accelerated depreciation has the effect of reducing the amount of taxable income in the immediate future through increased expense recognition, and of increasing the amount of taxable income in later years.' [33] This is the reason that these depreciation would be added to the following analysis.

4.3.3.5 Taxes

The taxation is very problematical part of every analysis. The consumer taxes were already mentioned in the cost analysis. The income tax for this enterprise is according to law set to 19 % and will be used for other calculations. The Value added tax (VAT) on the sale of goods and services increased from 19 % in 2009 to 20 % in 2010. [51]

4.3.4 Revenues

Revenues from the sold product

The selling price is considered to be 30 CZK per 0.5 l for 12° beer and 24 CZK per 0.5 l for 10° beer including VAT (20 %).

The yearly production of beer is considered to be 700 hl. Table 14 shows the relationships between the given portfolio and the expenses and revenues. The highest profit shows the third portfolio. The amount is 1,048,662.40 CZK.

Table 14: Product Portfolios, in CZK

		1.PORTFOLIO	2. PORTFOLIO	3. PORTFOLIO
		60% 10° and 40% 12°	50% 10° and 50% 12°	40% 10° and 60% 12°
		420hl 10° and 280hl 12°	350hl 10° and 350hl 12°	280hl 10° and 420hl 12°
Production Price	10°	521,938.56	434,948.80	347,959.04
	12°	356,919.04	446,148.80	535,378.56
TOTAL Production Price		878,857.6	881,097.60	883,337.6
Selling Price	10°	1,008,000.00	840,000.00	672,000.00
	12°	840,000.00	1,050,000.00	1,260,000.00
TOTAL Selling Price		1,848,000.00	1,890,000.00	1,932,000.00
Particular Profit	10°	462,141.60	385,118.00	308,094.40
	12°	467,134.40	583,918.00	700,701.60
Total Profit		969,142.40	1,008,902.40	1,048,662.40

Source: Own Elaboration

The total revenues depend on the production and selling of 12° beer more than on 10° beer. These revenues are calculated with the expectation that whole production would be sold. For the following calculations it is expected that 100 % of the production would be sold.

4.3.5 Cash Flow vs. Profit

There exists the financial statement called cash flow and it covers three main areas: operation, investment and financing. Because of the lack of investment and financing values, just the operational cash flow is examined in this study. The cash flow is the difference between revenues and expenditures excl. depreciation. Table 15 shows the list of all costs and their price. The items included in the operating cash flow are wages incl. social and health insurance, consumption taxes, material, energy and the annuity. The highest amount is the repayment for the loan in amount of 615,691.70 CZK and the second highest is the wage incl. social and health insurance.

Table 15: Operational Cash Flow, in CZK

<i>Items</i>	<i>Price</i>
... wages	360,000.00
... social insurance	90,000.00
... health insurance	32,400.00
... consumption taxes	125,440.00
... material	232,064.00
... energy	83,300.00
... repayment - loan	615,691.70
TOTAL	1,538,895.70

Source: Own Elaboration

For the calculation of profit and cash flow the income tax has to be expressed. To get the income tax it is necessary to calculate the tax base. In this case the tax base is calculated as the revenues minus the expenses excl. depreciation and from this amount the tax depreciation is deducted. The table in Appendix 5 shows the results from the calculation where the straight line depreciation was used. The depreciation causes that the final tax is in the first year really low and next four years is zero. This fact is very important for the profit and cash flow calculation, because the net profit and cash flow will increase.

It is very important for every investment to make profit. The main cash revenues are incomes of the enterprise. There exist huge difference between profit and cash flow.

Table 16 shows the calculation of the net profit. Firstly the revenues were abstracted from the expenses (excl. depreciation) and then the accounting depreciation was deducted. According to this calculation the profit was expressed. To get the net profit the tax from the previous calculation has to be deducted as well. The net profit shows the positive values during next 20 years.

Table 16: Net Profit Calculation, in CZK

<i>Year</i>	<i>Revenues</i>	<i>Costs</i>	<i>Accounting Depreciation</i>	<i>Profit</i>	<i>Tax</i>	<i>Net Profit</i>
1	1,932,000.00	1,344,804.00	263,500.00	323,696.00	1,424.24	322,271.76
2	1,932,000.00	1,329,276.66	263,500.00	339,223.34	0.00	339,223.34
3	1,932,000.00	1,312,507.14	263,500.00	355,992.86	0.00	355,992.86
4	1,932,000.00	1,294,396.06	263,500.00	374,103.94	0.00	374,103.94
5	1,932,000.00	1,274,836.08	263,500.00	393,663.92	0.00	393,663.92
6	1,932,000.00	1,253,711.31	263,500.00	414,788.69	128,874.85	285,913.83
7	1,932,000.00	1,230,896.56	263,500.00	437,603.44	133,209.65	304,393.78
8	1,932,000.00	1,206,256.63	263,500.00	462,243.37	137,891.24	324,352.13
9	1,932,000.00	1,179,645.51	263,500.00	488,854.49	142,947.35	345,907.14
10	1,932,000.00	1,150,905.49	263,500.00	517,594.51	148,407.96	369,186.55
11	1,932,000.00	1,119,866.28	263,500.00	548,633.72	154,305.41	394,328.32
12	1,932,000.00	1,086,343.92	263,500.00	582,156.08	160,674.66	421,481.42
13	1,932,000.00	1,050,139.78	263,500.00	618,360.22	167,553.44	450,806.78
14	1,932,000.00	1,011,039.30	263,500.00	657,460.70	174,982.53	482,478.16
15	1,932,000.00	968,810.79	263,500.00	699,689.21	183,005.95	516,683.26
16	1,932,000.00	923,204.00	263,500.00	745,296.00	191,671.24	553,624.76
17	1,932,000.00	923,204.00	263,500.00	745,296.00	191,671.24	553,624.76
18	1,932,000.00	923,204.00	263,500.00	745,296.00	191,671.24	553,624.76
19	1,932,000.00	923,204.00	263,500.00	745,296.00	191,671.24	553,624.76
20	1,932,000.00	923,204.00	263,500.00	745,296.00	191,671.24	553,624.76

