Mendel University in Brno
Faculty of Business and Economics

Sustainable Competitiveness of Mineral Water Producers settled in Slovakia

Diploma thesis

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zadanie

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I would like to thank my family together with my girlfriend for their support and belief not only during the elaboration of the diploma thesis but also during all my studies.

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Abstract
ONDREJIČKA, F. Sustainable Competitiveness of Mineral Water Producers settled in Slovakia. Diploma thesis. Brno: Mendel University in Brno, 2016.
The diploma thesis deals with the financial situation of companies involved in production of mineral water in Slovakia. The main objective of this thesis is to identify key factors influencing competitiveness and economic performance. A financial situation of companies is assessed through financial analysis and calculation of one of current business performance indicators - economic value added.
The thesis is divided into two parts. Theoretical part creates a literary basis for evaluating the methods used in financial analysis and these methods are applied in empirical part. Based on gathered information, there are defined proposals and recommendations at the end of the thesis, which should lead to a more favorable development of the financial performance of entire sector.

Keywords
Competitiveness, Mineral water production, financial analysis, strategic analysis, economic value added, ROE.

Abstrakt
ONDREJIČKA, F. Udržateľná konkurencieschopnosť producentov minerálnych vôd so sídlom na Slovensku. Diplomová práca. Brno: Mendelova Univerzita v Brně, 2016

Diplomová práca sa zaoberá finančnou situáciou spoločností podnikajúcich v oblasti výroby minerálnych vôd na Slovensku. Hlavným cieľom diplomovej práce je identifikovať kľúčové faktory, ktoré ovplyvňujú konkurencieschopnosť a ekonomickú výkonnosť. Finančná situácia spoločností je posudzovaná pomocou finančnej analýzy a výpočtom jedného zo súčasných ukazovateľov výkonnosti podniku - ekonomickej pridanej hodnoty.

Práca je rozdelená na dve základné časti. Teoretická časť tvorí literárny základ k použitým metódam vyhodnotenia finančnej situácie a v praktickej časti sú tieto metódy aplikované. Na základe zistených informácií sú v závere práce formulované návrhy a odporúčania, ktoré by mali viesť k priaznivejšiemu vývoju finančnej výkonnosti celého odvetvia.

Kľúčové slová
Konkurencieschopnosť, Produkcia minerálnych vôd, Finančná analýza, Strategická analýza, Ekonomická pridaná hodnota, ROE.

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1 Introduction

In current turbulent times it is very difficult to predict changes of company's environment. Therefore, an ability to adapt to environment's changes and finding a relative equilibrium is crucial for every organization, especially small or medium enterprises. Only the most flexible companies having clearly conceived strategy can succeed in this competitive environment. Such a need has intensified with the entry of Slovakia to the European Union. In the era of globalization, competition has become fiercer than ever before.

With increasing competition, a risk of possible crowding out of domestic firms by foreign ones rising, as well, and thus a competitive fight has become even more important.

In order to analyse competitiveness, correct and precise definition of this concept is crucial. However, it appears to be the biggest problem. Precise and uniform definition still does not exist. In order to be able to define an extent to which the company is competitive, it is necessary to know not only the company and its operation, but also a necessary knowledge of the macro environment in which the company operates and interconnectedness of particular internal and external factors. Based on the evaluation of individual factors and their importance we can identify determinants of competitiveness. Thus, there arises an important question: What are the determinants of firm competitiveness in successful firms working in given industry?

In general, the term competitiveness of a company means its ability to generate profits, as well as to maintain or expand their share of domestic or foreign markets. Put it differently, the competitive business is one that performs better than the competition - ideally in a sustainable way rather than just over the short-term. In order to be competitive, a business needs to have one or more competitive advantages.

In today's developed world and a fierce competitive fight, business performance plays an increasingly important role and can represent a comparative advantage. Today's dynamic economic world puts emphasis on a sustainable growth, adaptability to changing environments and long-term perspective. Therefore, each business entity should dispose of some methods of how to manage corporate quantities affecting its financial performance.

To ensure that a company manages to adapt its monetary policy to given circumstances more effectively, however, it requires tools examining the efficiency of financial operations at the simplest and most comprehensive way. In other words, instruments which are able to evaluate the economic performance of a company.

Until recently, measurements were based primarily on the classic indicators of financial analysis based on profit maximization. These include indicators of profitability, liquidity, indebtedness and activity. However, these proved to be insufficient, and therefore were sought new methods that could eliminate any shortcomings.

Approaches to performance evaluation of a company have undergone a considerable development. Main strategic goal of a business is not profit maximization but maximizing the company's value. Achieving this long-term goal is obviously associated with the accomplishment of interim goals. Among these targets belongs increasing of company's capital profitability and financial stability by attaining an appropriate financial structure relative to the asset base. Another important sub-goal is to generate sufficient cash flow to maintain solvency and liquidity. Financial analysis is an instrument determining individual components of the economic system of a company.

Many companies are gradually shifting from accounting figures to economic indicators, also called value indicators that besides economic performance evaluate also benefits of the owner.

Diploma thesis is divided into three main parts - theoretical, analytical and discussion of results and suggestions.

In theoretical part, firstly, diploma thesis examines basic concepts, competitiveness, classical and current methods of measuring company performance, their advantages and disadvantages. In the chapter devoted to modern methods, great emphasis is laid on the method of economic value added, which is crucial for the preparation of this thesis. Theoretical part is also focused on strategic analysis of an industry.

The analytical part is devoted to a strategic analysis of given sector and assessment of a company performance using selected traditional and current methods of performance evaluation.

Based on diploma thesis' findings, recommendations for sustainable competitiveness of enterprises and the entire industry are made in the last part of this paper – suggestion part.

1.1 Objectives

The aim of the diploma thesis is to identify key drivers influencing the competitiveness of non-alcoholic beverages producers, focusing on financial performance key drivers and possibilities for their improvement of companies specialising in production of non-alcoholic drinks - mineral water, specifically.

In order to fulfil the main objective, the current situation in the field of production of mineral water in Slovakia is described and it is analysed external and internal environment of companies. The objective also relates to two research questions which were settled. The first one examines the impact of economic crisis on analysed companies and identification of main factors influencing competitiveness of selected companies in the industry. The second research question deals with the current financial performance of mineral water producers when compared to the recent global economic crisis. To fulfil the main objective of the thesis it is crucial to focus individually on partial goals. The first partial goal is to evaluate an environment in which companies carry on their businesses and to assess an economic background in the field of mineral water production.

The second partial objective is to examine and compare current financial situation of selected enterprises by classical methods of financial analysis and by using current methods of assessing of economic performance of the company - economic value added indicator.

The third partial objective based on mathematical and statistical methods is to create a model and conduct appropriate tests, to find out whether it fulfills all needed requirements. The other objective is to determine factors of the model which have the largest impact on economic value added.

Finally, it is important to conduct the synthesis of partial qualitative and quantitative data resulting from performed analysis to identify key factors which contribute to sustainable competitiveness of the sector.

2 Theoretical Part

The literature research of the diploma thesis is focused on the overview of theoretical foundations that I have gained by examining printed and electronic literary sources available in Mendel University Library inquiring into sustainable competitiveness of soft drink production sector, and by my personal work experience in this field. Main topics examined in the theoretical part of this diploma thesis are competitiveness, business performance and financial analysis methods for assessing the economic performance of the company.

2.1 Competitiveness

A necessary condition for analysing competitiveness is a correct definition of this term. However, it just seems to be the biggest problem. There is no uniform definition of competitiveness in economic literature. Different definitions of competitiveness relate to multiple dimensions. In general, one can distinguish among some basic levels of competitiveness (Schmuck, 2008):

- competitiveness of a state
- competitiveness of a region
- competitiveness of a sector
- competitiveness of a company
- competitiveness of a product

Following the topic of diploma thesis we deal with competitiveness at a firm level. Competitiveness is essential condition for existence of any company and is implemented as an ability to maintain and further extend company owners' property. In this sense, competitiveness of a company is a question of strategic importance and is therefore a challenge for top management.

Competitiveness can be understood as a function that entrepreneurs must meet. It's a battle for market supremacy and effort to develop their own business, while maintaining a satisfaction of entrepreneurs and customers. What is important is what impact competitiveness has on the overall economic performance. Current issue of competitiveness and competition may be an ethical unsoundness of merit companies. Main drawback is that a company is lowering its price in order to gain customers and become more competitive. If it reduces prices to lower level than its marginal cost, it gets into insolvency. This phenomenon reduces a competitiveness of the whole sector (Whish, 1998).

Hoecklin (1996) describe competitiveness as a competitive advantage obtained by the ability to motivate, learn and innovate, plan and avoid frustration at work. It is also inevitable to keep learning customs of other cultures and maintain tolerance towards them. This definition relates to the competitiveness in international environment but also can be applied in a microeconomic environment.

According to Turner (1997), it should be distinguished between a narrow and a broader definition of competitiveness. The narrow definition of competitiveness is expressed by the classic interdependence between prices and costs within the enterprise. More popular is the broader concept of competitiveness which takes into account wide assessment of economic performance by financial and economic indicators.

Based on the value chain Porter (1985) elaborated the method for identifying a source of competitive advantage. Porter focuses his analysis mainly on techno-economic dimension of strategy, competitive forces and formulation of strategy. However, he neglected creative aspects, socio-political aspects and issues with strategy implementation.

In connection with positioning of quality and traditional food products on the European and global market, important issues are considered, those which are associated with the image of the manufacturer, product and region and country of origin, respectively. Given issues may play an important role in promoting food products on foreign markets. Competitive advantage in this situation is represented not only by quality and tradition of a product which is a subject of commercialization but also the image of a manufacturer, product and region. This argument can also be applied to microeconomic spheres of the economy (Dyker, 2010).

Some development throughout the years can be seen in recent publications in the issue of competitiveness. Considerable number of recent authors emphasizes environmental side, human approach in leading and vital role of information technology.

Larson (2007) considers a company to be competitive, when in addition to innovations, it is oriented to customer needs and is committed to the environment and assess the industrial development also from an environmental point of view. On the other hand, according to Tvrdíková (2008) competitive business is such that is capable of by improving the quality of information systems and communication technologies to highlight the features of its information strategy.

Competitiveness is very often identified with an employee's motivation, human approach in management, price flexibility, market research, effective communication with customers and a strong brand of a company. These facts are also considered to be determinants of corporate competitiveness (Jackson, 2009).

It follows that innovation, whether it is an innovation in research & development, information technology or a motivation of human resources, is generally seen as a foundation of maintaining a competitive market. Thus, competitive businesses create competitiveness of regions and consequently competitiveness of countries.

2.1.1 Determinants of competitiveness

Factors of competitiveness can be characterized as factors determining the level of competitiveness of enterprises in given market. They make it possible to determine actual competitive advantages and disadvantages of a company. Determinants of competitiveness can be divided into two major groups:

- Internal factors of competitiveness
- External factors of competitiveness

Internal factors of competitiveness are considered to be those factors, which can be influenced by the enterprise itself and which are located within the company. This includes factors of scientific and technological development, marketing and distribution factors as well as the factors of production and management, labour resources and financial and budgetary aspects of a business.

Among external factors of competitiveness belong those factors that the enterprise is not able to influence, or its ability to influence them is limited or indirect. These factors include: bargaining power of suppliers and customers, products market, competitive fight, interest in employment within the enterprise, corruption in the environment, support of state and local authorities.

According to Porter (2007) the most important determinants of competitiveness must be regarded macro-economic, political and legal factors. These are fundamental for competitiveness at the state, sector and even at the level of company. After them, it comes to microeconomic factors which create a core of national competitiveness. It is about factors such as the sophistication of company operations and strategies, the quality of microeconomic business environment, complexity of business clusters. These groups of factors are followed by factors of lower significance. These are natural resources and business location.

Lalinský (2008) followed up on Porter (2007), who adds that the variable expression of competitiveness can be GDP per capita in purchasing power parity. By using econometric methods it is then estimated the relationship between the evolution of GDP per capita in purchasing power parity and the amount of explanatory variables. The most important determinants are capabilities and capacities of enterprises, quality of a business environment, importance of innovation as well as the importance of investment in human capital.

Important factors that determine the competitiveness of enterprises must be considered: strategic business management, corporate culture, employee satisfaction with management, staff training and guidance, discipline of thought leaders and business owners' ambition (Grandstaff, 2009).

Determinants affecting the competitiveness can be divided into four groups and so factors that influence (Ižáková, 2002):

- stability of the environment (technological changes, inflation and fluctuations in demand, price range of competing products, barriers to entry into the industry, rivalry among existing competitors, price elasticity of demand, pressure from distributors)

- power of production sectors (growth potential, profit potential, financial stability, technical know-how, use of resources, capital intensity, complexity of entry into manufacturing sector, productivity, capacity utilization, bargaining power of producers)
- competitive advantage (market share, product quality, product life cycle, innovation cycle, customer loyalty, technological know-how, vertical integration, speed of new product introductions)
- financial power of company (return on investment, liquidity, debt ratio, required versus disposable capital, cash flow, the complexity of the output from the production department, the hazard ratio, inventory turnover, utilization experience of economies of scale).

Dyker (2010) considers as determinants of competitiveness of companies high quality production, built infrastructure in the area of enterprise, innovation and active development of human resources. The most important determinant is an average cost of output produced by the company.

2.2 Company Performance

The word „performance“ is derived from the word „parfourmen“ which means „to do“, „to carry out“ or „to render“. It refers to the act of performing; execution, accomplishment or fulfilment. In other words, it refers to the degree to which an achievement is being or has been accomplished. According to Frich Kohlar a performance is a general term applied to a part or to all the conducts of activities of an organization over a period of time often with reference to past or projected cost efficiency, management responsibility or accountability. Thus, not just the presentation, but the quality of results achieved refers to the performance. Performance is used to indicate firm’s success, conditions, and compliance.

Then, financial performance refers to the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectives being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (FPA Conceptual Framework, 2003).

Investopedia, economic dictionary, defines financial performance of a company as *“a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.” (Investopedia, 2016)*

Generally, business performance can be defined as an ability of entrepreneur to increase value of investments that have been inserted into entrepreneurial activities.

Main problem of business performance is how to measure it, how to objectify. It is true that the performance can be viewed from different perspectives, and thus this concept will have a different meaning for the owner of the company, another for employee, another for competitor and another for a different manager of the company. Various interest groups have different notions of company performance (Kislingerová, 2010).

Fibírová and Šoljaková (2005) claim that owner of a business will in particular assess the return on investment and economic value added. In other words, the aim is therefore that additional investment brings more than it costs. This is a logical step because he is the one that carries the greatest risk by putting own capital, ideas and time into the company.

However, owners are not the only ones interested in evaluating performance of the company. Running business is not affected only by owners and top managers from inside, but company's operations are directly or indirectly affected by various interest groups standing outside the company - stakeholders. The Figure 1 provides a sampling of different stakeholder groups and a list bellow shortly describes what they expect from an organisation (LSM,2016):

- Shareholders want competitive performance, good governance and transparency from managers, and a good present and future value for their investment
- Managers want the authority, empowerment, recognition and visibility that comes with the job
- Employees want job security, steady income, recognition and career advancement
- Suppliers want regular orders and timely payments
- Customers want easy access to good quality products and services at competitive prices
- Associates want ongoing cooperation and the benefits that come with it
- Lenders want interest on loans and capital repayment
- The local community wants good neighbouring
- The wider society wants organisations to be good corporate citizens
- The government wants taxes, opportunities for employment in the society and availability of products and services in markets
- Even competitors are stakeholders because the more they get to know their competitors, the better they compete with each other and the greater the stability in the industry
- The planet is equally a stakeholder because unethical human activity disturbs ecosystems and displaces other species

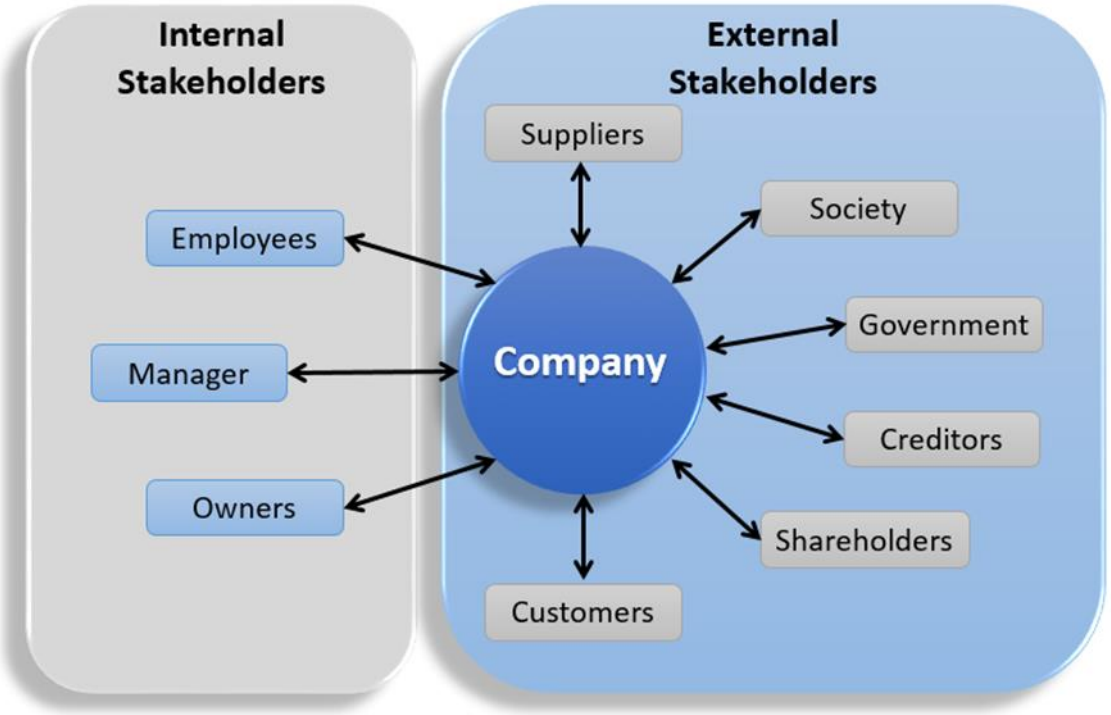

Fig. 1 Types of stakeholders
Source: Reworked according to CSR (2016)

For any business that wants to be successful and compete among competitors, it is necessary to measure their performance. Effective performance measuring is a key to ensure successful introduction of the company's strategy. It is monitoring effectiveness of individual decisions and measures to meet their own targets or predetermined requirement of stakeholders. The Company must perform well in terms of cost, quality, flexibility, value and other dimensions. Performance measurement system which allows firms to successfully accomplish these requirements is essential.

During last decades it has been developed large number of criteria reflecting the company's performance. If we look at performance measurement from a historical perspective, we find out that opinions on this measurement and understanding of the performance, varies. From measuring profit margins and earnings growth, through profitability of invested capital, we come to modern concepts, which are based on creation of shareholder value and value analysis (Pavelkova, Knápková, 2005).

According to Neely (1999) between the years 1994-1996 was published more than 3600 articles about issues relating to management and measurement of business performance. From the fact mentioned above we can conclude that 90's were ground-breaking in this field.