Source: Own Elaboration

Table 17 shows the cash flow calculation. The procedure of the cash flow calculation is very similar to the profit calculation. The inflow is the same value as the revenues. But the outflow includes the whole repayment for the loan. That is the reason that the values are different. The tax is the same as in the previous calculation. The cash flow calculation shows the positive values of each cash flow.

Table 17: Cash Flow Calculation, in CZK

<i>Year</i>	<i>Inflow</i>	<i>Outflow</i>	<i>Cash Flow</i>	<i>Tax</i>	<i>Net Cash Flow</i>
1	1,932,000.00	1,538,895.70	393,104.30	1,424.24	391,680.06
2	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30
3	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30
4	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30
5	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30
6	1,932,000.00	1,538,895.70	393,104.30	128,874.85	264,229.45
7	1,932,000.00	1,538,895.70	393,104.30	133,209.65	259,894.65
8	1,932,000.00	1,538,895.70	393,104.30	137,891.24	255,213.06
9	1,932,000.00	1,538,895.70	393,104.30	142,947.35	250,156.94
10	1,932,000.00	1,538,895.70	393,104.30	148,407.96	244,696.34
11	1,932,000.00	1,538,895.70	393,104.30	154,305.41	238,798.89
12	1,932,000.00	1,538,895.70	393,104.30	160,674.66	232,429.64
13	1,932,000.00	1,538,895.70	393,104.30	167,553.44	225,550.86
14	1,932,000.00	1,538,895.70	393,104.30	174,982.53	218,121.77
15	1,932,000.00	1,538,895.70	393,104.30	183,005.95	210,098.35
16	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76
17	1,932,000.00	923,205.75	1,008,794.25	191,671.24	817,123.01
18	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76
19	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76
20	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76

Source: Own Elaboration

4.3.6 Evaluation

The evaluation of the whole situation of the investment is required because if the investment is wrong the impact on long-term could be huge. This enterprise is a small company and cannot be evaluated the same way as the big enterprise. The reason is that there does not exist enough resources and that the goal is not just the profit making but also the possibility to be their own manager etc. [22, p.275]

There are two possible methods using for the calculation, static and dynamic methods.

4.3.6.1 Static Methods

Using the static method the profitability of the investment and the payback period would be calculated.

4.3.6.1.1 Profitability

The average cash flow is 422,445.46 CZK for this investment. If the total amount of 5,270,000.00 CZK is divided by this average value then the result is 8.02 %. The profitability would be reached if this percentage is higher than the interest rate which is exactly 8 %. This calculation shows that the profitability would not be so high because the value is just about 0.02 % higher.

4.3.6.1.2 Payback Period

- The calculation according to the formula

The payback period is calculated as the investment divided by average cash flow. The investment is 5,270,000.00 CZK and after the division the payback period is 12 years and almost 6 months

- The next calculation (table 18) shows the payback period calculated with the usage of cumulated cash flow. The result is 16 years and almost 11 months. This number is possible to calculate from the table 18. To find the result it is necessary to find the value which is close to the required 5,270,000.00 CZK. This value is in the 17th year and with the calculation one can realize that the payback is 16 years and almost 11 months.

Table 18: Cumulated Cash Flow, in CZK

<i>Year</i>	<i>Net Cash Flow</i>	<i>Cumulated CF</i>
1	391,680.06	391,680.06
2	393,104.30	784,784.36
3	393,104.30	1,177,888.65
4	393,104.30	1,570,992.95
5	393,104.30	1,964,097.25
6	264,229.45	2,228,326.70
7	259,894.65	2,488,221.34
8	255,213.06	2,743,434.40
9	250,156.94	2,993,591.35
10	244,696.34	3,238,287.69
11	238,798.89	3,477,086.58
12	232,429.64	3,709,516.22
13	225,550.86	3,935,067.08
14	218,121.77	4,153,188.84
15	210,098.35	4,363,287.19
16	817,124.76	5,180,411.95
17	817,123.01	5,997,534.96
18	817,124.76	6,814,659.72
19	817,124.76	7,631,784.48
20	817,124.76	8,448,909.24

Source: Own Elaboration

These methods are not totally suitable because they do not include the time factor. The recommendation is to reach the shortest time as possible. If the payback period is shorter than the useful life of the investment than the investment can bring some profit. The useful life is estimated to be 20 years and the calculation shows that the investment would be paid in shorter time.

4.3.6.2 *Dynamic Methods*

The following dynamic methods include the time factor into the calculation and that is the reason that these methods are more suitable for the evaluation.