Historical development of perspectives on measuring business performance gave rise to two basic groups of approaches. The first group is called classical or

traditional indicators of financial performance. The second group consists of current indicators which are based on value management.

Marinič (2007) defines also the third group of indicators. Those are non-financial indicators and are kind of a complement to financial determinants. Non-financial indicators are mainly used for intangible assets.

Also Kocmanová and Hřebíček (2013) indicate that use of classical and modern methods of assessing corporate performance is inadequate information value. Focusing only on financial and economic performance does not lead to long-term and sustainable success of a company.

2.2.1 Traditional financial performance methods

The basic data that financial analysis works with are items derived from financial statements and other resources or derived values from these sources. The more figures we have while carrying out financial analysis, the more relevant results we get. Therefore it is appropriate to analyse numerical indicators from more than one period of operating activity of the company.

However, processing of elementary methods of financial analysis is not the aim of this thesis. Selected traditional measures are chosen only as an alternative way of financial performance evaluation of a company. Some indicators are also included in subsequent calculations while using modern methods so it is appropriate to define their substance.

Financial measures can be divided into many categories and can be viewed from different angles. Demonstration of such division is shown in the Figure 2.

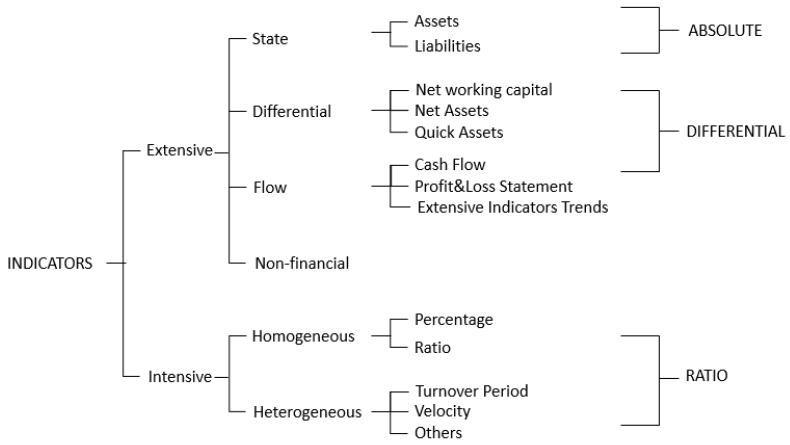

Fig. 2 Overview of financial analysis indicators
Source: Reworked according to Pevelková a Knápkova (2005)

The most widely used criterion for dividing is a mathematical approach. Under this criterion, the most frequently used types are absolute indicators. These indicators are based directly on values contained in financial statements and are not mathematically processed before being interpreted. Their information value is therefore very limited. Difference indicators offer wider use – they portray a

difference between two or among more selected items and thus give analysts a possibility to compare. A typical difference indicator is working capital, which is defined as a difference between current assets and current liabilities. The most frequently used group of indicators are called ratio indicators when particular values are ratios of one to another. Ratio measures are frequent, for example in calculation of profitability. Profit is meant to be numerator, while denominator is given by the item in balance sheet, of which profitability we want to express (Knápková, Pavelková, 2013).

Absolute indicators analysis

Processing of data contained in financial statements without further mathematical adjustments is usually limited to two basic methods - development trend analysis or horizontal analysis and the percentage component analysis also known as vertical analysis.

Horizontal analysis works with data line by line - creates time series of indicator values whose main purpose is to describe development and trends of particular indicators. In this way, it monitors positive or negative changes in individual indicators. Development is captured both in absolute and percentage figures, meaning how much a given value changed compared to previous period under review.

Vertical analysis examines a distribution of individual components of assets and liabilities. It is therefore an analysis by columns, which reflects a structure of a statement. Structure of statements or their parts (e.g. the structure of the firm's liabilities relative to total assets) is monitored over time, which gives the analyst some information on how a components distribution ratio affects a management of a company. Because results of vertical analysis are expressed as relative numbers, those can be used for comparison with competing companies in an industry.

Differential indicators analysis

Differential indicators, also known as funds of financial resources or financial funds, are one of the tools of financial situation of a company, particularly its liquidity. It is extensive indicators which are usually constructed from values in a balance sheet and is understood as a difference between the sum of specific items of current assets on one hand and the sum of certain items of short-term liabilities (short-term financial resources) on the other hand. Such a difference is usually referred to as a net fund (Kovanicová, 1997).

The most widely used differential indicator is net working capital, which is obtained by following formula:

$$(1) \quad \textit{Net Working Capital} = \textit{Total Current Assets} - \textit{Total Short–term Funds}$$

This difference has a significant impact on company's solvency. If current assets prevail over short-term funds, a company creates its own financial cushion,

which makes it easier to avoid an unfavourable situation in case of sudden unexpected expenses (Zalai, 2010).

Another frequently used assessment of situation based on differential indicators is monitoring of strategy for financing assets. When there are short-term resources used to finance long-term assets, we are talking about an aggressive method of financing. On the contrary, conservative method uses long-term funds to finance long-term assets but also part of current assets (Zalai, 2010).

Ratio indicators anaylsis

Ratio or intensive indicators characterise the relationship between two extensive indicators by expressing their mutual proportion. Ratio measures are based mostly on financial statements, especially from balance sheet and profit and loss statement. Balance sheet as a state statement shows the state of assets and liabilities by a given date, usually the end of accounting period. To increase an information value of financial ratios, it is used average value of state indicators. Those are obtained for example by averaging values of indicators from the first and last day of accounting period (Knápková, Pavelková, 2009).

Ratio measures allow getting a quick image about basic financial characteristics of the company. However, they represent only an auxiliary function in financial analysis, where they only indicate problematic characteristics of the company. It can therefore be seen as a kind of sieve that catches the areas requiring deeper analysis (Sedlacek, 2001).

According to areas of financial analysis, ratio indicators can usually be divided into indicators of profitability, liquidity, indebtedness and activity.

Profitability indicators

Profitability ratios are the most commonly used ratio indicators – putting into proportion obtained profit with resources that were expended to achieve it. Such an indicator refers to as return on investment (ROI). We calculate it as (Zalai, 2010):

$$(2) \qquad \boldsymbol{ROI = EBIT/Total\ Invested\ Capital}$$

It expresses effectiveness of total invested capital into the company, regardless of funding source. Invested capital can be modified in various ways, so we meet with indicators like return of assets (ROA) and return on equity (ROE).

Return on assets (ROA) puts into proportion attained profit with total assets invested in a business regardless of what resources were used to finance them. For calculation therefore we use a similar formula, as in the case of return on investment ROI (Zalai, 2010):

$$(3) \qquad \boldsymbol{ROA = EBIT/Total\ Assets}$$

Return on equity (ROE) is an indicator used by owners to assess whether their investments pay off corresponding to the level of undertaken risk. Unlike in ROA, in this case net income is used as a numerator (Zalai, 2010).

$$(4) \quad ROE = EAT/Equity$$

The return on long-term capital employees ROCE is a measure for inter-company comparison. It puts into proportion after tax profit with long-term funds of the company. This indicator is suitable for use in industrial corporations with higher proportion of fixed capital (Zalai, 2010).

$$(5) \quad ROCE = Net\ Operating\ Profit/Employed\ Capital$$

The Return on Sales ratio, sometimes called as Net Profit Margin, links profit for accounting period and total sales. It shows how many crowns of profit fall to one crown of sales, that is how much is the overall margin of the company. The numerator can contain either after-tax profit value or EBIT value - profit before tax and interest. Noticable advantage of EBIT is a possibility of transparent inter-company comparisons with other companies in selected sector. EBIT is neither affected by capital structure nor by various levels of taxation, which can be found when comparing companies from different countries (Zalai, 2010).

$$(6) \quad ROS = EBIT/Net\ Sales$$

Liquidity ratios

Liquidity can be understood as the ability to repay the liabilities. Liquidity ratios measure the amount of current assets ie. liquid assets and total liabilities, which are necessary to pay back in short-run. Standard methodology identifies three types of liquidity - current, quick and cash.

Cash liquidity can be defined by the Formula (7). Financial assets are represented by cash, bank accounts and marketable securities (Růčková, 2011). The value of cash liquidity should ideally range from 0.2 to 0.4 (Knápková, Pavelková, 2013).

$$(7) \quad Cash\ Liquidity = Financial\ Assets/Total\ Current\ Liabilities$$

Indicator of current liquidity or current ratio determines how many times current assets cover short-term liabilities of the company (Růčková, 2011).

$$(8) \quad Current\ Ratio = Current\ Assets/Current\ Liabilities$$

Indicator of quick liquidity or quick ratio is calculated similarly as an indicator of current ratio except that from current assets is subtracted the value of inventories, because inventories are the least liquid item of current assets (Růčková, 2011).

$$(9) \quad Quick\ Ratio = (Current\ Assets - Inventories)/Current\ Liabilities$$

Another two liquidity ratios differ by the type of liquid assets expressed in the numerator. Both, current and quick ratio is being compared with given optimal values (Růčková, 2011).

Leverage ratios

Debt ratios measure a financing structure of sources of the company, ie. the ratio between the total, own and external sources. Equity is generally more expensive than debt capital and its price is represented by dividends paid. However, there is a principle saying that equity should preferably be higher than debt capital. A price of debt resources is expressed by their interest payments which allow you to take advantage of a tax shield and reduce a tax base. However, high proportion of debt resources may threaten financial stability, so every company should strive to achieve the most optimal structure of financial resources.

Total Debt ratio or Creditors' Risk indicator expresses share of debt resources to total assets. Higher the value of debt ratio, higher the creditor's risk and lower the solvency of a company. However, indebtedness is not only a negative phenomenon. It is advisable to find an optimal value of debt, as high value of equity and low level of debt resources raise the cost of capital, since equity is more expensive than external sources. Ideal value of debt is between 30-60% but it also depends on a particular industry in which the company operates (Robinson, 2008).

$$Total\ Debt\ Ratio = Total\ Debt / Total\ Assets \quad (10)$$

$$Financial\ Leverage = Total\ Assets / Equity \quad (11)$$

Another way of expressing company's indebtedness is a financial leverage. It is a reciprocal value of the indicator degree of self-financing. It is of great importance when assessing profitability of a company through a pyramidal system of indicators.

Activity indicators

Activity indicators examines whether company manages its assets effectively. Ineffective management of assets leads to increase in costs or reduced revenues, thereby affecting an overall profitability. Activity indicators are divided into two groups (Zalai, 2010):

- Turnover period indicators indicating how many days you need to sell to pay for given type of asset
- Turnover rate indicators indicating a number of turnarounds of given assets until the moment of its sale.

A disadvantage of activity indicators as well as some other variables for evaluating a company performance is the fact that while values obtained from profit & loss statement are flow indicators, assets are state variables at given moment of balance sheet day. To enhance information value of indicators is therefore appropriate to use average values of assets for period under consideration - as a rule, an accounting period (Robinson, 2008).

Asset turnover measures the total asset utilization. The result is a value that indicates how many times the total assets turns over per year. The indicator should reach the highest possible value, should be equal to 1 (Zalai, 2010).

$$(12) \quad \boldsymbol{Total\ Assets\ Turnover = Sales/Total\ Assets}$$

$$(13) \quad \boldsymbol{Assets\ Turnover\ Period = Total\ Assets/\frac{Sales}{360}}$$

Accordint to Robinson (2008) inventory turnover indicates how many times is each item of inventory sold and stored away again during a reporting period. This information is important in terms of capital liability. An ideal situation is when the company does not have unnecessary illiquid stocks. Otherwise they lock up financial resources that would be used differently and would bring some other revenues to the company.

$$(14) \quad \boldsymbol{Inventory\ Turnover = Sales/Inventories}$$

$$(15) \quad \boldsymbol{Inventory\ Turnover\ Period = Inventory/\frac{Sales}{360}}$$

Collection period says how long does it take to collect receivables, on average. It is recommended to meet the same date as the invoice due date is. Common collection period may differ depending on a type of the business, production or industry. If a collection period is too high, it would result in situations where companies are forced to finance corporate activities and repayments of their own liabilities by useing debt resources.
(Sedlacek, 2007).

$$(16) \quad \boldsymbol{Average\ Collection\ Period = Receivables/\frac{Sales}{360}}$$

Creditors Payment Period shows corporate payment habbits which means how long does it take to pay supplier invoices. Then it is the period for which the company holds cash and uses this money to meet their needs. (Sedlacek, 2007).

$$(17) \quad \boldsymbol{Creditors\ Payment\ Period = Short\text{-}term\ Liabilities/\frac{Sales}{360}}$$

In general, this indicator should reach at least the amount of time of collection period to allow a company financing its liabilities by income from receivables and did not have to use other debt resources (Sedlacek, 2007). There are many other activity ratios such as Fixed Asset or Accounts Receivable Turnover but these can be considered as reformulations of previous one (Robinson, 2008).

Criticism of traditional indicators of a company performance

Criticism of traditional indicators lies in their focus on accounting data and especially on financial results of operations, when risk, impact of inflation, time value of money and other factors are not considered. Business results can be

influenced by a diversity of accounting policies of the company (valuation techniques of assets, creation of provisions and adjustments, depreciation method).

Another problem is a correct definition of the company's capital and its structure. For example tangible assets that are not owned by the company and simultaneously are used for business (e.g. property financed through leasing or property in private ownership), intangible assets that are not included because of difficulties in qualifying benefit (built supplier-customer relationships, skilled labour power, etc.) (Pavelková and Knápková, 2013).

2.2.2 Current business performance indicators

Approaches to evaluating a performance of the company are subject to continual development reacting to criticism of existing methods and efforts to improve them. Innovation of performance measurement approaches that have occurred during the 70's and 80's of the 20th century, originated largely in the name of criticism of performance measures based on profit. Development of standard methods of financial analysis was in remission and methods that would help in the management of companies by displaying their actual performance came to the fore (Wagner, 2009).

One approach, which attracts expert's attention at that time, was the indicator of discounted cash flows. Part of the innovative tendencies, however, was an effort to eliminate the accrual principle of business results detection. Moreover, DCF was not suitable for common use in business management.

Critics of accrual principle try to promote a definition of profit as a difference between revenues and expenditures. Their conviction is grounded in two fundamental arguments (Wagner, 2009):

- primary aim of every entrepreneur is to make money, not just to achieve accounting profit,
- income is the only indisputable proof that a company benefits from operating business activities

Both bullets above represent an ideological viewpoint of how a business should operate. However, they cannot be used as an argument to question significance of a business result when evaluating a business performance. Even profit provides important information in accounting concept. Moreover, a definition saying that a function of profit does not express overall consequences of entrepreneurial activity, but an attempt to capture the impact of business activities on a process of their creation, should also be taken into consideration.

Besides this particular criticism, it is also being observed another trend in assessing a company's performance - an attempt to express the long-term effects arising from current business development. No matter the economic result is based on accrual or monetary principle, it provides only information on contemporary implications or consequences related to the near future and therefore it is suitable only for operational management activities. This indicator is not capable of providing information on longterm development (Synek, 2011).

For this reason, it has begun to develop a variety of synthetic performance indicators, which tries to reflect a wide range of activities influencing a business into single indicator and, if possible, throughout its existence, or at least for a long-term period. Such standards include indicator Market Value Added (MVA) or indicator Cash Flow Return on Investments (CFROI) (Pavelková and Knápková, 2009).

In this respect, the most famous idea of application is a concept of economic profit, which takes into account opportunity costs of capital. In practice, this concept occurs mainly in the context of Economic Value Added (EVA). This indicator is examined in more detail in the next chapter because it will be used in practical part of this thesis as the main current method of assessing the economic performance of selected company.

As it is evident from the previous text, current methods of evaluating business performance abandon from analysis of profitability and are more focused on creating shareholder's value. In this sense, value criteria for measuring the performance of companies began to be used. Therefore the management system based on these methods has started to be known as the value based management.

For all these value criteria, there are two characteristics in which they fundamentally differ from basic indicators of company performance evaluation:

- they work with the concept of opportunity costs, which has a form of average cost of capital,
- instead of profit they use operating profit (NOPAT)

Market Value Added

Market Value Added, usually abbreviated as MVA is a term that refers to rather significant value measurement of business performance. MVA measures the difference between the market value of the company and the value of capital invested into the company. It expresses owners' (shareholders) wealth. MVA is generally used for measuring a performance of the company with orientation on maximizing shareholder's value. MVA shows the owners how competent management of the company is. If MVA has a positive value, then the management is considered to be competent and creates value for shareholders. Conversely, if the indicator is negative, it reduces the value of capital invested into the business. Invested capital must earn more than it costs (Knápková and Pavelková 2009).

$$MVA = (P_s - P_p) \times n \qquad (18)$$

where:
P_s selling price of shares
P_p purchase price of the shares
n number of shares

Value of MVA can be calculated as year-on-year comparison. However, MVA can reach also negative values – market value lost (MVL). If that happens, it's an unfavourable reference for the company's executives (Synek, 2011).

Discounted Cash Flow

Free cash is a term providing us with information how much the firm has funds available in given period. Discounted cash flow (DCF) respects the factor of risk and the factor of time, as well. That makes it an adequate measure of business performance and it becomes an investor's interest when evaluating a profitability of their investments using the net present value and internal rate of return (Wagner, 2009).

$$DCF = CF/(1+i)^2 \quad (19)$$

where:
CF annual cash flow
i discount rate
n given year

Cash Flow Return on Investment

Cash Flow Return on Investment (CFROI) is a term that refers to operational performance of the company that the company would reach over the useful life of operating assets if it generated operating cash flow in the same volume, which was amounting over the monitored period. It compares future cash flows adjusted for inflation. Company's performance is then compared with the weighted average cost of capital (WACC) - a required performance by investors. CFROI belongs among complex measures of business performance. Its calculation is based on the concept of internal rate of return (IRR) (Zalai, 2010).

$$I = BCF_t/(1+CFROI)^t + NA/(1+CFROI)^n \quad (20)$$

where:
I gross investment value
BCF gross cash flow in particular year adjusted for inflation
NA residual value of undepreciated assets
t particular year of future period
n time of economic life

CFROI indicator is most accurate in terms of structure and consistency in eliminating accounting shortcomings. An undisputable advantage of CFROI is considered to be the possibility to compare businesses' performances over time with different structure of assets. Disadvantages include a large number of adjustments needed and time required to calculate the indicators. Probably for these reasons it is not being used in corporate praxis as much as it would deserve to be (Zalai, 2010).

Among current methods for measuring a performance of the company belong besides above-mentioned also the Total Shareholder Return, Excess Return, Balanced Scorecard, and last but not least Economic Value Added (EVA). EVA ranks among the best known and most widely used methods for calculating company's performance in corporate praxis. Economic value added is examined in detail in next chapter.

Economic Value Added

One of the most recent concepts of performance evaluation of the company used in corporate practice, is the concept of economic value added (EVA). The emergence of this indicator dates back to 1982 and authorship is ascribed to the firm Stern Stewart & Co., which dealt with consultancy in management (Arnold, 2012). Although the method was initially used mainly by US companies, gradually it began to expand. Literature have also positive attitude to the use of EVA in Czech and Slovak corporate praxis. According to Kislingerová (2001): *"the method working with EVA concept seems to be highly promising in the Czech Republic. Its use is particularly interesting because it illustrates well the main factors of value creation."*

The basic concept of EVA operates, like all the standard indicators of business performance, with the thesis that the aim of a company is to maximize profit. In this concept, however, accounting profit (calculated from profit and loss statementand based on a difference between revenues and costs) is not taken into consideration, but economic profit instead (Arnold, 2012).

Calculation of EVA indicator

There are 2 basic variations of how to calculate EVA:

- Determining EVA by INFA methodology
- EVA calculation based on accounting adjustments

$$EVA\ Entity = NOPAT - WACC \times C \tag{21}$$

Regarding the Formula (21) NOPAT is the profit from operating activities. It is the profit produced from the main entrepreneurial activity. Before calculating of NOPAT it is necessary to adjust few items of profit that have a character of extraordinary income (loss) or do not relate to the main operating activities of the company. Secondary activities do generally correspond to a different risk and man should consider different discount rate (Arnold, 2012).

Weighted average cost of capital (WACC) is a cost of total long-term invested capital. A value of the average costs depend firstly on method of using own resources and secondly on a type of source. Companies that are able to use both, own and external resources, more efficiently, achieve lower average costs of capital. A value of WACC varies even with respect to capital structure (Zalai, 2010).

$$(22) \qquad \boldsymbol{WACC = r_d \times (1 - t) \times \frac{D}{C} + r_e \times \frac{E}{C}}$$

where:
r_d The required return of the firm's Debt financing
T tax rate on corporate income
D Debt
C total value of invested capital
r_e Cost of equity or expected return on equity
E equity

Indicator C (Capital) indicates the total amount of capital tied up in assets and used in operating activities of the company, thus creation of operating profit. To meet this requirement, it is necessary to adjust some assets items in accounting that do not relate to main operating activities of the enterprise. These costs are capitalized and amortized gradually, which is partly reflected as an increase of equity. Values by which equity increases are also called Equity Equivalents. The value of such assets is reduced by explicitly interest-bearing debt, to avoid problems with cost estimates for these items of capital. This term used in concept of EVA referres to Net Operating Assets (NOA). The formula therefore is adjusted to:

$$(23) \qquad \boldsymbol{EVA = NOPAT - WACC \times NOA}$$

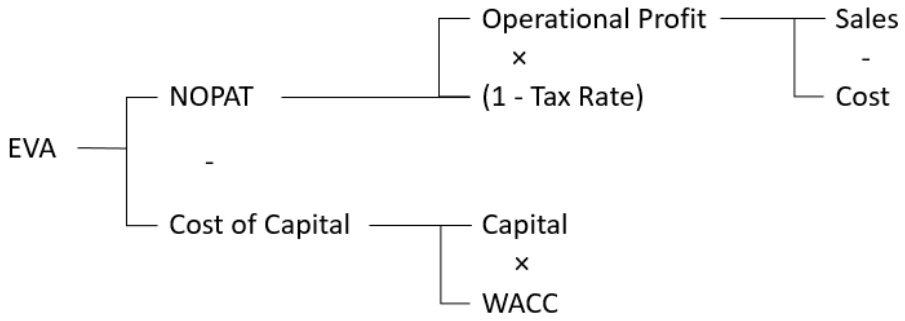

Fig. 3 Factors influencing EVA indicator
Source: Reworked according to Kislingerová (2001)

Conversion of accounting model

Financial statements of companies provide us with financial data. However, when calculating economic value added, these are necessary to be modified to be able to create an economic model instead of accounting one. One of the reasons for this modification is the fact that current accounting system is oriented mainly for the purpose of creditos. Due to compliance with accounting principles, real state of assets and liabilities are not therefore presented to investors - all items in accounting are stated according to their acquisition or production cost.

Another reason for transformation of economic data is a requirement for data consistency needed for performance measurement - the consistency between economic profit, operating assets and capital expenses. According to the authors Mařík and Maříková (2005) should be:

- operating assets determined in accordance with how we understand core business. Especially in terms of whether and to what extent include long-term and short-term financial assets into operating assets,
- correctly defined revenues and expenses pertaining to operating assets,
- revised funding structure and determined cost of individual financial resources.

From the aforementioned it is clear that prior to the calculation of EVA data from financial statements have to be transformed. The authors of the concept of EVA use 164 specific adjustments of financial statements which are necessary to perform to modify accounting model to economic model. Most of these changes are considered to be a business secret, and therefore we will focus only on adjustments that are essential. Transforming data should include four steps (Mařík and Maříková, 2005):

- Conversion into operating assets (NOA conversion)

In this step, the analyst should modify an accounting form of assets into operating assets. This is done by earmarking for non-operational assets, ie assets that are not used for core business activities (for example investments in non-core activities, investments in progress) and by activating assets for which the lessee bears tha majority of benefits and risks associated with the lease (for example, financial leasing). By making these adjustments we get the value of net operating assets or indicator NOA.

- Conversion of funding

The purpose of this conversion is to supplement reported sources in accounting, to provide a realistic and complete picture of corporate financing. The main problem is financing through leasing and other forms of rental. Among other adjustments coming under this conversion is increasing operational economic result (NOPAT) by interest portion of the lease payments, funds adjustment by short-term interest-bearing liabilities and adjustment of the reported reserves.

- Tax conversion

Tax Conversion consists of adjusting taxes arising from the difference between profit from operating activities of the enterprise (NOPAT) and accounting economic results. The calculation must take into account a tax rate in given year.

- Shareholder's conversion

Shareholder's conversion is focused on adjustments on the liability side. Changes that are made on the assets side must be reflected on the liability side, as well. This change is then reported in adjusted balance sheet as so called equivalents of equity.

The calculation of basic items of EVA entity

The calculation of operating assets (NOA)

The basic financial statement for NOA calculation is a balance sheet. In order to calculate this indicator it is necessary to exclude non-operational assets from assets, activate items which are not accounted in assets and reduce assets by interest-bearing debt capital (Mařík and Maříková, 2005).
Mařík and Maříková (2005) identify basic steps of calculation as follows:

- **Exclusion of non-operational assets**
    - Current financial assets

      Financial assets of the company include items as cash in hand, current account and short-term financial capital. Theese assets should be held only on a level of operational necessity. If this property has a character of strategic reserves, it should be subtracted from total assets.
    - Financial Investments

      In determining whether these assets should be excluded from operating assets or not, the aim and character of the property is important. If these investments are related to the core business activities of the company, it is convenient to keep them in NOA. If financial investments have a portfolio nature (only saving money), then they should be excluded from NOA indicator.
    - Issued Shares

      Issued shares are excluded from equity in accordance with accounting principles in Slovak Republic and therefore are not part of NOA.
    - Unfinished Investments

      These assets are generally considered to be operationally needed, but is not available for creating a current financial result, and therefore it is recommended to exclude unfinished investments from NOA.
    - Other assets not needed for operational activities

      These assets include assets that are not used for operational activities of the company, for example, unused or rented land and buildings on which it can be assumed that they will be gradually sold up. Therefore, it is appropriate to exclude accounting value of these assets from the NOA calculation.
- **Operational assets not shown in accounting**
    - Financial leasing

      Financial leasing makes up substantial part of investments in some companies. Therefore it is appropriate to use these assets in NOA calculation, and if it is possible at their market value.
    - Operational leasing and rental

      Unlike financial leasing, operational leasing does not allow to activate property. However, it is necessary to consider whether the criteria by

which we distinguish between financial and operational leasing, are still appropriate to make a dicision about activating a property.

- Re-evaluation of assets

Another modification is re-evaluation of assets to their real value. A value of tangible and intangible fixed assets should be recorded at replacement value reduced by appropriate depreciation. The securities should be reported at market value if the value is known.

- Capitalization of expenses with long-term anticipated effects

In particular, those are total costs related primarily to research and development, new market penetration, workforce training, and partly advertising and other costs.

- Goodwill

Goodwill arises as the difference when price paid for a company is higher than the difference between real valuation of assets and liabilities. It is recommended to enumerate goodwill in gross value (without adjusting items) because a value of a prosperous business should not be declining.

- Undisclosed reserves

Undisclosed reserves can be created intentionally, especially through depreciation and adjusting items on the asset side or using reserves on the liability side. If the company deliberately reduces the value of assets or creates relatively redundant reserves, they should be included as equity equivalents to equity.

- **Non-interest bearing liabilities**

  In this step, it is an exclusion of all financial costs from operating profit, which do not bear interest. These include mainly supplier credits, short-term liabilities, passive accruals items, reserves having a character of real commitments and explicitly non-chargeable obligations.

Operational profit determination - NOPAT

The main principle that must be used for calculation of NOPAT, is to achieve symmetry between operational assets and operational economic result. If these assets are included in NOA, it is necessary that costs and revenues associated with these assets will be included in calculation of NOPAT. The next step is to decide which business result can be used as the basis for calculation - whether business profit from ordinary activities or operating profit.

- **Interest expenses**

It is necessary to exclude interest expenses from financial cost, including implicit interest on lease payments. This means that these interests should be added back to economic result.

- **Extraordinary items**

From profit it is also necessary to exclude extraordinary items. Primarily, changes in assets valuation, shortages and damages and claims for their reim-

bursement, formation and settlement of reserves at the expense of extraordinary costs and other extraordinary costs. Furthermore, it is appropriate to exclude costs which will not be repeated (restructuring costs, sale of fixed assets, extraordinary depreciation of assets).

- **Impact of changes in equity**

Furthermore, NOPAT is necessary to be adjusted for the impact of a cost capitalization of capital goods (costs of research and development), depreciation, adjusting items for inventories and receivables compared to accounting levels and a formation and drawing of undisclosed reserves, if they had an impact on a business result.

- **Short-term and long-term financial assets**

It is suitable to assess to what extent operational assets are essential or not and therefore have to be in kept in or eliminated from NOPAT.

- **Tax adjustments**

One of important items is also tax adjustments when it is inevitable to determine adjusted tax. Most often, this tax is determined by multyplying NOPAT by given tax rate. The more accurate method is a calculation of a real effective tax rate. This might be done when dividing payable tax by accounting profit and subsequently multiplying NOPAT by this effective tax rate.

Determining the cost of capital

Determining the cost of capital rate is the third major step for calculating EVA. In determining the cost of capital it is necessary to distinguish three types, namely EVA entity, EVA equity and EVA APV.

The basic one and even the most widely used is EVA entity when NOPAT includes both - profit usable for shareholders and interests on debt capital (creditors' income). As well as results are defined, requirements must be also determined. The amount and structure of requirements determine the weighted average cost of capital (WACC). The second alternative is EVA equity, where a discount rate is only represented bythe cost of equity. In this case NOPAT will be reduced by the amount of interest paid. The least frequently used variant is EVA-APV, where a discount rate is expressed as the cost of equity, but in a debt-free company (Mařík and Maříková, 2005).

Weighted average cost of capital (WACC) is calculated according to the Formula (22) stated above. For a calculation of WACC it is necessary to determine the weights of individual components of capital. It should be emphasized principle when using weights calculated from market values. It is also inevitable to determine the cost of equity and debt capital.

Cost of debt

Determining the cost of debt capital is usually not difficult, because these costs are stipulated when finalizing agreement. Subsequently, interest expenses were reduced by the amount of tax shield, which represents tax savings. More accu-

rate method of determining cost of debt is using data from capital market on a profitability of bonds with the same creditworthiness as an evaluated company.

Cost of equity

Quantifying the cost of equity capital is more complicated, because these costs have no fixed rate, as they have in case of debt capital. Some companies even act as if it was a gratuitous capital. That is not true, because lenders and investors expect some yield that creates just these capital costs.

To calculate the cost of equity can be used model CAPM:

$$r_e = r_f + \beta \times (r_m - r_f) \quad (24)$$

where:
r_e = cost of equity
r_f = risk free yield rate
β = coefficient expressing a degree of risk for the company to the average market risk
r_m = average return on capital markets
$(r_m - r_f)$ = premium for systematic market risk

INFA Methodology

INFA methodology is a benchmark diagnostic system of financial indicators used by companies to compare their performance with the best companies in the industry, or their performance can be compared to industry averages as well. Besides the possibility of company's comparison, INFA can be also used to identify strengths and weaknesses in terms of performance of the company. This tool is useful for enterprise management when creating a corporate strategy for future periods (INFA, 2005).

INFA project as a useful benchmark for companies from different fields originated from a combination of academic and government sectors. The methodology was created by Doc. Ing. Inka Neumaierová, PhD. and Ing. Ivan Neumaier. The Ministry of Trade and Industry of the Czech Republic provided data sources and programing capacities for project development (INFA, 2005).

On April 30, 2012, INFA system was upgraded. This innovation was based on the introduction of the industrial classification CZ-NACE. INFA method analyses four basic factors:

- Return on equity
- Cost of equity
- Equity
- Net present value of growth opportunities.

The analysis of these factors progresses systematically, when firstly evaluated are cumulative factors for the entire enterprise, and then the analysis proceeds to individual factors that influence those basic ones. In this way it is possible to evaluate factors reflecting a decision-making of company management and ope-

rations that are performed within the company through which the overall performance of the company is influenced. In this manner INFA comprehensively enable to look at the overall situation of a company, describe it and explain its regularities (Neumaierová, 2005).

Due to a complexity of perspective, which the method INFA is able to provide to its users, it can be considered as a highly original method in the field of corporate governance.

EVA equity

This EVA model is used by the Ministry of Industry and Trade of Czech Republic. Unlike EVA entity model, this model is based on unadjusted publicly available financial data so that cooperation of undertaking companies is not necessary when doing a calculation. Determining EVA using the methodology of benchmarking diagnostic system of financial indicators INFA uses EVA equity and is based on the formula:

$$EVA = (ROE - r_e) \times Equity \quad (25)$$

where:
ROE = return on equity
r_e = cost of equity

$$r_e = r_f + r_{ER} + r_{LS} + r_{FI} + r_{FST} \quad (26)$$

where:

- Risk-free rate (r_f)

This interest rate depends on the profitability of risk-free assets. Under the risk-free asset, in this case, are considered to be 10-year government bonds.

- Risk premium on company size (r_{LS})

From the formula it is clear that the company size risk premium is one of the key elements. The criterion for determining that rate is the size of market capitalization.

- Risk premium on enterpreneurial risk (r_{ER})

Risk premium is linked to the indicator of production strength (EBIT/assets), its sufficient size and the subject of the business.

- Risk premium on financial instability (r_{FI})

This risk premium characterizes a relationship between the useful life of assets and liabilities and is linked to liquidity L3, so that current ratio. Risk premium for financial stability is calculated as follows:

- Risk premium on financial structure (r_{FST})

This premium is the difference between re and WACC.

At the final evaluation of the indicator, companies are divided according to the degree of value creation to four categories:

- Category I – companies that create an economic value added, ie. Return on equity equity (ROE) is greater than opportunity cost of capital
- Category II - companies that do not create economic value added but their ROE is greater than yield of risk-free asset
- Category III - companies with a positive return on equity (ROE) but less than return on risk-free asset
- Category IV - unprofitable businesses whose return on equity (ROE) is less than 0 and enterprises with negative equity.

Analysis of factors affecting the indicator EVA according to INFA methodology

Among the factors influencing the final value of EVA belong return on equity (ROE), cost of equity (re) and the size of the equity.

Return on equity (ROE)

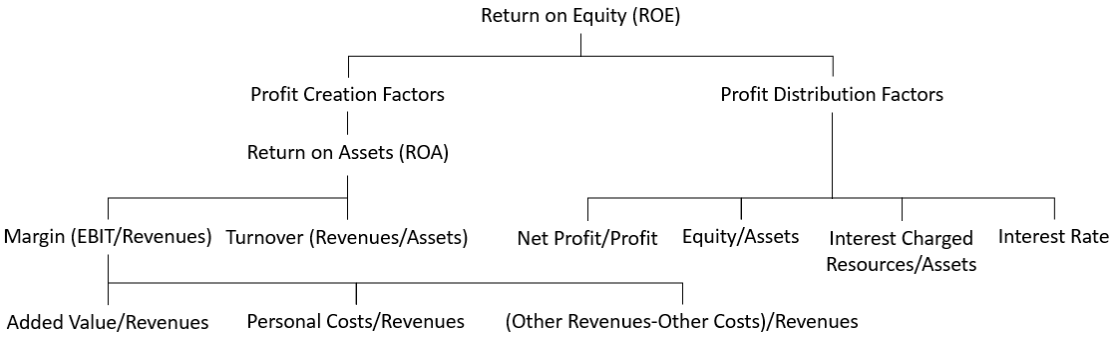

Fig. 4 Factors Influencing ROE Indicator
Source: Reworked according to Neumaierová (2005)

Factors influencing the value of return on ekvity of firms can be divided into two groups (Neumaierová, 2005):

- Factors creating profit of the company
- Factors distributing profit of the company.

Distribution of profit of enterprises is carried out according to the volume of interest-bearing resources every business disposes of and according to the structure of these resources. It also depends on what proportion of these resources consists of equity, what is the price of these resources and what is the current tax burden. The final production is affected also by production force of the company. This production force is represented by the power of ROA (EBIT / Assets). This indicator is affected by another two indicators measuring an operating abilities of the company:

- Margin = (EBIT / Revenues)
- Turnover Assets = (Revenues / Assets)

Company's turnover refers to the firm's ability to use its assets and efficiently manage the amount of capital tied-up in these assets. The value of the margin in this business is dependent on the price of the unit's output and cost of production of this unit. The methodology INFA expresses this impact in a form of three indicators:

- Added Value / Revenues
- Personal Costs / Revenues
- (Other Revenues - Other expenses) / Revenues

Due to using such a decomposition, the management is then able to determine the problem's origin. It can thus eg. Reveal that the cause of poor performance is largely high debt-to-revenues ratio arising from inadequately high personal costs (Neumaierová, 2005).

Cost of equity (r_e)

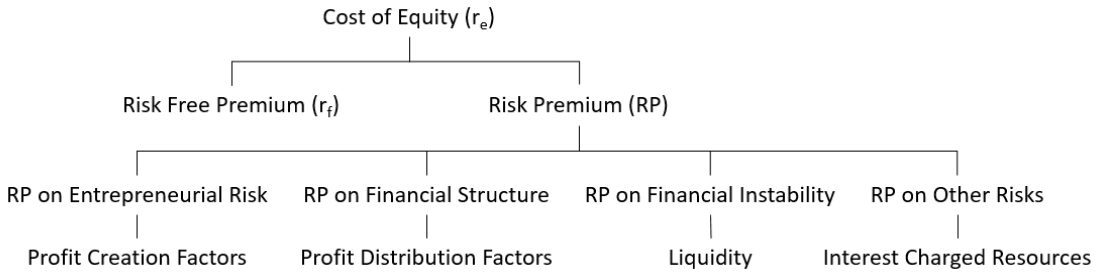

Fig. 5 Factors Influencing r_e Indicator
Source: Reworked according to Neumaierová (2005)

Cost of equity, which defined in the Formula (26), reflects return on risk-free asset ie. the yields on government bonds and treasury bills. On the other hand, there are factors directly related to the business in which is the capital invested to. These factors are called risk premiums. These risk premiums are based on the following aspects of the business (Neumaierová, 2005):

- Liquidity of Shares
- Enterpreneurial risk
- Financial structure risk
- Financial instability risk
- other risks.