4.3.6.2.1 Present Value of Cash Flow (PVCF)

The cost for the investment is mostly paid in the shorter time than the gains are realized. The time factor determines the value of money today and in the future. This value is higher nowadays than in the future. That means that time value of money will change. [22, p.289] The following table (table 19) shows the current value of the future cash flows. It is important to realize that the factor of inflation is not considered in this calculation.

The expected time for using the brew house would be 20 years. Of course that the reparation or maintenance or other necessary service has to be done during its useful life but now these are not considered. In this case the nominal interest rate is 8 % and the tax rate is equal to 19 %.

Table 19: Present Value of Cash Flow, in CZK

<i>Year</i>	<i>Inflow</i>	<i>Outflow</i>	<i>Cash Flow</i>	<i>Tax</i>	<i>Net Cash Flow</i>	<i>PVCF</i>
1	1,932,000.00	1,538,895.70	393,104.30	1,424.24	391,680.06	362,666.72
2	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30	337,023.58
3	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30	312,058.87
4	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30	288,943.39
5	1,932,000.00	1,538,895.70	393,104.30	0.00	393,104.30	267,540.18
6	1,932,000.00	1,538,895.70	393,104.30	128,874.85	264,229.45	166,509.37
7	1,932,000.00	1,538,895.70	393,104.30	133,209.65	259,894.65	151,646.03
8	1,932,000.00	1,538,895.70	393,104.30	137,891.24	255,213.06	137,883.67
9	1,932,000.00	1,538,895.70	393,104.30	142,947.35	250,156.94	125,140.75
10	1,932,000.00	1,538,895.70	393,104.30	148,407.96	244,696.34	113,341.75
11	1,932,000.00	1,538,895.70	393,104.30	154,305.41	238,798.89	102,416.75
12	1,932,000.00	1,538,895.70	393,104.30	160,674.66	232,429.64	92,301.01
13	1,932,000.00	1,538,895.70	393,104.30	167,553.44	225,550.86	82,934.58
14	1,932,000.00	1,538,895.70	393,104.30	174,982.53	218,121.77	74,261.96
15	1,932,000.00	1,538,895.70	393,104.30	183,005.95	210,098.35	66,231.76
16	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76	23,8510.93
17	1,932,000.00	923,205.75	1,008,794.25	191,671.24	817,123.01	220,842.98
18	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76	204,484.68
19	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76	189,337.66
20	1,932,000.00	923,204.00	1,008,796.00	191,671.24	817,124.76	175,312.65
					SUM NCF	3,709,389.29

Source: Own Elaboration

According to the calculations the NPCF is 3,709,389.76 CZK. The investment should not be realized if the result does not agree with the condition: $NPCF \geq IN$. This condition is not fulfilled. The NPCF is in this case lower than the initial investment. This calculation shows that the investment should not be realized because it will not bring enough money.

4.3.6.2 Net Present Value

PVCF is 3,709,389.29 CZK and if the investment in amount of 5,270,000.00 CZK is deducted the result is negative. If the result is positive the investment is acceptable. This calculation showed that the investment is not profitable because there is the difference of 1,560,610.71 CZK.

4.3.6.4 Interest Rate of Return

The calculation of IRR deals also with the present values. The goal is to find the suitable discount rate where the present value of the cash flows is equal to the current amount needed for the investment. IRR for this investment is -4 % which is negative value and as well lower than the required interest rate. According to this calculation the project is not acceptable.

4.3.7 Financial Ratios and Comparable Analysis

Because of lack of some information the comparative analysis is based on the total assets turnover, debt ratio and net profit margin.

4.3.7.1 The Activity Ratio - Total Assets Turnover

TAT is 0.37 and means that 1 CZK of the assets generate 0.37 CZK of sales. This ratio depends on the depreciation which increases the value of this ratio. Table 20 shows the increase of the total assets turnover in the next 10 years with the using of straight line depreciation. It is evident that the total assets turnover tends to increase. This means that after the primer hard time the business would recover and become more profitable.

Table 20: Total Assets Turnover during next 5 years, in CZK

Year	1	2	3	4	5
Depreciation	250 000,00	250 000,00	250 000,00	250 000,00	250 000,00
The final amount	5 020 000,00	4 770 000,00	4 520 000,00	4 270 000,00	4 020 000,00
Total Asset Turnover	0,38	0,41	0,43	0,45	0,48

Source: Own Elaboration

If the value is low it means that the asset is not use efficiently. This ratio could lead the decision maker to think about the way of better usage of the property. In this case the better usage would be the higher capacity. The higher amount produced. At the beginning of this analysis it was expected that the total capacity is 700 hl per year. The microbrewery could produce 1,000 hl per year. The suggestion could be to increase the production. This decision does not depend just on this number but also on the potential market. If there would be the potential customers who would buy more products.

4.3.7.2 Debt Management Ratio – Debt Ratio

Debt ratio is 1.75 and means the high leverage of the firm. This is really huge amount and shows that the company has more debts than its assets. It is mainly because the initial investment was really huge. The loan will be paid every year which will cause decrease of the total debt. On the other hand the depreciation will lower the assets amount. Table 21 describes this relationship at the end of each year when the repayment was already paid.

Table 21: Debt Ratio during next 5 years, in CZK

Year	1	2	3	4	5
Total Asstes - Depreciation	5 020 000,00	4 770 000,00	4 520 000,00	4 270 000,00	4 020 000,00
Total Debt	8 619 683,83	7 388 300,42	6 772 608,72	6 156 917,02	5 541 225,32
Debt Ratio	1,72	1,55	1,50	1,44	1,38

Source: Own Elaboration

4.3.7.3 Profitability Ratio – Net Profit Margin

This ratio is 0.17 and shows a number which can be express as the net profit of 0.17 CZK for 1 CZK of income. The result is not so high and it indicates that the company does not transfer sales into profit effectively. As well as the other ratios the result depends on the amount of the initial investment in this case.