Equity (VK)

The volume of equity that is tied-up in the company affects an extensive factor of enterprise performance. If the company achieves positive difference between ROE and r_e, increasing the size of the equity in the company enhances this good result (Neumaierová, 2005).

Advantages and disadvantages of EVA indicator

The main advantages compared with classical performance measurement indicators based on return on equity are following (Pavelková, Knápková, 2012):

- EVA is based on earnings in an economic sense (therefore it also includes alternative costs of invested capital)
- EVA includes only revenues and costs related to the core business
- EVA, when calculating the cost of capital, takes into account only the capital tied up in assets used for core business activities
- EVA is an absolute indicator, it does not require any benchmark for performance evaluation

However, this indicator has not only advantages, and therefore it is appropriate to draw attention also on its disadvantages.

- Eva is based on accounting information that require a large amount of adjustment before enumeration of input data
- All 164 necessary steps recommended by the company Stern Stewart & Co. is the subject of business secret
- Complicated quantification of cost of equity
- Inflation not taken into consideration

3 Methods

Diploma thesis is structured into two main parts, so it contains the theoretical and empirical part. The theoretical background elaborates information regarding competitiveness, sustainability, strategic and financial analyses which are accompanied by knowledge gained during the years of university studies and practical experience from working in this sector.

The second part of diploma thesis focuses on identification of key drivers influencing the competitiveness of non-alcoholic beverages producers, focusing on financial performance key drivers and possibilities for their improvement of companies specialising in production of mineral water. Diploma thesis aims to answer the research questions. The first one examines the impact of economic crisis on analysed companies and the second one examines the current financial performance of mineral water producers when compared to the recent global economic crisis. Therefore, emphasis is put on the period since breakout of an economic crisis. These are the years ranging from 2008 to 2014. For this part of the research it is necessary to elaborate the reports of Ministry of Industry and Trade dealing with an economic and financial benchmarking and diagnostic system of financial indicators INFA and to examine a financial analysis of the companies' sample.

The first part of the own research deals with elaboration of strategic analysis of both - internal and external environment, includes detailed PEST analysis and Porter's 5 Forces Model. These analyses are based on information from current online sources, legal binding acts and statistical data provided by Eurostat.

The second part of the empirical analysis performs own financial analysis of 5 Slovak producers of mineral water. Data were procured from university database Amadeus where were selected those companies operating in the territory of the Slovak Republic under the NACE division 11 and meeting the following criteria:

- Business activities in the production of soft drinks - mineral water in particular
- Head Office in the Slovak Republic
- Company's lifetime in the period between years 2008 – 2014

The empirical part includes a financial analysis to obtain an overview of development in examined companies. The scope and depth of financial analysis is tailored to the needs of this thesis. Financial analysis is therefore processed by assessing selected ratios whose values are calculated from partial aggregated input variables for each particular year and are assessed based on a comparison with the relevant theory and compared with companies producing soft-drinks in Czech Republic. In order to identify the cause of development of particular ratios, there are constructed tables describing development of the individual items of a given indicator.

These values are employed in the benchmarking diagnostic INFA system which provides an industry comparison with Czech companies operating under

NACE division 11 and gives a possibility of calculation of Economic Value Added. INFA method was chosen to compare the results achieved with industry averages and leading companies in the industry. This comparison is shown in figures monitoring the development of financial ratios of examined companies. Significant part of the formula contains from INFA Spread. INFA Spread is defined as the difference between Return on Equity and Opportunity cost of equity.

$$(27) \qquad \boldsymbol{Spread\ INFA = ROE - r_e}$$

The formula for calculataion the cost of equity according to the INFA model was explained in detail in the chapter Theoretical part and has the following form:

$$(28) \qquad \boldsymbol{r_e = r_f + r_{LA} + r_p + r_{FS} + r_{FST}}$$

The diploma thesis calculates Economic Value Added according to the INFA methodology provided by Ministry of Industry and Trade using the following formula:

$$(29) \qquad \boldsymbol{EVA = (ROE - r_e) \times Equity}$$

To determine values of ROE and r_e, the INFA methodology uses input data stated in the Table 1.

Tab. 1 Input Data for INFA Methodology

Profit & Loss Statement	Balance Sheet
Sales	Total Assets
Cost of Goods Sold	Inventories
Performance	Receivables
Intermediate Consumption	Current Financial Assets
Personal Cost	Equity
Wages	Long-term Bonds and Bills of Exchange
Interest Expenses	Current Liabilities
Earning before Tax	Long-term Bank Loans

Earning after Tax	Short-term Bank Loans and Financial Accommodation

Source: MPO

Given that fact that not all of required input data are available in the statements accessible in the Amadeus database, this missing information has to be derived or estimated. This concerns the following items:

- Performance - calculated as a difference between turnover and sales
- Intermediate consumption - calculated as a difference between material costs and costs of goods sold
- Wages - calculated as a difference between personal costs and payroll deduction that a company pays for their employees. Mathematically, this means a deduction of 35.2%.
- Long-term bonds and bills of exchange - set the zero value for all enterprises

After filling the required data, the methodology INFA set the values of ROE and r_e, through which EVA indicator is then determined. Specific values of these parameters along with values of their pyramidal decomposition, will be listed in corresponding tables. Pyramidal decomposition of ROE may be also expressed mathematically through the following formula:

$$ROE = \frac{CZ}{Z} \times \frac{\frac{EBIT}{A} - \left(UM \times \left(\frac{UZ}{A} - \frac{VK}{A}\right)\right)}{\frac{VK}{A}} \tag{30}$$

Interest rates (UM) are calculated by substituting values for all other variables in the Formula 30.

4 Empirical Part

4.1 Analysis of an external environment

No business or industry is completely isolated from its external surrounding. Certain business environment surrounds a company, largely influences it in different directions and also restricts a given company. Branch of soft drinks production is often analysed in parallel with the field of food production, thus together constituting the food industry and an important component of the manufacturing industry of the Slovak Republic. For examining of macro-environment in this thesis is used PEST analysis of mineral water production industry in Slovakia.

The process of strategic management requires a thorough monitoring of a situation in the reference market space. Business activities of soft drinks industry - namely mineral water production, are influenced by political and legal, economic, social and technological factors of an external environment. It is obvious that particular factors are mutually influenced and relates one to each other.

4.1.1 Political and legal environment

Natural mineral water according to the law no. 538/2005 Coll. on natural healing water, natural spas, spa towns and natural mineral water, is a microbiologically harmless groundwater which seeps to the Earth's surface in one or more natural or artificial springs. Simultaneously, it meets quality requirements pursuant to special legislation and has been recognized by this Act. It is intended for food use and for production of packaged natural mineral waters. From drinking water, natural mineral water is distinguished by both a characteristic original content of minerals, trace elements or other constituents and physiological effect and its original state (Úrad verejného zdravotníctva Slovenskej Republiky, 2010).

There is a number of laws, decrees and European regulations governing the area of food and beverage production. After the accession of the Slovak Republic to the European Union must Slovak food products meet a number of new requirements arising from European law. They are not applied only in case when products are exported to EU countries, but even provided that such sales happen exclusively in Slovakia.

According to the Act no. 128/2002 Coll. on State control, Slovak Trade Inspection (SOI) is the general market surveillance authority for protecting consumers in the internal market. This legislation formulated new competences for Slovak Trade Inspection since April 1, 2002 that are in accordance with the commitments of the Slovak Republic in relation to the European Union. These were expressed in the National Program for the adoption of Acquis Communautaire, as the primary basis in preparation for negotiations on accession to the

EU. A significant change has arisen since April 1, 2002 that SOI will not supervise a safety and harmlessness of food, cosmetics and tobacco products. Its activities will be focused on natural and legal persons who supply market with manufactured products and provide services (Slovenská obchodná inšpekcia, 2014).

Extensive European regulation exists especially in product labeling, marketing and advertising of food products. This area is regulated by the directive, which applies to all food products that are intended for direct delivery to the final consumer or a restaurant, hotel, hospital or other similar facilities. Obligations that must be listed on a packaging of the product is governed by the EC directive no. 2000/13. Basic legal norm related to the food industry - branch of soft drinks production, mineral water, fruit juices and concentrates - is particularly the Law of the National Council of the Slovak Republic no. 152/1995 Coll. on food, as amended changes and regulations. Basic Duties of Producers of food and beverages arising from this Act, is a production of quality and harmless food (Slov-Lex, 2015).

Codex Alimentarius or Food Code of the Slovak Republic is the implementing regulation of the Food Act and regulates a public heath requirements, hygiene requirements, requirements for a composition and quality of food ingredients as well as technological processes used in their production. It also includes packaging requirements for individual food or food groups and the manner of their labeling, storage, transport, handling, as well as the principles of sampling and marketing. The requirements laid down by the Codex Alimentarius are mandatory for each person who produces the food, manipulate with them and place them on a market. Issues related to drinks, mineral and spring water, fruit juices and nectars concern mainly (Štátna veterinárna a potravinová správa Slovenskej republiky, 2015):

- Proceeds of the Ministry of Agriculture of the Slovak Republic (MP SR) and the Ministry of Health of the Slovak republic (MoH SR) SR from April 28, 2004 no.1187 / 2004-100, which impersonates the head of Codex Alimentarius of SR providing for designation, as amended in later amendments
- Proceeds of MP SR and MoH SR from February 6, 2006 no.06267 / 2006-SL, supplementing the proceed of MP SR and MoH SR, which issues Codex Alimentarius of SR providing for microbiological requirements for food and packaging and on their packaging, as amended in later amendments
- Proceeds of MP SR and MoH SR from June 9, 2003 no.1799 / 2003-100, which impersonates the head of the Codex Alimentarius of SR providing for materials and articles intended to come into contact with food, as amended in later amendments
- Proceeds of MP SR and MoH SR from 15 March 2004 no. 608/9/2004 - 100, which was issued by the head of the Codex Alimentarius of SR providing for natural mineral water, spring water and bottled drinking water

In terms of product quality and its strategy of meeting the requirements, certification of management system and quality become a necessary standard in accordance with ISO and other systems.

ISO 22000 is an international standard - Food safety management systems. It is adjusted for organizations in food chain that want to guarantee their customers that their products are made with premium food safety requirements. Organizations in a food chain are considered to be all activities from primary agricultural production through manufacturing, distribution and final sale of food or meals. The standard includes requirements for harmlessness in both food producers and also includes the area of primary agricultural production, subcontractors, retailers, catering companies and distributors (ISO, 2005)

The basic framework shaping a business environment and thus the prerequisites for further economic growth in the country, is created by political environment. It is a crucial determinant of stability and protection for business activities. The current political development in the Slovak Republic is formed based on the results of parliamentary elections in 2016. To a certain extent, regular alternation of right-wing and left-wing governments in the eight-year periods brings frequent regulatory changes. Often personnel changes within a government prevent system from creating a conceptual framework and lead to distrust in a political system. Among others it brings the need for ongoing monitoring of changes, adapting of company's management to new arrangements and that leads to increase in costs. The bureaucratic burden is high.

Slovak Republic became a member of the European Union in 2004 and the country has become obliged to harmonise certain policies and some authorities has fallen within the European Union´s competence. General Food Law Regulation outlining general principles of food and feed law, is the main policy influencing a sector of non-alcoholic drinks production (European Comission, 2016).

The membership in EU, however, is not only binding in terms of implementing directives and regulations. Entering the European Union in 2004 brought a lot of positives. The most significant are duty-free access to the EU single market, free movement of goods, persons, services and capital, significant endowment policy from European funds and judicial cooperation, contributing to increase in legal security. Slovakia will obtain nearly €13.5 billion from EU funds in the period of 2014 - 2020, which will be able to use in different areas of life. It's about 2 billion more than in the previous programming period from 2007 – 2013 (Úrad vlády Slovenskej republiky, 2013).

According to the results of 10th Paying Taxes (2016) study published by the World Bank Group, electronisation of tax administration is the most frequent reform of tax systems in the world in 2015.

Overall average tax burden of a model company is, according to this year's results of 40.8% of revenues, which is only a 0.1% decrease compared to last year. Simultaneously, it was slightly reduced the number of tax payments as well as the time that the average company needs to meet its tax liabilities to 261 hours per year. This trend is noticeable every year throughout the ten-year im-

plementation period of the study Paying Taxes. Time that tax liabilities take has decreased on average by 61 hours in 10 years time and the number of tax payments has reduced by 8.2 mainly due to the introduction and improvement of systems of computerisation of filing tax returns and paying taxes (PWC, 2016).

Tab. 2 Overview of results of Paying Taxes 2016

	Overal Tax Burden [%]	Number of Hours Needed for Meeting Tax Liabilities	Number of Tax Payments
Slovakia	51,2	188	10
EU & EFTA	40,6	173	11,5
World – 189 Countries	40,8	261	25,6

Source: Reworked according to PWC (2016)

Slovakia was in 2014 (Paying Taxes 2016 based on the state legislation to 31/12/2014) one of the 18 countries, which introduced electronisation of filing tax returns and paying taxes. Slovakia in this year's study occupied the 73rd position and in overall evaluation of paying taxes improved its position by 27 places over the last year. The overall tax burden in Slovakia - the total tax rate of 51.2%, however, is more than 10 percentage points higher than the average of the EU and EFTA countries amounting to 40.6%.

Tab. 3 Overview of Slovakia's Results in Paying Taxes in 2014-2016

Slovakia	Overal Tax Burden	Corporate Tax	Payroll Deduction	Other Taxes
Paying Taxes 2016 [%]	51,2	10,5	39,7	1,0
Paying Taxes 2015 [%]	48,6	8,5	39,7	0,4
Paying Taxes 2014 [%]	47,2	7,0	39,6	0,6

Source: Reworked according to PWC (2016)

According to world rankings of perceived corruption performed by Transparency International in 2014, Slovakia ended at the 54th place out of 175 countries. It is the sixth worst place from the EU countries, when only Croatia, Italy, Romania, Bulgaria and Greece finished below Slovakia. According to the ranking that reflects a level of perception of domestic and foreign analysts and managers, the most immaculate countries are Denmark, New Zealand and Finland. Conversely, the most corrupt are Somalia, North Korea and Sudan (Transparecny International, 2015).

According to the same study of Transparency International (2015), the problem of corruption is considered to be the third most serious problem in Slovakia, right after unemployment and living standards. In contrast to measurements in 2012, it shows an increase of corruption in almost all areas. The largest increase from 52% to 62% occurred in the area of judiciary and prosecution. The survey also shows that in the area with the most widespread bribery in Slovakia is considered to be a health system.

4.1.2 Economic environment

The food industry in Slovak economy is a very important sector that is directly related to primary agricultural production, generating a basic food production as well as services, provides jobs, has a significant impact on regional development and provides nutrition to the population.

According to the Ministry of Agriculture and Rural Development (MARD SR), the concept of development of the food industry mainly focuses on improving food self-sufficiency level to 80% current consumption of the population in Slovakia on the horizon of 2020. The auxiliary goal lies in strengthening of the Slovak food industry market and increasing its competitiveness (Ekonomika, 2014).

Tab. 4 Overview of macroeconomic indicators

	2007	2008	2009	2010	2011	2012	2013	2014	2015
GDP (%, y/y)	10,7	5,4	-5,3	4,8	2,7	1,6	1,4	2,4	3,2
Registered Unemployment Rate (%)	11	9,6	12,1	14,4	13,5	14	14,2	13,2	12
Inflation Rate (%, y/y)	2,8	4,6	1,6	1	3,9	3,6	1,4	-0,1	-0,3
Final Consumption Expenditures (%, y/y)	5,4	5,9	2,2	-0,4	-1,9	-1,2	-0,5	1,6	2,1

Source: Reworked according to The National Bank of Slovakia (2015)

Gross domestic product (GDP) is one of the primary indicators of economic activity used for assessing a health of a country's economy. It represents the total value of all final goods and services produced in a given period on a given territory. For better comparability, it is often used annual growth rate describing the year-on-year change of economic activity. Data from the Statistical Office of the Slovak republic (2015) and Eurostat (2015) show that Slovak economy recorded the largest annual increase since 2010. The last quarter of 2015 rose by 4.2%, which was the largerst growth of all EU countries.

Slovak economy is driven forward by low-interest caused by issuing money by European Central Bank. Every month since March 2015 there is new €60 billion in economies of 19 countries using the common currency. Another driving force is low price of energy, giving businesses more room for capital expenditures. This year, the Slovak economy will not probably grow as fast as in the last year. Nevertheless, the European Commission forecasts GDP growth of 3.2% in 2016 for Slovakia (Pravda, 2016).

In evaluating a standard of living it is preferable to use GDP per capita. In other words, indicator adjusted to take into account a size of the economy expressed by a number of inhabitants and differences in price levels across coun-

tries. Slovak Republic in 2014 ranked 22nd place among European Union countries in terms of GDP per capita in purchasing power. GDP per capita in Slovakia was at 76% of the EU average last year. From post-communist countries only the Czech Republic (84%) and Slovenia (83%) registered higher figures. Analyst David Marek from Deloitte predicts a GDP per capita 86% for the Czech Republic and 84% of the Union's average for Slovakia in one year. The richest country in the EU is the Luxembourg (263%). At the opposite end of the scale is Bulgaria with the value of 45% (NovinySK, 2015).

Consumer prices in Slovakia have been decreasing consistently since the end of 2014. The year-on-year comparison of inflation in 2015 and 2016 shows that prices of food and non-alcoholic beverages decreased by 2,5%, housing, water, electricity, gas and other fuels by 1.3% and postal and telecommunications serviced by 0.3%. Deflation generally misleads consumers to delay spending and companies to postpone investments, due to expected lower prices in the future. It undermines economic growth and employment, however, this slight deflation does not harm the economy (Národná banka Slovenska, 2016).

Even unemployment figures show that recent slight deflation does not cause a significant damage to the economy. The unemployment level in Slovakia is currently reaching the long-term lows. The registered unemployment rate at the end of 2015 fell by 1.2% and in the first quarter of 2016 fell to the lowest level (11.4) since 2008 (Národná banka Slovenska, 2016).

Gross domestic product is greatly influenced by another key macroeconomic indicator - consumption expenditures. According to data from Indexmundi, final consumption expenditures dropped significantly from 5.9% in 2008 to 2.2% in 2009. Consumption expenditures were reaching negative figures from 2010 to 2013 which can be considered as a consequence of current economic crisis. After four years of negative final consumption, in 2014 was recorded positive change in the year-to-year comparison of final consumption expenditures (IndexMundi, 2015).

According to the Committee on Macroeconomic Forecasts, in 2016 it is expected strong annual growth in nominal disposable income by 4.1%. That creates room for growth in household consumption of 3.3% as well as further increase in a saving rate. The fact that the final consumption indicator is for the purpose of this thesis significant is proven by the statistics that consumer spending of Slovak households on food and non-alcoholic beverages has been in range 19-20% of total consumption expenditures (Štatistický úrad Slovenskej republiky, 2016).

4.1.3 Social environment

For changes in the consumption habits of the population and development of demand is important to analyse food consumption in terms of a socio-economic impacts and demographic development of a society.

One of the most serious problems of today is the aging of a population. As well as in the whole European Union also in Slovakia are recorded problematic indicators regarding fertility, causing a debate on the future of Slovakia.

From 1950 to 1989 Slovakia experienced significant demographic boom. The birth rate in this period was very high and from an increase in population also benefits the national economy, because all these people push the consumption up. Their demand also pulls the supply up, it increases production and investments and results in an increase in GDP. As a consequence tax revenues to the state budget grow. Slovakia is currently in a situation when people born in mentioned period constitute the population in economically active age and numerous post-war boomers are slowly beginning to reach retirement age. Country's total population is 5,420,000 people (Bencont, 2015).

The Eurostat divides a population according to age structure into three main categories. Those are 0-14 years old as children or economically dependent group of young, 15 – 64 years as a working age people also known as economically active population and over 64 years as a retired people or economically dependent group of elderly people.

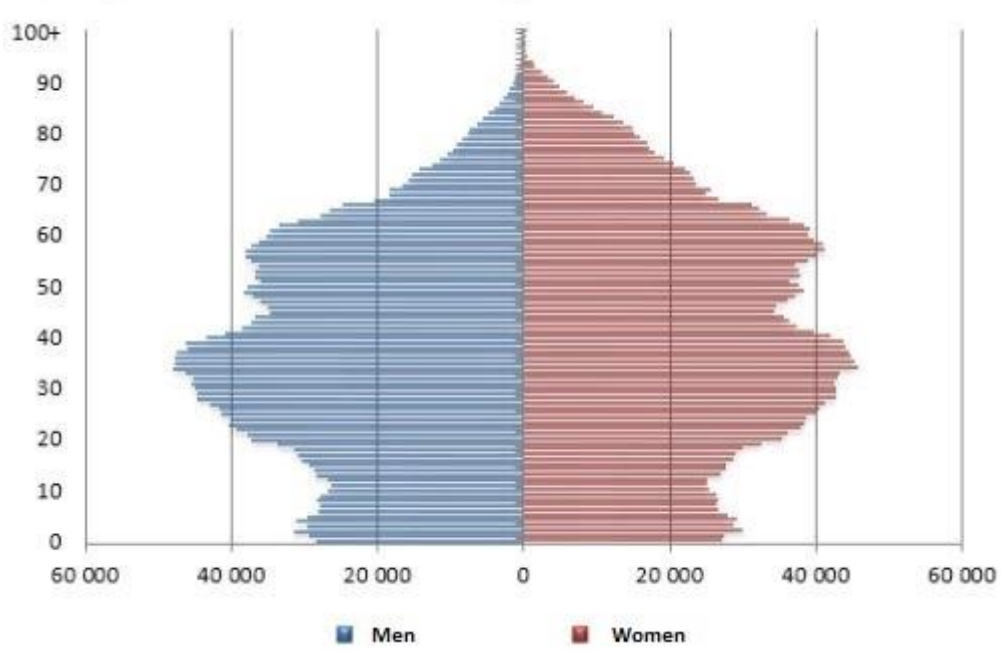

Fig. 6 Age structure in Slovakia
Source: Eurostat (2015)

The Figure 6 shows that between the size of the population from 20 to 40 and the population under 20 is a significant difference. A group 20 to 40 is up to 58% higher than a group 0 to 20. From current situation, it follows that 70% of total population ranks among economically active population, while most peo-

ple are just in the age group 20 to 40. Such a situation is called as a demographic window.

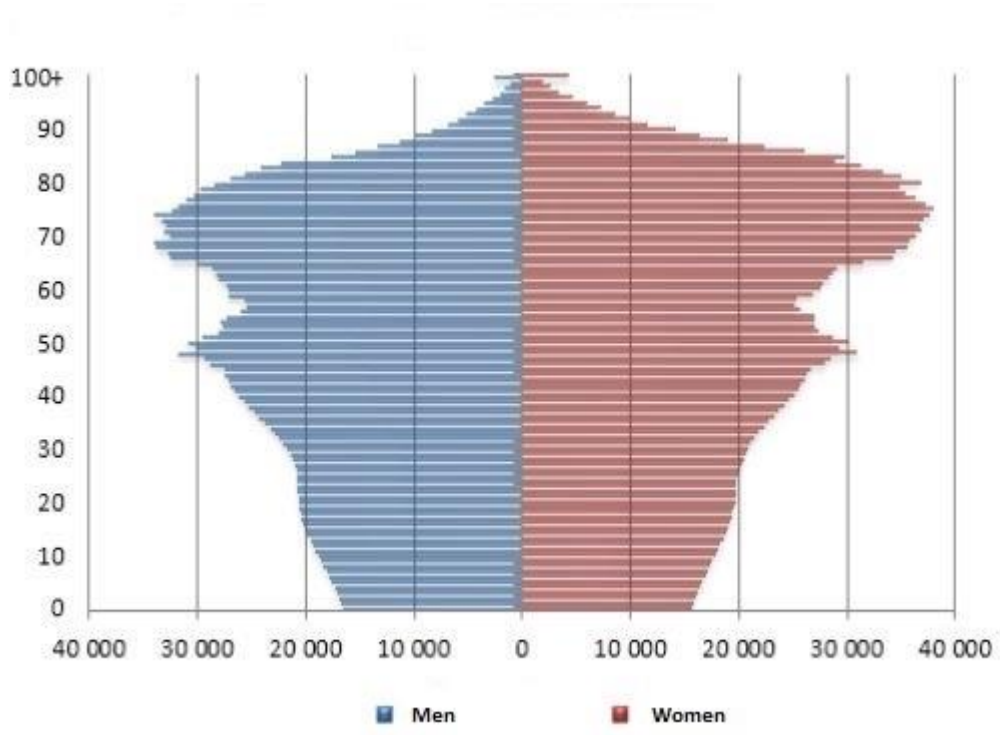

Fig. 7 Prognosticated age struucture in 2060
Source: Eurostat (2015)

A downward trend of this indicator, however, causes that in the last 20 years there was born significantly fewer children. This category is currently 0-20 years and most of which are not yet considered as an economically active population. In fact, this is the population that will replace currently largest group of the population in 20 years. Those will move by another 20 years but still will be ranked among economically active population. However, what will happen in the next 20 years? The largest group of population enters retirement age, and a smaller group will work. A significant change can be seen in the chart predicting the age structure of the population for the year 2060, where the population of Slovakia according the Eurostat population projection drops down by 840,000 inhabitants to 4.6 million. The median age of population in Slovakia has grown by 3.5 years, from 35.1 years in 2004 to 38.6 years in 2014. The Eurostat population projection also predicts that during the period 2014 to 2080, the median age of Slovakia is projected to increase by 15.1 years to reach 53.7 years. That makes Slovakia the only member state of the EU exceeding the value of 15 years and with Poland only two member countries exceeding the level of 10 years. For better clarity, EU-28 population's median age is expected to rise by 4.2 years to reach 46.4 years (Vaňo, 2015).

Table 5 shows a percentage change of total population between years 2004 and 2014 for the member states of EU. An increase in the share of population aged 65 years and more between 2004 and 2014 is 2.1% for EU and for Slovakia 1.9%.

Tab. 5 Change of total population between 2004 and 2014 [%]

	0-14 years old		15-64 years old		65 years old or over	
	2004	2014	2004	2014	2004	2014
EU-28	16.4	15.6	67.2	65.8	16.4	18.5
Slovakia	17.6	15.3	70.8	71.2	11.6	13.5

Source: Reworked according to Eurostat (2015)

Consumption level and focus on a healthy lifestyle of Slovak households is approaching the level of Western European countries, even though there are plenty of differences in consumer behaviour that distinguish Slovak consumer from their western neighbors. Slovak consumer is still strongly oriented on price but with the growth of income people seek also quality. Surveys also show that Slovak people's purchases are often intuitive and they strongly react on various discounts. As it can be seen in the Figure 8 Slovak consumer drank 63 litres per year in 2014. On the contrary, average consumer in the EU consumed 105 litres of bottled water annualy.

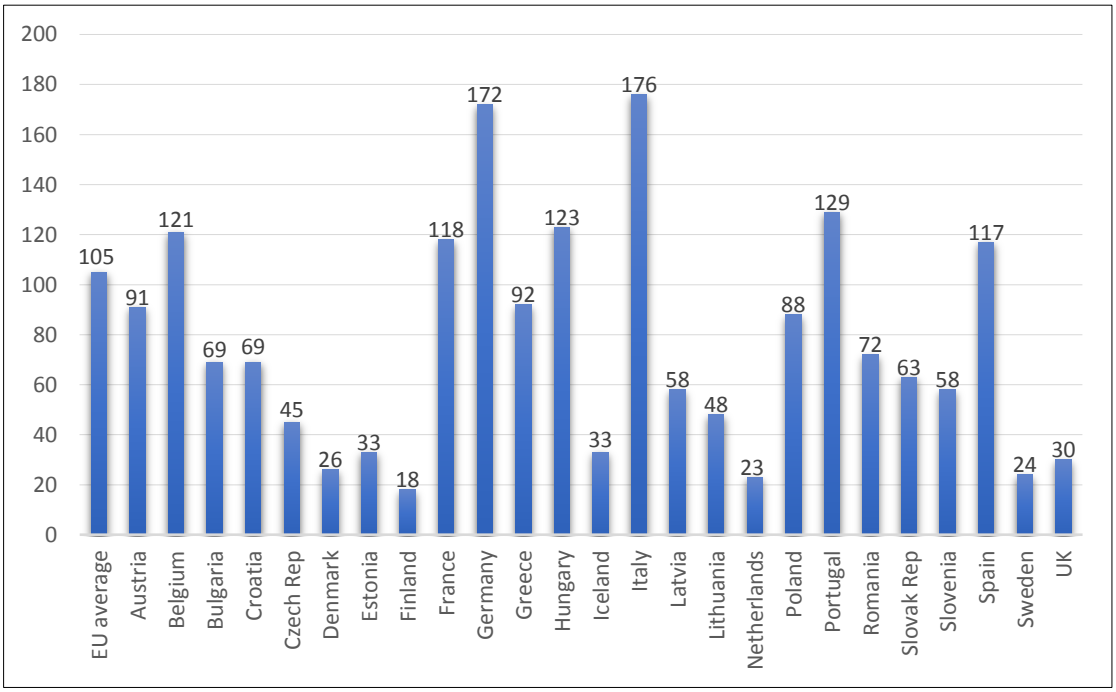

Fig. 8 Consumption of water in the EU in 2014 [Litres per Capita]
Source: Reworked according to Eurostat (2015)

Consumer behavior is very diverse and motives are subject not only to the financial situation of individual or family, but also reflect local traditions and customs, the social status of the family, age or membership in a particular social group. Slovak consumer trends are similar to those in the rest of Europe – the amount of time spent on activities such as cooking is reduced in favor of leisure activities, entertainment and healthy lifestyle.

The current demographic trend of the population in Slovakia when number of elderly people increases will lead to greater demand for medicines and food supplements that are partially contained in natural mineral waters. The increasing level of consumption is also linked with rising income, falling commodity prices and growth of supply of products on a market.

The years 2009 to 2014 brought changes to the area of migration as well. Compared to the years 2007 and 2008 growing trend of migration increase has stopped and net migration has started to decrease. In 2014 it achieved only the value of 1713, which is only a quarter compared to the pre-crisis years. Changes were also detected in the immigrants' source countries. The long-term trend, which was typical by the largest number of immigrants from the Czech Republic, was interrupted in the years 2007 and 2008 by increased number of immigrants from Romania. From 2009 to 2014 the highest number of immigrants to the Slovak Republic came from the Czech Republic, followed by Hungary, Romania and then Germany, Austria and Italy. In general, men have predominated among immigrants (IOM, 2016).

On the contrary, most of the Slovak population have been moving to the Czech Republic, followed by Germany and Austria. In 2014 more than 94,000 people changed the permanent residence in the Slovak Republic. Trends in internal migration in the long-run remain unchanged. The main feature is the movement of population mainly over short distances, where more than 45% withdrawal falls on migration between municipalities within a district, less than 30% of movement between districts within a region and almost a quarter of moving on migration between regions. Suburbanization is still one of the most determining trends. This is also confirmed, e.g. by the highest population growth of internal migration in the districts of urban environment of Bratislava and Košice. Those are particularly districts of Senec, Pezinok, Malacky, Košice - surrounding. The largest gains are recorded in Bratislava, Trnava and Nitra regions. All other regions are losing people (IOM, 2016).

4.1.4 Technological environment

It is obvious that innovation, creativity and new technologies often determine a success of companies in a given country. Innovative potential of compan's environment is one of the most important technological factors. Even though a beverage production belongs into the category of low-tech according to the technological intensity of production, research and development play an important role in innovation processes of auxiliary industries. Development of infrastructure, information technologies, improvement of logistics, planning and produc-

tion processes, as well as material intensity have considerable impact on the operation of the company.

Supporting research and innovation linked to a practice, the commercialization of research outputs and their end-use application in practice play an important role in fulfilling the strategic objective of the European Commission - the promotion of economic growth and employment. Support of science should contribute to rise in employment, growth in investment, a digital single market, and policies on energy and climate change. Support is addressed to innovative small and medium-sized enterprises, which can obtain funds from the European Fund for strategic investments.

In the context of Slovakia this priority has reflected into an increase of available resources for science, research and innovation supported by European Structural and Investment Fund (ESIF). While in the programming period 2007 - 2013, was the financial allocation € 1.2 billion, in the new programming period 2014-2020, which will be implemented through the Operational Programme Research and Development, is a € 1.8 billion and, together with the support of small and medium enterprises the overall amount is € 2.2 billion. The hallmark of financing in Slovakia, in addition to low total costs (0.82 per cent of gross domestic product) is low level of private investments that reach only about 0.34% of GDP. Overall, since 2005 the share of industry in financial stimulation of research fell out of a total 54% to 37.7%, which does not correspond to the trend of the European Union to achieve a two-thirds share of private sources in total financing. Objective of the European Commission in Strategy for Growth and Employment, Europe 2020, is to reach 3% of GDP level of investment into R&D until 2020. In 2013 Slovakia increased its target from 1% to 1.2% (Pravda, 2015).

R&D funding in Slovakia is mainly provided by The Ministry of Education, Research and Development, and Sport of the Slovak Republic and the Slovak Research and Development Agency (SRDA) which provides support to domestic and international research and development projects developed by government research institutes, Universities, private enterprises and non-profit organisations. The SRDA also advises Slovak Government on matters of R&D policies and is the most important research funder for applied research and development in Slovakia. Its total budget increased from € 0.15 million in 2001 to € 26.27 million in 2014 (European commission, 2016).

Slovakia has recently reached the interesting ratio of work performance to labour costs in the R & D area. This results from the latest research of World Economic Forum where 139 countries worldwide were compared to what extent pay in the country relates to productivity. Slovakia was ranked No.10 in the world (Sario, 2011).

Global trend in the soft drink industry focuses on safety and quality of drinks in terms of their composition. Consumers demand more healthy food and beverages. With an increase in consumption relates also an increasing environmental impact. That creates pressures on product and technological innovation reducing demand for energy and materials to produce consumer goods. In

production of soft drinks there comes to plenty of consistent changes in a technology and additives used. In particular they arise from the aforementioned market requirements. Usual additives are being replaced with natural alternatives with equivalent effects. Sugar is substituted by fruit sweeteners, citric acid by lemon concentrate, dyes by natural color components. It's an effort to change that better meets the expectations of consumers (Euromonitor International, 2016).

From a technological viewpoint bottling and packaging of beverages is subject to major changes. The aim is to achieve the least possible burden on the environment. As for the packaging, reusable glass bottle becomes clear current trend. According to the industry report performed by EuropeanFederation of Bottled Waters is in Germany almost 26% of offered water currently packaged in glass bottles. The total volume of glass packaging in Europe in 2011 amounted to 21.7 million tons, which is an increase compared to 20.8 million tons in the previous year (EFBW, 2015).

Close cooperation between suppliers and manufacturers of soft drinks, as well as good training of developers and business representatives, will be of considerable value on a rapidly changing market in coming years, which will decide between success and failure of the final product on the market.

Business activities of soft drinks industry are as well as any other industry influenced by political and legal, economic, social and technological factors of an external environment. Those factors are mutually interrelated and influence each other. From executed PEST analysis follows that there are quite favorable external conditions for doing business in industrial production of soft drinks in Slovakia. The positive signs of the external environment include some legislative and demographical changes, change in lifestyle and eating habits of the population. On the contrary, entrepreneurial environment in Slovakia may suffer from a vast corruption and disbelief in political system. Under-utilized potential sources of mineral water in Slovakia provide options for further development in this field.

4.2 Porter's 5 Forces Model

4.2.1 Competitive rivalry

The relatively small Slovak market with bottled water contains few dozen of brands but only some of them have their marketing communication formed and effective. To succeed in a fight for a customer, brands have to be more innovative, more creative, more aggressive. This approach makes packaged water market a very dynamic segment.

In 2014, a leader in the domestic market of sales of mineral water remained to be the company Slovenské pramene a žriedla, Inc. with over 41.383 million liters sold and 26.9% market share. Another major domestic players Minerálne vody, Inc. and Trenčianske minerálne vody, Inc. maintained high market share in 2014, when in terms of sales they reached 15.7% and 11.9% respectively. With regard to sales of foreign mineral waters on Slovak market, the largest market share consists mostly of Czech mineral waters from the Karlovarské minerální vody, Inc. represented by brands Mattoni and Magnesia, with a market share of nearly 16%. Since 2009 there has been a significant increase in sales of another Czech brand Korunní from the company Karlovarská Korunní, Ltd. when year-on-year increase in its sales on the Slovak market reached more than 424%. That was caused by listing the brand in the retail Lidl which has become the exclusive supplier of given mineral water, as well as substantial marketing support (PMP Group, 2015).