The following table (table 22) shows the development of this ratio. The trend is slowly increasing which shows that the situation in the company will improve.

Table 22: Profit Margin on Sales during next 5 years, in CZK

Year	1	2	3	4	5
Net Profit	322 271,76	339 223,34	355 992,86	374 103,94	393 663,92
Sales	1 932 000,00	1 932 000,00	1 932 000,00	1 932 000,00	1 932 000,00
<i>Profit Margin on Sales</i>	<i>0,17</i>	<i>0,18</i>	<i>0,18</i>	<i>0,19</i>	<i>0,20</i>

Source: Own Elaboration

Conclusion

The ratio analysis shows the big influence of the price on the initial investment. The calculations of net present value and interest rate of return show that the project would not bring the required profit. All the ratios do not seem to show big efficiency or profitability, but the analysis of the future shows the improvement. This expresses especially the debt ratio which is totally huge in the first year but will decrease during the paying off the loan. The profitability and activity ratios tend to increase which shows the better situation in the future.

4.4. Conclusion of the financial analysis

The financial part discussed the main financing and accounting issues. The investment – microbrewery acquiring – is estimated to be 5,270,000.00 CZK without VAT plus the construction work, the installation and the transport. At the beginning the method for the acquiring the brew house was chosen. The leasing showed better results but because of its disadvantage regarding the ownership, the loan was chosen. The loan is expected to be taken for 15 years and the annuity repayment was calculated to be 615,691.00 CZK.

The cost analysis described and pointed out the price and amount of the most important ingredients, the price for energy, wages and consumer taxes. According to the calculation the production price of 1 liter of 12° beer is 12.75 CZK and 12.43 CZK for 10° beer. On the other hand the selling price is 30 CZK for 12° beer and 24 CZK for 10° beer. There are many possible choices of the given portfolio of products. In this case the more profitable one was chosen. It means that the brewery would produce 420 hl of 12° beer and 280 hl of 10° beer. The total price of the sold products for the whole production per year

was calculated to be 1,932,000.00 CZK. On the basis of these data analysis the NPV, NPCF and IRR were calculated. The results were not satisfying. The net present value was lower about 1,560,610.71 CZK than the initial investment. The interest rate of return was calculated as -4 % which is negative and lower than the interest rate of the loan. These both calculations show that the investment should not be realized because the profit is not ensured. The calculation of payback period with the usage of cumulated cash flow shows that the investment would be paid back within 16 years and 11 months.

5. CONCLUSIONS

5.1 Final Decision

The main idea of the establishment of the microbrewery is very interesting. Currently there is a 'boom' with such enterprises and the number of microbreweries increases. The conditions in the Czech Republic are great. The big demand on the beer exists and the expectation of changing the demand in favor of microbreweries is advantageous. Customers started to change their preferences and many of them tend to buy the unique and special beer from the microbreweries.

In spite of the fact that the conditions in the Czech Republic are optimistic the financial and accounting analysis showed that under the given assumptions the investment to microbrewery is not very profitable. The IRR is -4 % which is negative value and much lower than the interest rate of 8 %. Also the net present value is lower than the investment amount. The ratio analysis showed the importance of the time and showed the trend in the increase of efficiency and profitability and decrease of the firm's leverage.

It should be emphasized that many influences of the given environment were not included in the calculation. The analysis does not include the reinvestments, payments for reparations, the maintenance and the service. Also the growth of any of the costs as the material, wages, or energy is not discussed and the inflation was not taken into account.

According to the whole analysis the investment is not recommended to be realized.

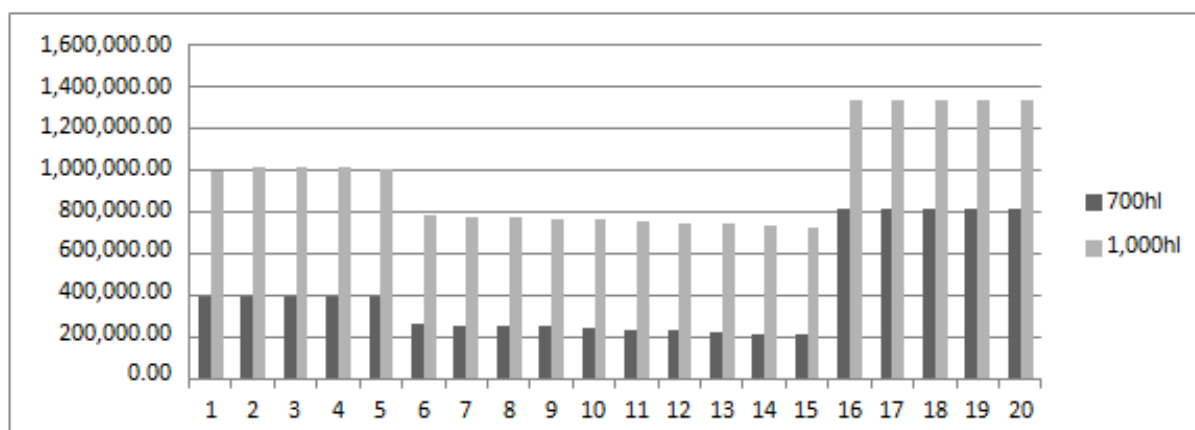
5.2 Proposal for the Improvement of the Current Situation

According to the subsequent analysis it is recommended to increase the production to the maximum which is 1,000 hl per year. The increase of the production might bring more profit. The selling price would remain on the same level and with the given third portfolio (selling of 60 % of 12° beer and 40 % of 10° beer) the income would be 2,760,000.00 CZK which is about 828,000.00 CZK more than with the production of 700 hl. The profit would increase about 432,341.10 CZK. The main cost is the wage of the brewer. This wage could be the same for 700 hl and 1,000 hl. In this particular case the wage belongs to the fix costs. The economy of scale is now very important and crucial. Because of the fact, that the brewer's salary is a fixed asset, then the costs per one unit will lower with the increasing production.

The Appendixes 7, 8 and 9 show exactly the same financial analysis which was already done for the 700 hl production, but now it is calculated with the production of 1,000 hl per year. The results show higher income tax, higher net profit and higher cash flow. The net present value is calculated as 9,192,880.31 CZK which is higher than the initial price of the brew house. The IRR is calculated as to be 8.31 % which is higher than the interest rate. Both these values show that this investment should be realized and will bring the profit in the future.

Graph 2 shows the difference between net cash flow for the production of 700 hl and 1,000 hl. The axis x determines the time in years and the axis y shows the relevant net cash flow in CZK. It is evident that the recommended production will be more profitable. It is important to mention that the brewer should have the capacity to brew 1,000 hl.

Graph 2: Net Cash Flow - Comparison for 700hl and 1,000hl



Source: Own Elaboration

This analysis showed how big influence can have the fixed assets on the profitability. The fixed costs is the wage in this case. The brewer is able to produce 700 hl as well 1,000 hl per year. This is actually the economy of scale and it is visible that the increase of the production can bring the investment into the positive numbers.

To conclude the situation these numbers are calculated on the assumption that all the production is sold. The competition is high and nowadays it is very popular to join the microbrewery with the pub and established the brew pub. The brew pub is actually the restaurant where the beer from the brewery is sold. This type of restaurant might also bring

higher profits to the investor. The combination of a special and unique type of beer, the special food and the atmosphere might be very attractive for many customers. The idea is interesting and the brew house can bring a unique product to the customer.

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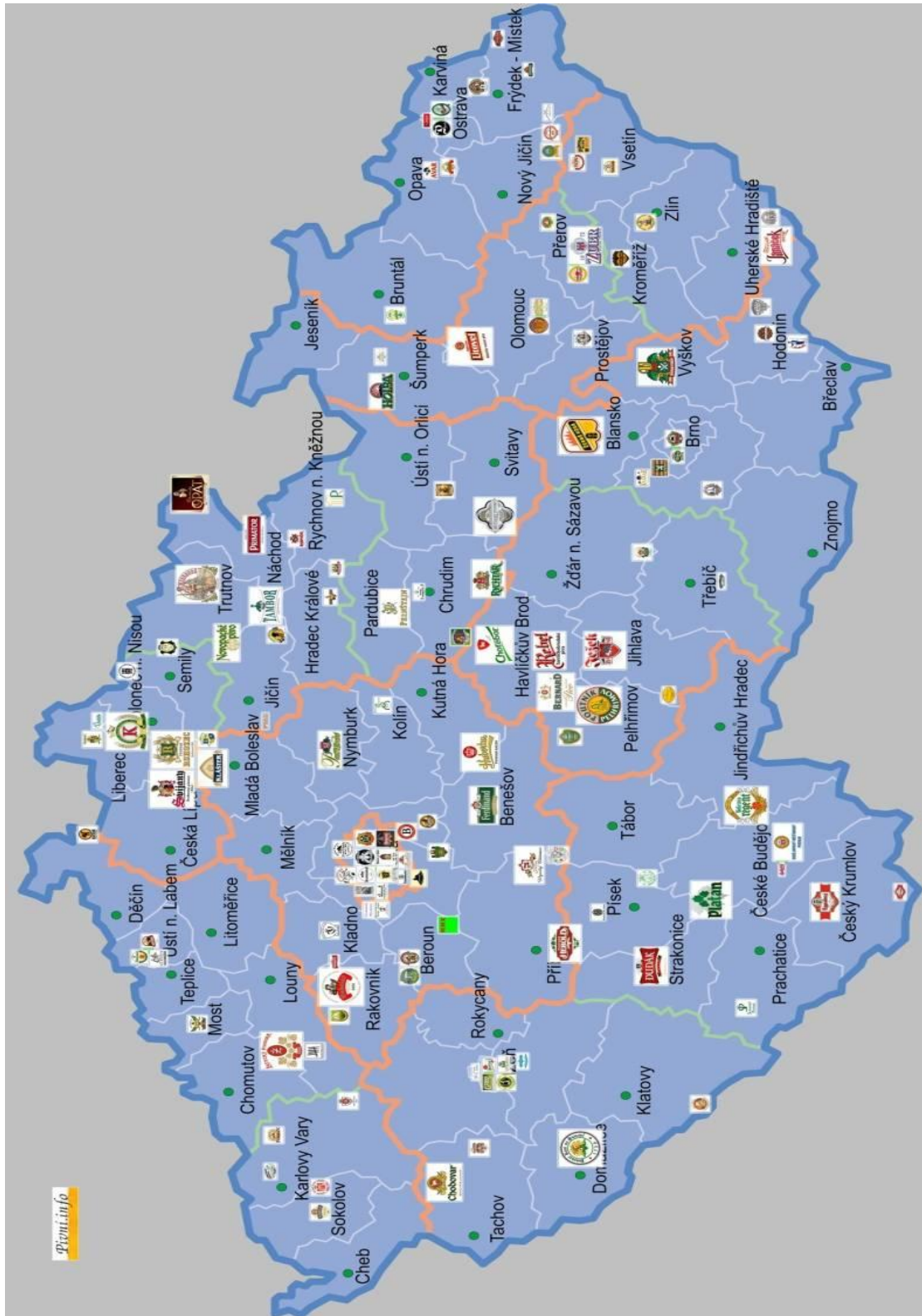
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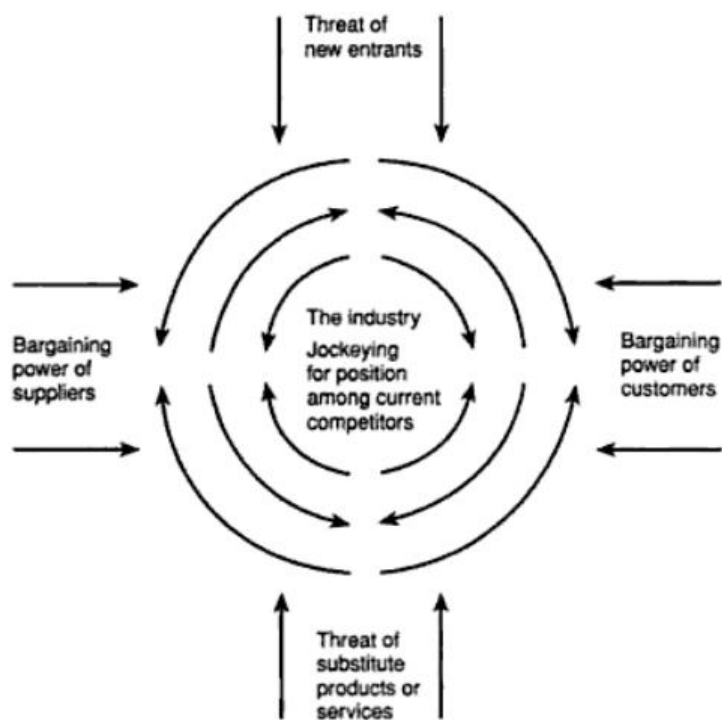
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Appendix 1: Maps of Microbreweries in the Czech Republic