Within a sparkling water the best-selling mineral water is Baldovská that has overcome brand Budiš in the two last years. In a category of slightly carbonated water the best-selling is Bonaqua, however, that is only regarded as spring water. Big growth in this area has been seen in case of Korunní. The best-selling brand of still water is Rajec, despite the fact that it is just a table or spring water with a high selling price. The ultimate consumer does not perceive a composition of water in larger extent, and that is one of the reasons why there occurs a growing share of sales of table water Rajec owned by Kofola, Inc. An important role is being played by good marketing mix (PMP Group, 2015). Companies engaged in production and sale of mineral water on the Slovak market (PMP Group, 2015):

- Slovenské pramene a žriedla, Inc. - It is one of the leading producers of soft drinks in Slovakia. In addition to own-brands it also produces beverages for retail and wholesale chains. In five production plants employing up to 400 people. Annual sales totaling about € 40 million. The production range consists of more than 100 kinds of products. In its product portfolio there are flavored and unflavored mineral and spring water, flavored soft drinks and syrups.
  - Budiš, Fatra, Gemerka, Slatina
- Minerálne vody, Inc. - It is the second largest producer of mineral water in Slovakia. Annual sales totaling about € 18 million. Line of work of the company Minerálne vody, Inc. is collecting and filling of natural mineral water

under the name Salvator and Baldovská, as well as spring water Savior and water for babies Drobček.
  - Baldovská, Salvator
- Trenčianske minerálne vody, Inc. - It is the third largest producer of mineral water in Slovakia. It specializes exclusively in producing soft drinks - namely, production of mineral water still, sparkling and flavored.
  - Mitická
- Karlovarské minerální vody, Inc. - Is the largest producer of mineral and spring water in the Czech Republic, while employing around 400 people. Karlovarské minerální vody now troduces mineral and spring water under brands Mattoni, Magnesia and Aquila and exports them to more than 20 countries.
  - Magnesia, Mattoni
- Karlovarská Korunní, Ltd. - Ranks among the leading producers of mineral water in the Czech Republic. Korunní owns not only the certificate of the Czech Inspectorate of Springs and Spas from the Ministry of Health of the Czech Republic but was also included in the certification almanac of major German laboratories Institut Fresenius. Its defining feature is the balance of minerals - optimineral.
  - Korunní
- Coca-Cola HBC Slovenská republika, Ltd. - Produces, sells and distributes a broad portfolio of brands of soft drinks, mostly owned by The Coca-Cola Company. Portfolio of the company consists of brands known worldwide (Coca-Cola, Coca-Cola Zero, Coca-Cola Light, Fanta and Sprite, Nestea, Monster) but for the purposes of this thesis is particularly important a local brand of mineral water Matúšov prameň.
  - Romerquelle, Matúšov prameň
- LimoŠpes, Ltd. - It has been on the market since 1991 and since the beginning has a character of a family company. The company distributes two strong brands not only on Slovak but also on foreign markets. These are Ľubovnianka and Sulinka.
  - Ľubovnianka, Sulinka
- Kláštorná, Ltd. - From the very beginning, the company has benn primarily oriented on natural mineral water filling into consumer packages. In 2010, the company has modernized production technologies for filling mineral water, thereby achieving a more efficient production process- It ranks the company among the most advanced producers of mineral water in the pan-European space quality-wise.
  - Kláštorná
- Amos-Services, Ltd. - Headquartered in Horná Seč and owns a plant in the village of Korytnica. The company Amos-Sservices bought a plant in April 2013 and since has invested in its modernization. Modern production line allows filling of mineral water PET bottles as well as glass bottles.
  - Korytnica

4.2.2 Threat of new entry (potential competitors)

Mineral water business is a highly competitive business where a strong local patriotism and economic nationalism prevails. For survival, company has to upgrade its products constantly and needs to keep looking for new markets to fight current retailers.
It is well-known that Slovakia has a huge supply of good quality groundwater and on a small area has over 1,600 registered sources of mineral water. Slovak water is therefore more interesting and valuable commodity for domestic and foreign entrepreneurs.

At first glance, the business with mineral and spring water looks easy. Entrepreneur leases a spring from the state, build a plant for filling bottles and can take up with the business. The fact that this business is not as easy as it seems, is proven by the fact that from huge amount of mineral and natural springs in Slovakia water bottling uses just over twenty. Why? The process of recognition of mineral water is too expensive and time consuming. The spring has to be observed many years to demonstrate the stability of the composition then it comes to its recognition, permission to use the source and the approval of intended use.

The business with mineral water, therefore contains strong players who dispose of a huge capital. Except of Coca-Cola and Kofola there are other significant business groups such as J&T, Slovintegra or Arca Capital. These financial groups have been involved into the business gradually after the year 2000, when mineral water consumption grew and purchase of a spring seemed to be a good investment (PMP Group, 2015).

Companies already operating on the market of soft drinks in the Slovak Republic are trying to differentiate their products to some extent by emphasizing their positive effects on human health as well as unique flavor and mineral composition. Even though new competitors entering the market would have a hard time and it would be difficult to compete with already established brands, it is still possible to find the gap and achieve success based on a unique production method or nutritional value added. If such a potential entrant opted for a business model, where a large part of the production process is carried out by licensed companies for bottling beverages, he must count on considerable investments in production capacity required for the production of beverages. This investment is usually so high that it can be considered as a barrier to entry into this market.

Recently, the trend of targeting young consumer is on the decline and the trend of focusing on all age groups is rising and thus makes room for establishing potential new entrants participating in this field. All this, including the expected shift to healthier drinks, increased interest in natural health products, such as fruit juices and smoothies, increasing the probability of possible success in the market.

Recently, it is also conceivable to consider breweries as potential competitors because of increasing expansion of their product portfolio of non-alcoholic

soft drinks. This fact is due to constantly declining beer consumption in Europe and also in the Slovak Republic. As an example it can be taken companies Zlatý bažant or Staropramen.

To sum it up, a likelihood of threat from new entries to leading companies in this field is rather very low.

4.2.3 Threat of substitution

Among the substitutes replacing bottled mineral water mainly include table water, homemade fruit juice and sweetened drinks, teas, and last but not least tap water.

As it is stated in the table 6, bottled water consumption is slightly decreasing from 2011. In 2014 overal consumption of bottled water in the Slovak Republic amounted 343 millions of liters compared to 373 millions of liters in 2011. It can be considered as a general trend because an overall consumption of non-alcoholic drinks has been decreasing during this period. This trend seemingly provides an opportunity for producers of potential substitutes. Market leaders, however, already own most abundant mineral springs and its product portfolio are so broad that this fact significantly reduces the threat that may be posed by introducing of potential substitutes (Asociácia výrobcov nealkoholických nápojov a minerálnych vôd na Slovensku. 2012).

Tab. 6 Consumption of Non-Alcoholic Beverages in SR [mil. liters]

	2011	2012	2013	2014
Non-Alcoholic Beverages in Total	1116	1092	1020	997
Carbonated Beverages	469	449	417	398
Bottled Water	363	368	351	343

Source: Reworked according to Asociácia výrobcov nealkoholických nápojov a minerálnych vôd na Slovensku (2012)

The trend of decreasing consumption of non-alcoholic drinks described in the table 6 can only be explained by rising consumption of tap water because people suddenly do not drink less.

It is a tap water that experiences a great marketing boom lately. In recent years, it is supported by the campaign of the Association of Water Companies - "I drink healthy water, drink tap water." The ambition of full-scale media campaign to inform customers of water companies about the quality of tap water, which is an appropriate solution of drinking regime and contributes to public health. Reasons why customers may abandon bottled soft drinks and prefer tap water are economical as well as ecological. Tap water is still incomparably cheaper than bottled water.

Consumption of tap water is also supported by devices SodaStream and LimoBar with which it is possible to produce carbonated beverage of desired intensity easily and quickly. SodaStream as well as LimoBar have massive mar-

keting campaign behind, which is based on the reasons why tap water is healthier and more profitable for a consumer.

4.2.4 Supplier power

The primary inputs necessary for a production of bottled mineral water is primarily available mineral spring with a desired abundance, concentrates several natural and synthetic sweeteners such as corn syrup or refined sugar, aspartame, stevia and similar additives. Some of them belong among commodities and even when they are available from several sources, they are subject to price fluctuations. Other ingredients, such as e.g. aspartame, are only available from one or two major distributors. However, even in these cases there are normally some substitutes on the market. If suddenly aspartame becomes unavailable or too expensive ingredient, it may be replaced by saccharin or other sweeteners from different suppliers (Euromonitor International, 2016).

Negotiating power of manufacturers of packaging has been growing since there is increasing demand for functional packaging and especially for packaging that burden environment the least. There are many trends and options on this market. The question only arises in terms of cost and any further recycling options. Advertising and marketing agencies also play a major role in establishing a brand in this market.

Slovak market follows the trend of soft drink beverages with low levels of sugar and sodium, which requires new and different production methods. Due to not very high material and raw material intensity of mineral waters production, bargaining power of suppliers on the market is moderate rather weak (PMP Group, 2015).

4.2.5 Buyer power

Hypermarkets are still the most important distribution channel in terms of selling of soft drinks. The reason is that hypermarkets have an opportunity to offer competitive prices and wide range of promotions, as well as their own private labels. Discount stores are the second most important channel. Discount stores benefit from offering competitive prices, even if they have smaller offer compared to hypermarkets, and that with an increase in their number are now usually available even in smaller towns. Supermarkets on the contrary, have lost part of their share because they offer goods for relatively high prices and it has been shown that Slovak consumers do not buy soft drinks in this type of stores very often. The concept of small local shops where busy people can quickly purchase their goods has strenghten its position in the market of soft drinks in 2012. Large supermarkets are on decline and Slovaks prefer shopping in smaller stores in recent years. It emerged from the survey of Shopping Monitor Slovakia back in 2013. The Slovaks when buying are not driven only by price, but more important is the nearness of shops. This is a result of entry of larger amount of retailers in this segment, which brings better marketing practices and lower

prices that are often fully comparable to those in supermarkets (Aktuality, 2015).

Successful are particularly those with smaller shops. According to the data available on the website zisk.sk retailers Billa, Kaufland and Lidl increased their profit. All of these chains have stores with dimensions up to 3000 square meters. The chain Coop Jednota experiences similar success story in recent times. The chain is divided into several regional consumer cooperative companies. All of them with an exception of Coop Jednota Nitra increased sales in last five years. Despite these facts main distribution channels within the Slovak market of soft drinks still remain, as was already mentioned above, hypermarkets and supermarkets accounting together for more than 50% of the total market volume (Aktuality, 2015).

Tab. 7 The Largest Retailers in Slovakia in 2014

Position	Company	Name	Number of shops	Sales [mil. €]
1	Tesco Stores SR	Tesco	155	962
2	Kaufland SR	Kaufland	54	846
3	Lidl SR	Lidl	123	787,5
4	Bila Slovensko	Billa	122	508,5
5	Metro Cash&Carry SR	Metro	6	292,5
6	Diligentia R.C., Terno Grop	Hypernova, Terno	132	242,3
7	Labaš	Labaš	21	195,9
8	CBA Slovakia	CBA, Cent	329	151,2
9	Coop Jednota NZ	Jednota	116	92,7
10	Coop Jednota K	Jednota	163	92,4

Source: Reworked according to Aktuality (2015)

Discount stores are doing extremely well. German Lidl was the most prosperous retailer in the last year followed by Kaufland. The reason for this is besides others the fact that the two chains of stores belong to the Schwarz - gruppe. Being a part of one group gives them an advantage in purchasing and bargaining power with suppliers. This helps them to reduce purchase prices and thus work better with a margin and with selling prices, respectively. Slovaks spend together more than € 5.8 billion in ten largest commercial food chains during last year. That's almost a third of the total retail sales, which in the last year amounted to € 18.9 billion (Aktuality, 2015).

This result only confirms that large retailers are the main purchasing power in the market. In this case, however, the chains have relatively weakened position as consumers in the market are mainly lead by particular brand. Retail business is thus forced to offer brands that are popular and demanded. Several soft drink producers were able to create such a strong brand and it weakens the position of purchasers which recognizes that these brands are necessary to be

offered in its supply. Generally speaking, a buying power of soft drink market in the Slovak Republic is appropriate under the circumstances.

To sum it up, the market with mineral water in Slovakia is saturated mainly by producers from Slovakia and Czech Republic. It is even more difficult for potential competitors to entry the market when there is a number of potential substitutes in various soft drinks.

4.3 Financial Analysis

The aim of the diploma thesis is to identify key drivers influencing the competitiveness of non-alcoholic beverages producers, focusing on financial performance key drivers and possibilities for their improvement of companies specialising in production of non-alcoholic drinks - mineral water, specifically. Diploma thesis aims to answer the research questions. This objective is viewed from the perspective of the owners of these companies. This criterion is monitored by using the indicator of economic value added (EVA). Calculations are based on EVA INFA methodology. The value of this indicator is derived not only from the operating activities of an enterprise, but also from a capital structure and liquidity of a company. Companies will be evaluated based on the analysis of profitability, activity, debt and liquidity. The calculation of the ratios of financial indicators reflecting a situation in companies and consequent determination of their impact on EVA indicator is a process how to fulfill the objective of the thesis.

The input data for processing of the second part of the thesis were drawn from the database Financial Statements Register available on the websites of the Ministry of Finance of the Slovak Republic and the database Amadeus. This analysis is performed on companies operating in territory of the Slovak Republic that meet the following criteria:

- Business activities in the production of soft drinks - mineral water in particular
- Head Office in the Slovak Republic
- Company's lifetime in the period between years 2008 – 2014

The aformentioned conditions are fulfilled by five companies that are present on the Slovak market. Therefore it can be concluded that these companies comprise a representative sample and are generally applicable for the whole market. Companies meeting the requirements are:

- Slovenské pramene a žriedla, Inc.
- Minerálne vody, Inc.
- Trenčianske minerálne vody, Inc.
- LimoŠpes, Ltd.
- Kláštorná, Ltd.

The main source of information for the following calculations and analyses are the financial statements (balance sheet and profit and loss statement) of each company and for each year of examined period.

The aim of this study is supposed to be not to analyze individual companies operating in the market of soft drinks production, but given market as a whole. To obtain more detailed insight into the market of mineral water production is, however, necessary to determine basic financial indicators that reflect a financial situation of individual companies and jointly generate an image of the entire market. Another justification for this step is that the value of EVA, which is fundamental for this thesis, derives from current financial situation of each company. These ratios will be further analyzed from the viewpoint of their impact on EVA.

Respective indicators are calculated for each of the five companies separately and simultaneously for each year in the range of 2008-2014. Final values shown in graphs are defined as follows:

(1) Calculation of the value of the indicator for individual businesses in respective years

(2) Calculation of the indicator values from partial aggregated input variables for each year

Diagrams in this chapter are supported by tables which for clarity show year-on-year percentage change in given items from which the indicator is calculated. Development of partial changes in each of the variables, in these tables, is entered in the form of indices. The appendix at the end of the diploma thesis contains detailed tables with partial calculations for each company.

4.3.1 Liquidity Ratios

Company's solvency or its ability to repay its debts on time is a thing not only monitored by business partners but also by other interest groups. There are employed liquidity ratios defined in the chapter Theoretical part, namely Formulas (7), (8), (9). All three liquidity indicators are calculated for the reference companies in this diploma thesis. Development of current, quick asset and cash position ratio by the analyzed sample in the period of 2008-2014 looked as it is shown in the Figure 9.

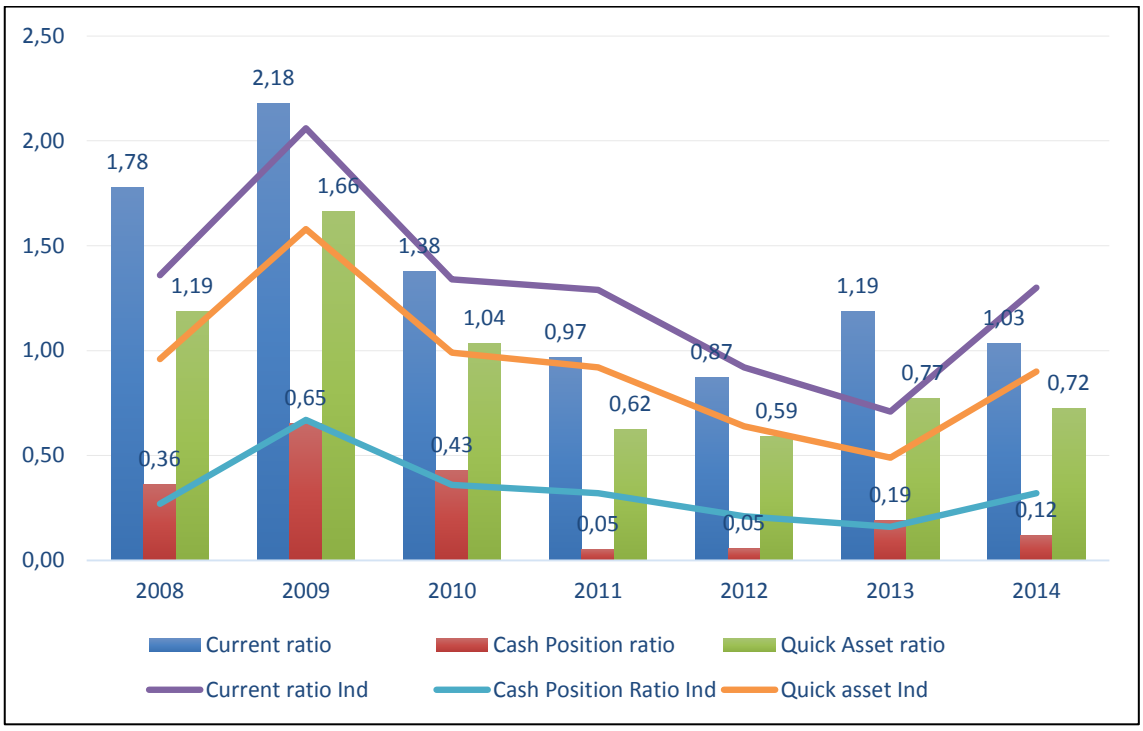

Fig. 9 Liquidity ratios

In case of current liquidity it is generally accepted that values in a range from 1.5 - 2.5 are advisable. Then a risk of insolvency decreases as the figure is growing. All three liquidity ratios influence the value of EVA INFA directly as they are an inseparable part and input variables. Lower levels of liquidity will also cause an increase in risk premium for financial stability according to formula (29) defined in the chapter Methods, which will in turn affect companies' performance and competitiveness. With the exception of the years 2008 and 2009, none of the values of current liquidity falls within this interval. Risk premium for financial stability in these two years is 0. Despite the fact the figures seems to be recovering slowly, it can be assumed that current economic crisis has influenced given sector in terms of liquidity. An increase in the value is noticeable in 2009, thus in the year that an economic crisis had a significant impact on. The table 8 shows that this growth is due to an increase in short-term assets together with a year-on-year decline in the value of current liabilities. In 2011 there was a growth in short-term liabilities of the companies, while the value of current assets remained without major changes. This resulted in a decline of current liquidity to 0.97, which means that in a given year companies producing mineral water would have been unable to meet its commitments by current assets. That means the value of risk premium for financial stability would be at maximum level. The following years have shown signs of recovery but industry levels of liquidity are nowhere near above mentioned recommended values.

Quick ratio differs from current ratio in the fact that it includes short-term assets reduced by inventories into the calculation, and in this way, it better re-

flects the company's ability to pay. The fact that values of current and quick ratio varies depends on a size of inventories. These account for a minority of the total amount of current assets in enterprises from selected industry. Every company's management should strive for quick asset liquidity indicator value ranging from 0.7 to 1.5. The value of less than 0.7 indicates a boundary liquidity and considerable slump of the indicator below this limit might be very dangerous (Arnold, 2012). The aforementioned diagram shows marked downward trend of quick liquidity in the sector. It can be seen in the Figure 9 that quick ratio has a similar development trend as current ratio. As well as in the previous case, significant fluctuations are noticeable in 2011 and 2012. In the years 2008-2010, so in the period immediately after the outbreak of economic crisis, companies hold more liquid assets and their attitude to liquidity can be considered rather conservative. Over the past two years, selected companies reduced their liquid assets by 7 and 2% respectively. When regarding a quick asset ratio they are still ranging from 0.7 to 1.0 and thus are avoiding an aggressive strategy.