Source: *Pivni.info*, Pivní mapa

Appendix 2: Porter Five Forces



Source: *On Competition*; Porter

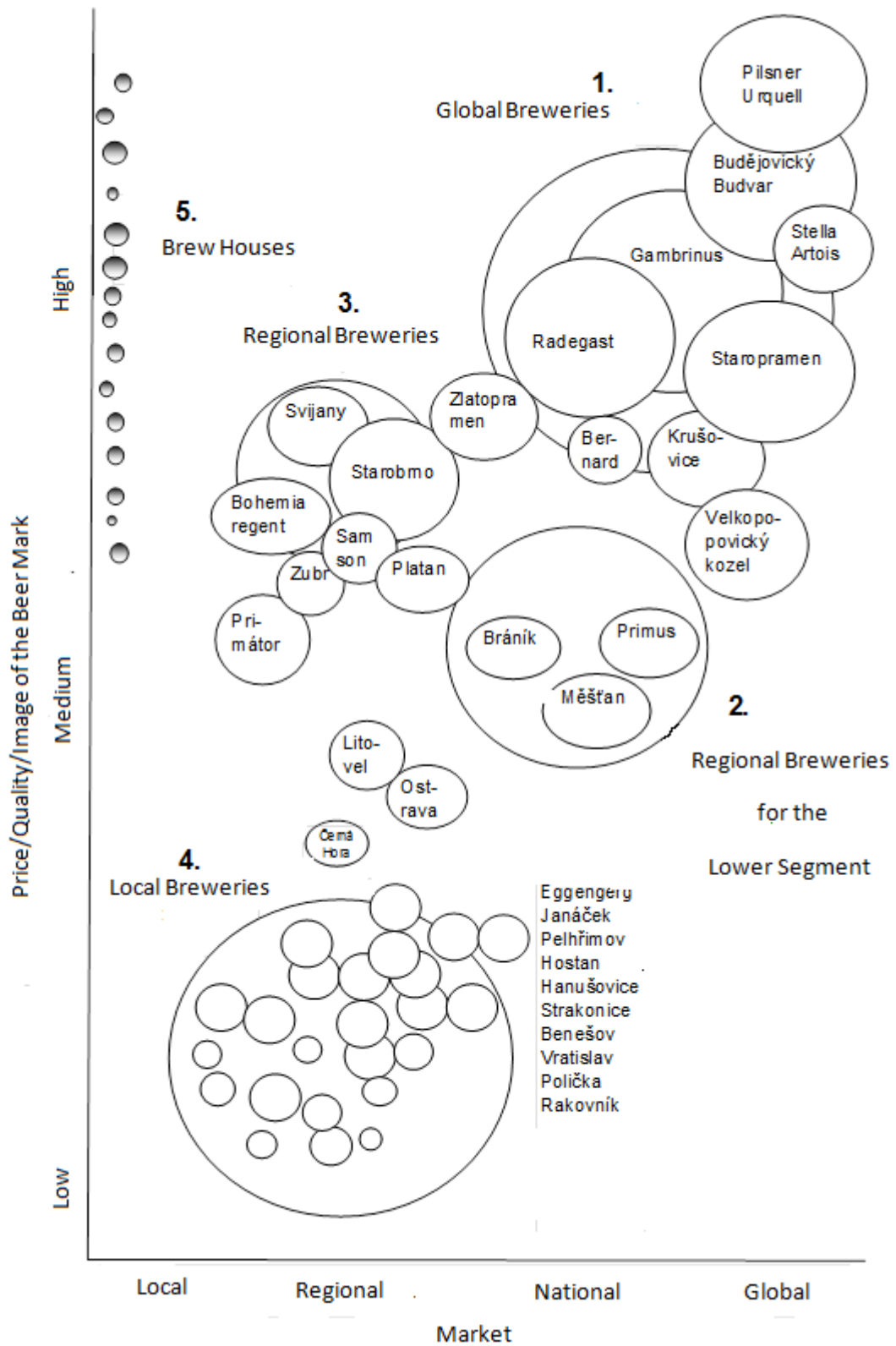
Appendix 3: Map – Kladno

2109 - SO ORP Kladno



Source: ČSÚ, 2109 - SO ORP Kladno

Appendix 4: Strategic Map of the Brewing Industry for the Czech Republic



Source: *Trh s pivem v České republice a jeho determinanty*; Maier, Own Translation

Appendix 5: Income Tax – Calculation, in CZK

<i>Year</i>	<i>Revenues</i>	<i>Expenses</i>	<i>Depreciation</i>	<i>Tax Base</i>	<i>Tax</i>
1	1,932,000.00	1,344,804.00	579,700.00	7,496.00	1,424.24
2	1,932,000.00	1,329,276.66	1,172,575.00	-569,851.66	0.00
3	1,932,000.00	1,312,507.14	1,172,575.00	-553,082.14	0.00
4	1,932,000.00	1,294,396.06	1,172,575.00	-534,971.06	0.00
5	1,932,000.00	1,274,836.08	1,172,575.00	-515,411.08	0.00
6	1,932,000.00	1,253,711.31	0.00	678,288.69	128,874.85
7	1,932,000.00	1,230,896.56	0.00	701,103.44	133,209.65
8	1,932,000.00	1,206,256.63	0.00	725,743.37	137,891.24
9	1,932,000.00	1,179,645.51	0.00	752,354.49	142,947.35
10	1,932,000.00	1,150,905.49	0.00	781,094.51	148,407.96
11	1,932,000.00	1,119,866.28	0.00	812,133.72	154,305.41
12	1,932,000.00	1,086,343.92	0.00	845,656.08	160,674.66
13	1,932,000.00	1,050,139.78	0.00	881,860.22	167,553.44
14	1,932,000.00	1,011,039.30	0.00	920,960.70	174,982.53
15	1,932,000.00	968,810.79	0.00	963,189.21	183,005.95
16	1,932,000.00	923,204.00	0.00	1,008,796.00	191,671.24
17	1,932,000.00	923,204.00	0.00	1,008,796.00	191,671.24
18	1,932,000.00	923,204.00	0.00	1,008,796.00	191,671.24
19	1,932,000.00	923,204.00	0.00	1,008,796.00	191,671.24
20	1,932,000.00	923,204.00	0.00	1,008,796.00	191,671.24

Source: Own Elaboration

Appendix 6: The Tax Calculation for the Beer Production of 1,000hl, in CZK

<i>Year</i>	<i>Revenues</i>	<i>Costs</i>	<i>Depreciation</i>	<i>Tax Base</i>	<i>Tax</i>
1	2,760,000.00	1,533,720.00	1,054,000.00	172,280.00	32,733.20
2	2,760,000.00	1,518,192.66	1,172,575.00	69,232.34	13,154.14
3	2,760,000.00	1,501,423.14	1,172,575.00	86,001.86	16,340.35
4	2,760,000.00	1,483,312.06	1,172,575.00	104,112.94	19,781.46
5	2,760,000.00	1,463,752.08	1,172,575.00	123,672.92	23,497.85
6	2,760,000.00	1,442,627.31	0.00	1,317,372.69	250,300.81
7	2,760,000.00	1,419,812.56	0.00	1,340,187.44	254,635.61
8	2,760,000.00	1,395,172.63	0.00	1,364,827.37	259,317.20
9	2,760,000.00	1,368,561.51	0.00	1,391,438.49	264,373.31
10	2,760,000.00	1,339,821.49	0.00	1,420,178.51	269,833.92
11	2,760,000.00	1,308,782.28	0.00	1,451,217.72	275,731.37
12	2,760,000.00	1,275,259.92	0.00	1,484,740.08	282,100.62
13	2,760,000.00	1,239,055.78	0.00	1,520,944.22	288,979.40
14	2,760,000.00	1,199,955.30	0.00	1,560,044.70	296,408.49
15	2,760,000.00	1,157,726.79	0.00	1,602,273.21	304,431.91
16	2,760,000.00	1,112,120.00	0.00	1,647,880.00	313,097.20
17	2,760,000.00	1,112,120.00	0.00	1,647,880.00	313,097.20
18	2,760,000.00	1,112,120.00	0.00	1,647,880.00	313,097.20
19	2,760,000.00	1,112,120.00	0.00	1,647,880.00	313,097.20
20	2,760,000.00	1,112,120.00	0.00	1,647,880.00	313,097.20