Tab. 8Year-on-year Development of Indices

	2009	2010	2011	2012	2013	2014
Current Assets [%]	1,29	1,03	1,01	1	0,93	0,98
Current Liabilties [%]	1,05	1,64	1,44	1,11	0,68	1,13
Current Financial Assets [%]	1,9	1,08	0,18	1,12	2,36	0,7
Inventories [%]	0,92	1,08	1,45	0,92	0,99	0,84

Development of a cash position ratio almost identically follows the previous two. In general, the value of this indicator should be within a range from 0.2 to 0.5. The most problematic years when regarding a value of cash liquidity are the years 2011 and 2012, due to the 82% downfall in the size of short-term financial assets in 2011 and the subsequent slow recovery.

The Figure 9 depicts a comparison of analysed companies with soft-drink industry in the Czech Republic and shows similar trends. The values of liquidities of monitored companies follow the Czech industry almost identically.

4.3.2 Leverage Ratios

Leverage indicators reflect the structure of equity and debt capital in a company. The costs of corporate capital are fundamental factors affecting business performance had significant impact on its market value. Financial structure has a direct impact on risk premium on liquidity of shares r_{LA} in the Formula (29) and financial structure also influence items of liquidity in calculations. The higher the value of equity the lower the risk premium on liquidity of shares and the lower the cost of equity r_e. Use of debt resources by businesses may be in some cases more favourable than covering all assets only by their own resources. However, it is important to monitor the amount of debt financing in a company, because with their useage it increases the risk of a company that comes from having to repay liabilities from these loan resources. This part employs leverage

ratios defined in the theoretical part, namely formulas (10) and (11), for an assessment of overall indebtedness. The results are summarized in the Figure 10.

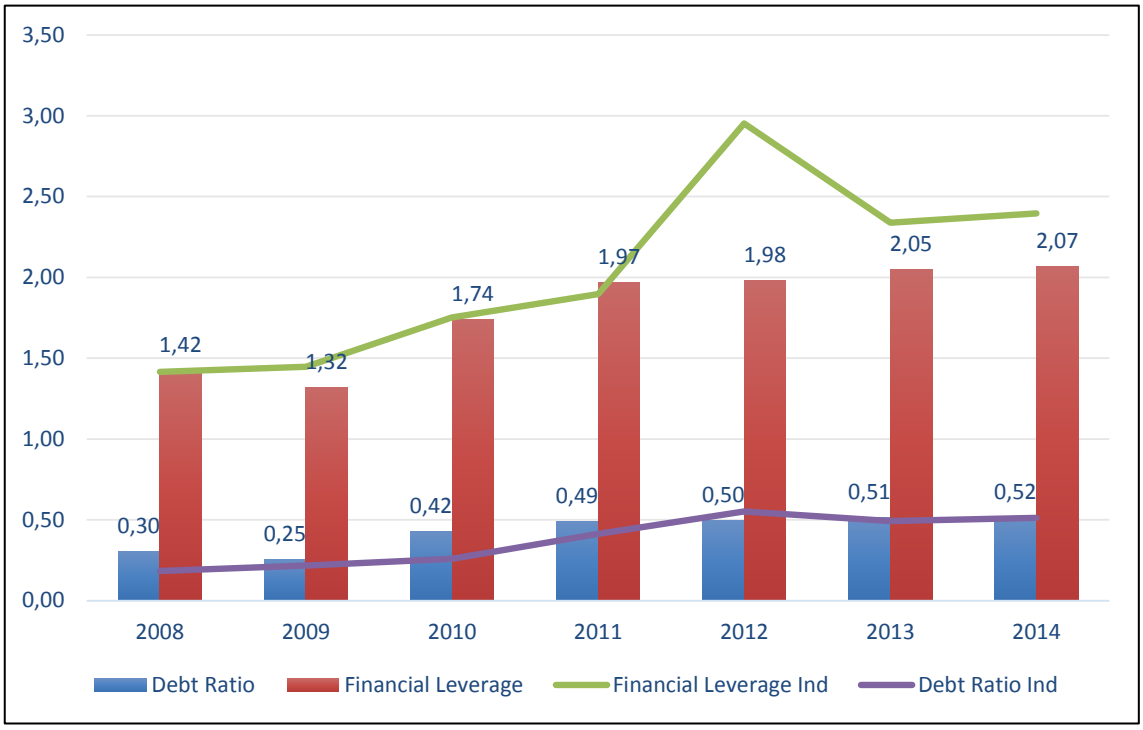

Fig. 10 Leverage ratios

The diagram 10 shows that the total indebtedness represented by debt ratio grows slightly during the period, except of 2009, when its value fell marginally by 5 percentage points. Slight decrease in total debt is caused by different intensity of development of debt resources in comparison to total assets. While total liabilities of companies increased only by 5% in 2008–2009, the value of total assets increased by 25% in this period. Over the reporting period, the overall indebtedness of the sector were ranging from 25 to 52%.

In the years 2011-2014, the value of debt resources was stable ranging from 4% growth in 2012 to 1% decline in 2014. Whereas a development of total assets was nearly identical to the development of equity. Debt ratio value has been ranging between 50-52% since 2012. Assets were growing until 2013, when their volume decreased by 4%. This development is also shown in the Table 9.

Tab. 9Year-on-year Development Indices

	2009	2010	2011	2012	2013	2014
Total Liabilities [%]	1,05	1,11	1,18	1,04	0,99	0,99
Total Assets [%]	1,25	1,26	1,02	1,03	0,96	0,99
Equity [%]	1,35	0,96	0,9	1,02	0,93	0,98

Companies's financial leverage ratio also shows an increasing tendency. Assets comprised 1.42 multiple of equity in 2008 and increased to 2.07 multiple of equity in 2014. Increasing trend of financial leverage ratio is measurable from 2010 and given by year-on-year decline in equity and total assets growth in the period. The largest decline in equity is identified between the years 2009 and 2010, by 39%. It is this particular decline combined with an 26% incraease of total assets that caused the greatest annual growth rate of financial leverage by up to 42 percentage points, which in this case represents a change of 31%.

Figure 10 offers a comparison of the values of total debt and financial leverage with those being achieved in the sector of soft-drinks in Czech Republic. It follows that total debt in the years 2008-2011 is slightly higher when comparing with Czech industry. The largest difference is identified in 2010 reaching 16 percentage points. As well as debt ratio it is also a financial leverage that has been developing similarly.

Based on calculated leverage ratios of the sector it can be said that despite an increasing trend, the situation may be considered as positive and total debt does not amount high values.

4.3.3 Profitability Ratios

Return on core business activities is a key factor for a success of an enterprise and a prerequisite for its growth and sustainable competitiveness in the future. Profitability ratios are used to obtain information about whether and how enterprises are able to generate profits by using their assets employed in its core activities. This work uses three profitability indicators defined in the chapter Theoretical part under the formulas (3), (4). Profitability ratios ROA and ROE have a direct impact on the final value of EVA INFA as they are used in partial calculations. From the formulas (27), (28) identifying the calculation of EVA INFA and Spread INFA it can be stated that the higher the value of ROE, the higher the Spred INFA which in turn increases the economic value added of a company.

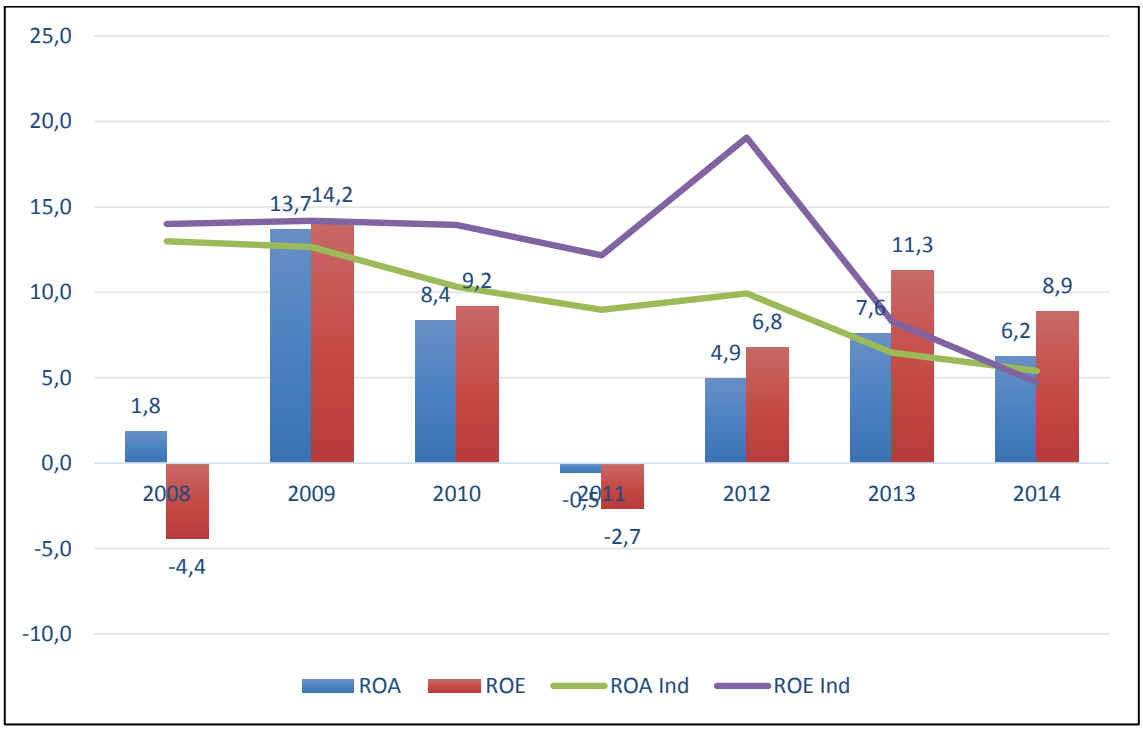

Fig. 11 Profitability ratios [%]

The value of the indicator ROE shows a negative value in the economic crisis year in 2008 which negatively influence the value of EVA INFA. It is followed by sharp increase in 2009 when ROE and ROA reached the highest values (14.2% and 13.7%) for the whole period. Another two-years fall to -0.5% in 2011 and subsequent recovery of ratios to positive figures in 2012 - 2014. The movement of two indicators corresponds to the annual change of values EBIT, EAT and revenues that can be seen in Table 10. The values of Czech industry profitability indicators show more stable but declining trend, however, they never reached negative values.

From the analysis of individual components of these indicators are shown that the value of the indicators is rising in years when EBIT and EAT grow and sales decline, respectively. A decrease in EBIT can be identified as an increase in costs to achieve these sales, which in the years 2011-2012 means a negative value of EBIT, or net income EAT. Thus the index table contains negative figures when a company changed year-on-year negative earnings to positive and vice versa. In general, however, the value of the item grows if an absolute value of its index is within the interval (1, ∞) and decreases when the absolute value of its index is from the interval (0, 1).

Tab. 10 Year-on-year Development Indices

	2009	2010	2011	2012	2013	2014
Sales [%]	1,07	0,93	1,55	1,19	0,99	0,97
EBIT [%]	8,53	0,71	-0,07	-9,34	1,54	0,82
EAT [%]	-3,71	0,61	-0,25	-2,63	1,77	0,8

To sum it up, indicators of profitability can be evaluated positively, because after moderate turbulence in profitability between 2008 and 2011, the situation in a production of mineral water has stabilized. The values of profitability indicators over the past three years say that the monitored companies were able to rise the value of its tied-up capital. Such situation is favourable in terms of generating of EBIT which is a part of scheme of EVA INFA decomposition.

4.3.4 Activity Ratios

This part concerning indicators of activity uses formulas (12), (16), (17) defined in the theoretical part for calculating assets turnover, collection period and credit period. Average values of each year are clearly displayed in the following diagrams, starting with the Figure 12 depicting the assets turnover.

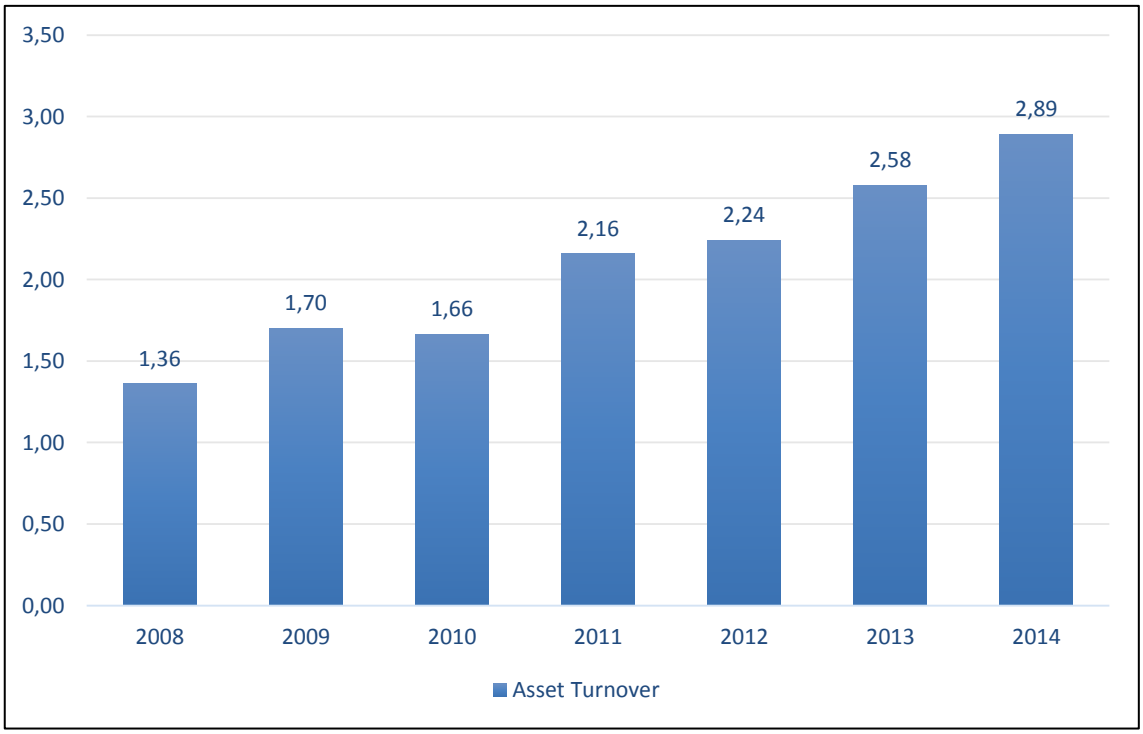

Fig. 12 Asset turnover

Assets turnover development in the market for mineral water producers shows an upward trend reaching its all time low (1.36) in the first reference year. Its maximum value (2.89) of assets turnover reaches the value of 2,89 in 2014. The

indicator state for the analyzed sample can be evaluated positively, as far as the indicator is during the whole period higher than 1, and shows an increasing trend.

From the Figure 13 it can be seen that the average collection period or turnover period of receivables in each year is considerably higher than the creditors payments period or turnover period of liabilities.

In case of monitored companies an average collection period is ranging from 47 to 60 days. Debt management policy is at a lower level compared to the payment discipline of examined companies. Because of the quicker repayment of liabilities to suppliers and later repayment of companies' receivables, companies do not have to always have free cash, which they could use for running their businesses.

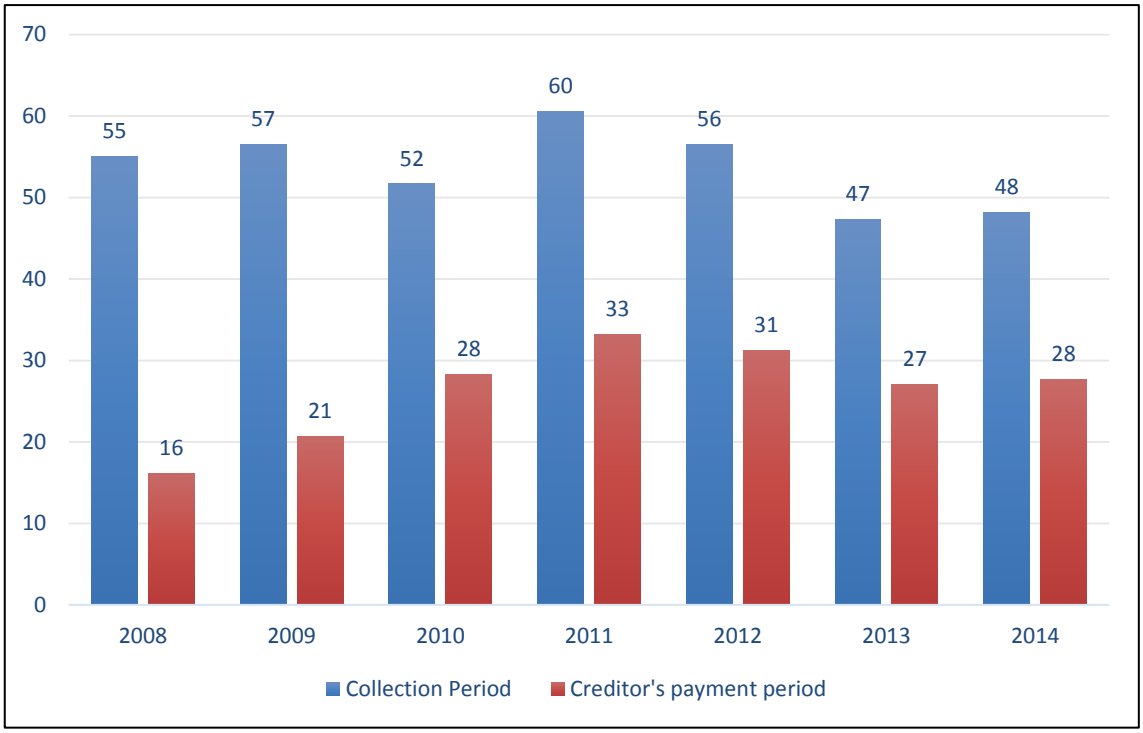

Fig. 13 Activity ratios [days]

Creditor's payment period of examined companies is throughout the whole period acceptable because it does not exceed the values of average collection period. The Figure 13 shows that the values from 2010 ranging from 27 days in 2013 to 33 days in 2011. The shortest average creditor's payment period in the field was recorded in 2008, when companies took an average of 16 days to pay off their commitments to suppliers.

In general, this indicator should reach at least the amount of time of receivables turnover to allow a company to finance its liabilities by income from receivables and does not have to use other debt resources. Because of the fact that an average collection period equals to approximately 1.5 - 3 multiple of creditors

payment period, companies should reconsider whether there are not any implicit costs resulting from this difference.

Above mentioned indicators give an overview of the financial situation of analysed sample of businesses and thus creates a basis for setting a conclusion which results directly from the ratios and other subsequent calculations. Analysis of selected financial ratios is followed by determination of the economic value added.

4.4 Determination of EVA according to INFA

This chapter inquires into a decomposition of key indicators of value creation in selected companies during the period 2008-2014. There are employed formulas for calculating EVA equity defined in the chapter Methods, namely formulas (27), (28), (29) and (30). For each company it is made a comparison between a development of Return on Equity (ROE) and the value of Cost of Capital (r_e). Then, there is done a pyramidal decomposition of ROE and also a decomposition of r_e on individual components involved in its creation.