Source: Own Elaboration

Appendix 7: The Net Profit Calculation for the Beer Production of 1,000hl, in CZK

<i>Year</i>	<i>Revenues</i>	<i>Costs</i>	<i>Accounting Depreciation</i>	<i>Profit</i>	<i>Tax</i>	<i>Net Profit</i>
1	2,760,000.00	1,533,720.00	263,500.00	962,780.00	32,733.20	930,046.80
2	2,760,000.00	1,518,192.66	263,500.00	978,307.34	13,154.14	965,153.19
3	2,760,000.00	1,501,423.14	263,500.00	995,076.86	16,340.35	978,736.51
4	2,760,000.00	1,483,312.06	263,500.00	101,3187.94	19,781.46	993,406.48
5	2,760,000.00	1,463,752.08	263,500.00	1,032,747.92	23,497.85	1,009,250.06
6	2,760,000.00	1,442,627.31	263,500.00	1,053,872.69	250,300.81	803,571.87
7	2,760,000.00	1,419,812.56	263,500.00	1,076,687.44	254,635.61	822,051.82
8	2,760,000.00	1,395,172.63	263,500.00	1,101,327.37	259,317.20	842,010.17
9	2,760,000.00	1,368,561.51	263,500.00	1,127,938.49	264,373.31	863,565.18
10	2,760,000.00	1,339,821.49	263,500.00	1,156,678.51	269,833.92	886,844.59
11	2,760,000.00	1,308,782.28	263,500.00	1,187,717.72	275,731.37	911,986.36
12	2,760,000.00	1,275,259.92	263,500.00	1,221,240.08	282,100.62	939,139.46
13	2,760,000.00	1,239,055.78	263,500.00	1,257,444.22	288,979.40	968,464.82
14	2,760,000.00	1,199,955.30	263,500.00	1,296,544.70	296,408.49	1,000,136.20
15	2,760,000.00	1,157,726.79	263,500.00	1,338,773.21	304,431.91	1,034,341.30
16	2,760,000.00	1,112,120.00	263,500.00	1,384,380.00	313,097.20	1,071,282.80
17	2,760,000.00	1,112,120.00	263,500.00	1,384,380.00	313,097.20	1,071,282.80
18	2,760,000.00	1,112,120.00	263,500.00	1,384,380.00	313,097.20	1,071,282.80
19	2,760,000.00	1,112,120.00	263,500.00	1,384,380.00	313,097.20	1,071,282.80
20	2,760,000.00	1,112,120.00	263,500.00	1,384,380.00	313,097.20	1,071,282.80

Source: Own Elaboration

Appendix 8: The Cash Flow Calculation for the Beer Production of 1,000hl, in CZK

<i>Year</i>	<i>Inflow</i>	<i>Outflow</i>	<i>Cash Flow</i>	<i>Tax</i>	<i>Net Cash Flow</i>	<i>PVCF</i>
1	2,760,000.00	1,727,811.70	1,032,188.30	32,733.20	999,455.10	925,421.39
2	2,760,000.00	1,727,811.70	1,032,188.30	13,154.14	1,019,034.15	873,657.54
3	2,760,000.00	1,727,811.70	1,032,188.30	16,340.35	1,015,847.94	806,412.85
4	2,760,000.00	1,727,811.70	1,032,188.30	19,781.46	1,012,406.84	744,149.25
5	2,760,000.00	1,727,811.70	1,032,188.30	23,497.85	1,008,690.44	686,497.77
6	2,760,000.00	1,727,811.70	1,032,188.30	250,300.81	781,887.49	492,721.75
7	2,760,000.00	1,727,811.70	1,032,188.30	254,635.61	777,552.69	453,694.52
8	2,760,000.00	1,727,811.70	1,032,188.30	259,317.20	772,871.10	417,558.20
9	2,760,000.00	1,727,811.70	1,032,188.30	264,373.31	767,814.98	384,098.65
10	2,760,000.00	1,727,811.70	1,032,188.30	269,833.92	762,354.38	353,117.59
11	2,760,000.00	1,727,811.70	1,032,188.30	275,731.37	756,456.93	324,431.41
12	2,760,000.00	1,727,811.70	1,032,188.30	282,100.62	750,087.68	297,870.14
13	2,760,000.00	1,727,811.70	1,032,188.30	288,979.40	743,208.90	273,276.37
14	2,760,000.00	1,727,811.70	1,032,188.30	296,408.49	735,779.81	250,504.36
15	2,760,000.00	1,727,811.70	1,032,188.30	304,431.91	727,756.39	229,419.16
16	2,760,000.00	1,112,120.00	1,647,880.00	313,097.20	1,334,782.80	389,610.38
17	2,760,000.00	1,112,120.00	1,647,880.00	313,097.20	1,334,782.80	360,750.35
18	2,760,000.00	1,112,120.00	1,647,880.00	313,097.20	1,334,782.80	334,028.10
19	2,760,000.00	1,112,120.00	1,647,880.00	313,097.20	1,334,782.80	309,285.28
20	2,760,000.00	1,112,120.00	1,647,880.00	313,097.20	1,334,782.80	286,375.26
					SUM NPCF	9,192,880.31

Source: Own Elaboration