The tables in this chapter use some Czech abbreviations adopted from INFA methodology:

- A – Assets
- CZ – Profit/loss after tax
- N – Costs
- O – Turnover
- ON – Personal cost
- PH – Value added
- UM – Interest rate
- UZ – Interest charged resources
- V – Revenues
- VK – Equity
- Z – Profit/loss before tax

4.4.1 Slovenské pramene a žriedla, Inc.

By means of the Benchmarking diagnostic system of financial indicators INFA, there were established values of ROE and r_e and simultaneously EVA indicator was determined based on the Formula (29). The specific values are stated in the The Table 11 and the Figure 14 depicts a development of key variable Spread for given company and Slovak and Czech soft-drink production industry.

Tab. 11 EVA calculation

	2008	2009	2010	2011	2012	2013	2014
ROE	8,43	28,41	24,06	0,81	9,04	14,96	2,64
r_e	13,59	11,9	11,82	21	19,63	9,87	9,2
VK	6542389	9256325	8775088	6719183	6761917	7866739	8131592
EVA	-33769367	152861233	107425660	-135691343	-71581631	40012386	-53374646

A negative value of the EVA indicator is determined by a negative value of the variable spread, and vice versa. This means that the value for the owners was created in the years 2009, 2010 and 2013. From the values of EVA stated in the Table 11 and also from the Figure 14 depicting a development of Spread, it can be seen that 2011 was in terms of value creation for the owners, the worst. The value of EVA indicator fell to the negative 135 691 343 CZK. This decrease was caused by two extremes in the values of ROE and re - the lowest return on equity (0.81%) and simultaneously the highest cost of equity (21%) over the monitored period.

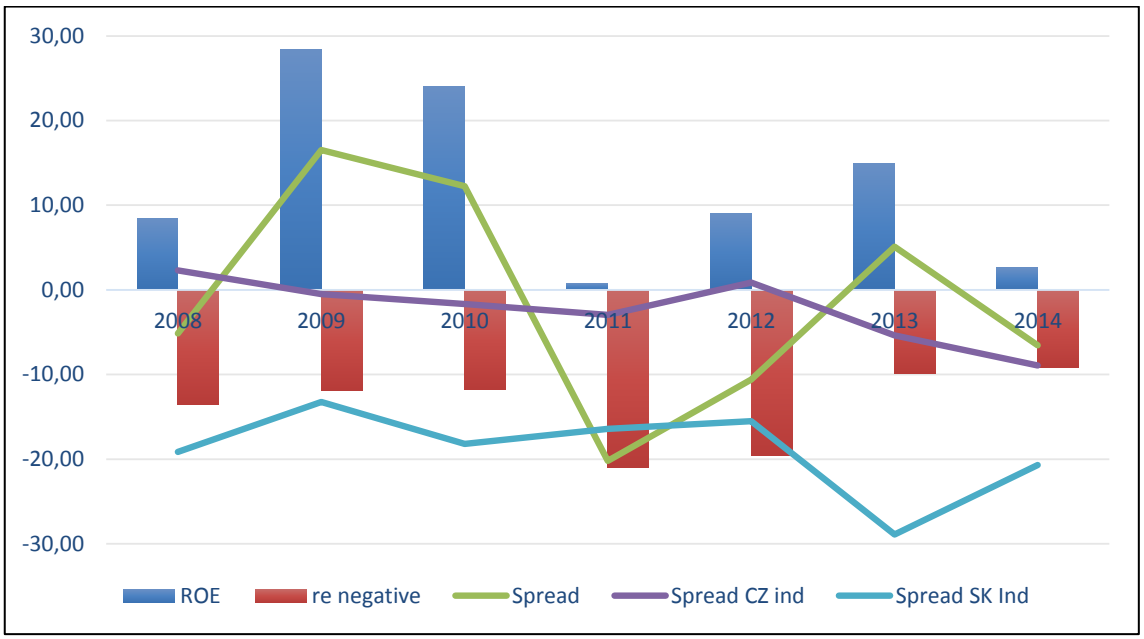

Fig. 14 Spread comparison [%]

To determine effects of individual components on the value of EVA it is necessary to do a pyramidal decomposition of this indicator. This part of diploma thesis focuses specifically on pyramidal decomposition of ROE. Complete results of the pyramidal decomposition are shown in the Table 12.

Tab. 12 ROE decomposition

	2008	2009	2010	2011	2012	2013	2014
ROE [%]	8,43	28,41	24,06	0,81	9,04	14,96	2,64
CZ/Z [%]	60,96	80,92	80,55	77,84	79,96	76,82	70,21
EBIT/A [%]	8,87	27,9	19,19	0,4	4,1	7,54	1,42
EBIT/O [%]	7,24	20,51	18,84	0,23	2,09	4,28	0,91
O/A	1,22	1,36	1,02	1,74	1,96	1,76	1,57
(PH-ON)/O [%]	48,89	51,25	50,16	21,81	23,24	26,75	26,72
(Other V-N)/O [%]	-41,65	-30,74	-31,33	-21,58	-21,15	-22,47	-25,82
PH/O [%]	58,19	58,96	58,64	35,47	36,99	40,84	42,12
ON/O [%]	9,3	7,71	8,48	13,67	13,75	14,09	15,4
VK/A [%]	64,17	79,47	64,23	38,84	36,29	38,7	37,88
UZ/A [%]	64,17	79,47	64,23	38,84	36,29	38,7	37,88
UM [%]	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Year-on-year increase of ROE in 2009, 2012 and 2013 is accompanied by the increase in ROA. The same principle is aplicable even in the opposite direction, when the values have been falling in the years 2010, 2011 and 2014. Simultaneously, it is the indicator of ROA together with the CZ/Z ratio, which shown the

largest annual growth rates. Based on the calculated values, a correlation analysis will be done to elaborate impacts of particular components.

Another important input when calculating EVA equity according to the methodology INFA is Cost of equity or r_e. Table 12 shows the final values of r_e and also the decomposition of risk and risk-free premium.

Tab. 13 Cost of Equity

	2008	2009	2010	2011	2012	2013	2014
r_e [%]	13,59	11,90	11,82	21,00	19,63	9,87	9,20
r_f [%]	4,55	4,67	3,71	3,51	2,31	2,26	1,58
rLS [%]	5,00	5,00	5,00	5,00	5,00	5,00	5,00
rER [%]	4,04	2,23	3,11	3,62	2,32	2,61	2,62
rFI [%]	0,00	0,00	0,00	8,87	10,00	0,00	0,00
rFS [%]	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Essential part of the cost of equity consists of a risk-free rate which is of the same amount for all companies in the same industry. Since 2009, it has a decreasing trend, having decreased from 4.67% to 1.58% in 2014. Similarly as a risk-free premium, also a premium on size of the business r_{LS} is the same for monitored businesses. None of the selected Slovak companies does have equity above 3 billion CZK and therefore the value of r_{LS} is of maximum possible value 5 for all companies in all the periods. Due to the fact that the value of the r_{LS} and r_f are the same for monitored companies, they will not be further examined in this chapter.

According to the INFA methodology, cost of equity in the company Slovenské pramene a žriedla, Inc., reached the highest value in 2011 and 2012 and it was 21% and 19.63%, respectively. Proportionally the largest share consists of risk premium on financial instability amounting 8.87% and 10% which indicates problems with current ratio. To the contrary, the value of the risk premium on fi nancial structure in each period were 0% as EBIT value exceeds interest expenses at least by 3 multiples.

4.4.2 Minerálne vody, Inc.

The same procedure was repeated for the company Minerálne vody, Inc. and calculated figures of ROE, r_e, Spread and EVA are stated in the Table 17 and the Figure 16.

Tab. 14 EVA calculation

	2008	2009	2010	2011	2012	2013	2014
ROE	2,30	4,68	-4,37	-18,14	5,22	10,18	19,57
r_e	11,58	11,90	38,71	38,51	24,11	19,34	15,20
VK	6487287	6527331	5990837	4876264	5110754	5402080	6191059
EVA	-60195483	-47139739	-258072800	-276242127	-96564679	-49466427	27057803

From the values of EVA and also from the figure below it can be said that the evaluated indicators were decreasing from the beginning of the monitored period until 2011, when economic value added reached its 7-year minimum of -276 242 127 CZK. From that moment, the company has been experiencing growth of return on assets and a decrease in cost, which resulted in lowering their difference. In 2014, the value of spread gets for the first time to positive figures.

Fig. 15 Spread comparison [%]

The Table 18 is a record of percentage amounts of each item in pyramid decomposition of ROE.

Tab. 15 ROE decomposition

	2008	2009	2010	2011	2012	2013	2014
ROE [%]	2,30	4,68	-4,37	-18,14	5,22	10,18	19,57
CZ/Z [%]	74,38	80,81	166,07	106,93	55,99	85,10	86,12
EBIT/A [%]	2,71	5,04	-1,30	-7,51	4,89	7,42	16,75
EBIT/O [%]	2,03	4,02	-1,61	-8,11	4,08	5,38	11,36
O/A	1,33	1,25	0,81	0,93	1,20	1,38	1,47
(PH-ON)/O [%]	22,74	26,31	23,04	18,80	18,02	27,83	35,87
(Other V-N)/O [%]	-20,71	-22,29	-24,65	-26,91	-13,94	-22,46	-24,51
PH/O [%]	33,29	37,15	33,70	29,21	27,66	36,65	44,26
ON/O [%]	10,54	10,84	10,67	10,42	9,64	8,82	8,39

VK/A [%]	87,55	87,09	49,45	44,25	52,45	62,01	73,69
UZ/A [%]	87,55	87,09	84,89	70,82	71,21	73,33	79,56
UM [%]	0,00	0,00	0,24	0,20	0,19	0,18	0,03

The most significant annual increase is identified between 2011 and 2012, when the value of the previous year ROE rose from -18.14% to 5.22%. In following years, the return on equity kept rising. In 2013 it was 10.18% and in 2014 to 19.57%. The values given in the table will will be further examined in next chapter and will be used as input data for correlation analysis.

Table 19 shows the final values of r_e and its substantial parts r_f and 4 components of risk premiums.

Tab. 16 Cost of Equity

	2008	2009	2010	2011	2012	2013	2014
r_e [%]	11,58	11,90	38,71	38,51	24,11	19,34	15,20
r_f [%]	4,55	4,67	3,71	3,51	2,31	2,26	1,58
rLS [%]	5,00	5,00	5,00	5,00	5,00	5,00	5,00
rER [%]	2,03	2,23	10,00	10,00	6,80	11,71	8,62
rFI [%]	0,00	0,00	10,00	10,00	10,00	0,37	0,00
rFS [%]	0,00	0,00	10,00	10,00	0,00	0,00	0,00

For the company Minerálne vody, Inc. cost of equity ranging between 11.58% and 38.71%. From this perspective, the critical years are considered to be 2010 and 2011, when the value of three risk premiums reached a maximum of 10%. The items r_{FS} and r_{FI} were completely eliminated by the company's management in following years and it can be perceived as a major reason of downward trend of the cost of equity in 2012-2014.

4.4.3 Trenčianske minerálne vody, Ltd.

The procedure applied on the company Slovenské pramene a žriedla, Ltd. was executed for each company from the selected sample. The specific values of ROE, r_e and Spread are stated in the Table 14 and the Figure 15 depicts a development trend of key variable Spread.

Tab. 17 EVA calculation

	2008	2009	2010	2011	2012	2013	2014
ROE	-32,98	0,88	0,38	7,24	6,09	7,86	5,98
r_e	19,55	19,95	11	11	16,67	9,87	10,75
VK	4771626	4814209	4832472	5320115	5664853	5384552	4765412
EVA	-250631088	-91783470	-51330892	-20016965	-59959500	-10802128	-22722279

The value of the EVA indicator co-responds to the development level of Spread in all the periods as they both remained in negative figures. The enterprise has

not been creating an economic value added in the seven-year reporting period. From the Figure 15 it is possible to see that the year 2008 was the worst in terms of the Spread indicator as ROE recorded a decline to -32.98% and cost of equity accounted to 19.55%. Between the years 2009-2014, the situation has improved markedly as the value of ROE rose to 7.86% in 2013 and compared to 2008 cost of equity decreased approximately by half to 9.87%.

Fig. 16 Spread comparison [%]

To determine the effects of individual components on the value of EVA, there is a need to do a pyramidal decomposition of this indicator. This part of the thesis focuses specifically on pyramidal decomposition of ROE. Complete results of the pyramid decomposition are shown in Table 15.

Tab. 18 ROE decomposition

	2008	2009	2010	2011	2012	2013	2014
ROE [%]	-32,98%	0,88%	0,38%	7,24%	6,09%	7,86%	5,98%
CZ/Z [%]	99,97%	137,13%	35,22%	96,31%	94,02%	96,64%	75,76%
EBIT/A [%]	-29,77%	0,43%	1,00%	7,04%	5,36%	7,16%	6,95%
EBIT/O [%]	-30,65%	0,73%	1,18%	9,67%	8,64%	11,11%	9,81%
O/A	0,97	0,60	0,85	0,73	0,62	0,64	0,71
(PH-ON)/O [%]	47,71%	51,03%	46,85%	41,83%	47,35%	47,69%	47,36%
(Other V-N)/O [%]	-78,35%	-50,30%	-45,67%	-32,17%	-38,71%	-36,58%	-37,55%
PH/O [%]	58,20%	64,12%	60,69%	56,37%	61,66%	60,84%	61,22%

ON/O [%]	10,50%	13,09%	13,84%	14,53%	14,31%	13,15%	13,86%
VK/A [%]	90,27%	67,07%	93,02%	93,75%	82,76%	88,00%	88,06%
UZ/A [%]	90,27%	67,07%	93,02%	93,75%	82,76%	88,00%	88,06%
UM [%]	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

The most significant annual changes were recorded between 2008 and 2009, when the value of ROE increased by 33.86%. In following years, the return on equity fluctuated in the range of 0-8%. The values given in the table will serve as input data for correlation analysis to determine individual effects on indicator ROE.

Significant input when calculating EVA according to INFA is cost of equity (r_e). The Table 16 shows the final values of r_e and also values of risk-free premium and a decomposition of risk premium.

Tab. 19 Cost of Equity

	2008	2009	2010	2011	2012	2013	2014
r_e [%]	19,55	19,95	11,00	11,00	16,67	9,87	10,75
r_f [%]	4,55	4,67	3,71	3,51	2,31	2,26	1,58
rLS [%]	5,00	5,00	5,00	5,00	5,00	5,00	5,00
rER [%]	0,00	6,49	2,73	2,49	9,36	2,61	4,17
rFI [%]	0,00	1,82	0,00	0,00	0,00	0,00	0,00
rFS [%]	10,00	1,97	10,00	0,00	0,00	0,00	0,00

Cost of equity reached the highest levels in the years right after the outbreak of global economic crisis. In 2008 it was 19.55% and 19.95% in 2009. However, seemingly similar values of cost have different origins. While in 2008 the largest part consists of r_{FS} component (maximum 10%) – resulting from problematic financial structure, in 2009 the premium on enterpreneurial risk increased to 6.49%. In 2014, the company managed to reduce r_{FI} and r_{FS} values to a minimum and due to a low level of risk-free rate, the amount of the cost of equity reached the level of 10.75%.

4.4.4 Limo Špes, Ltd.

The Table 20 and the Figure 17 show development of EVA indicator and its componenents throughout the monitored period. Because of non-availibility of data for the year 2008, it has been excluded from the calculations.

Tab. 20 EVA calculation

	2008	2009	2010	2011	2012	2013	2014
ROE	n/a	7,11	-4,08	-3,82	0,27	3,41	5,13
r_e	n/a	26,44	41,53	41,37	32,89	28,43	28,07
VK	n/a	765204	537220	512250	513615	531743	560526
EVA	n/a	-14791794	-24502247	-23150383	-16756197	-13304653	-12855765

Large negative value of the variable Spread determines the large negative value of EVA. Negative values of Spread originate from high opportunity cost of equity ranging from 26% to 42%. Consequence of negative Spread is that the economic value for the owner was not created in any of the monitored periods. From the values of EVA it can be seen slowly increasing tendency, however persistent high levels of r_e pushing Spread values into negative fugures.

Fig. 17 Spread comparison [%]

Table 21 shows percentage values of particular items of pyramidal decomposition of ROE.

Tab. 21 ROE decomposition

	2008	2009	2010	2011	2012	2013	2014
ROE [%]	n/a	7,11	-4,08	-3,82	0,27	3,41	5,13
CZ/Z [%]	n/a	99,65	82,47	119,36	11,36	137,05	77,39
EBIT/A [%]	n/a	4,42	-2,43	-1,45	1,07	1,17	3,33
EBIT/O [%]	n/a	2,43	-1,41	-0,76	0,55	0,60	1,51

O/A	n/a	1,82	1,72	1,90	1,95	1,95	2,20
(PH-ON)/O [%]	n/a	25,67	30,64	30,64	29,54	33,65	33,63
(Other V-N)/O [%]	n/a	-23,25	-32,05	-31,40	-28,99	-33,05	-32,12
PH/O [%]	n/a	30,02	34,46	33,78	33,12	36,88	36,43
ON/O [%]	n/a	4,35	3,82	3,14	3,58	3,23	2,80
VK/A [%]	n/a	62,00	49,17	45,19	45,68	46,91	50,15
UZ/A [%]	n/a	79,42	75,08	69,44	69,73	69,83	74,12
UM [%]	n/a	-0,21	0,14	-0,15	0,06	0,12	0,24

The value of the return on equity in the monitored period oscillate around 0% with a maximum of 7.11% in 2009 and a minimum of -4.08% calculated for 2010. Detailed impacts of individual components of ROE decomposition will be analysed in the part dealing with correlation analysis.
The Table 22 shows the final values of r_e and values of its decomposition to risk and risk-free premium.

Tab. 22 Cost of Equity

	2008	2009	2010	2011	2012	2013	2014
r_e [%]	n/a	26,44	38,71	38,51	32,89	28,43	28,07
r_f [%]	4,55	4,67	3,71	3,51	2,31	2,26	1,58
rLS [%]	n/a	5,00	5,00	5,00	5,00	5,00	5,00
rER [%]	n/a	7,59	10,00	10,00	5,58	2,83	11,49
rFI [%]	n/a	9,18	10,00	10,00	10,00	10,00	10,00
rFS [%]	n/a	0,00	10,00	10,00	10,00	8,34	0,00

Average cost of equity in the company Limo Špes, Ltd. is the highest compared to other monitored companies in the industry. In 2010 and 2011, the cost of equity reaches the maximum possible values from the range. This means that in these years the company did not reach the satisfactory liquidity levels, financial structure or values of return on assets, which is part of the calculation of the risk-premium on entrepreneurial risk.

4.4.5 Kláštorná, Ltd.

The Table 23 and the Figure 18 show development of ROE, r_e and EVA throughout the monitored period.

Tab. 23 EVA calculation

	2008	2009	2010	2011	2012	2013	2014
ROE	2,04	0,19	0,12	0,12	-1,46	-80,18	-39,11
r_e	26,07	28,08	34,79	33,34	32,81	37,26	36,58
VK	2241685	6680881	6697839	6706128	6609778	3668417	2636974
EVA	-53859226	-186347438	-232208519	-222753408	-226501916	-430821317	-199604909

The results of EVA indicator in given period show negative values. The enterprise has not been creating a value for the owners in the seven-year reporting period. The most critical year in terms of Spread indicator was in 2013, when the impact of high capital costs was compounded by a negative profitability of the equity. Spread value fell to the level of -117.44% at that time.

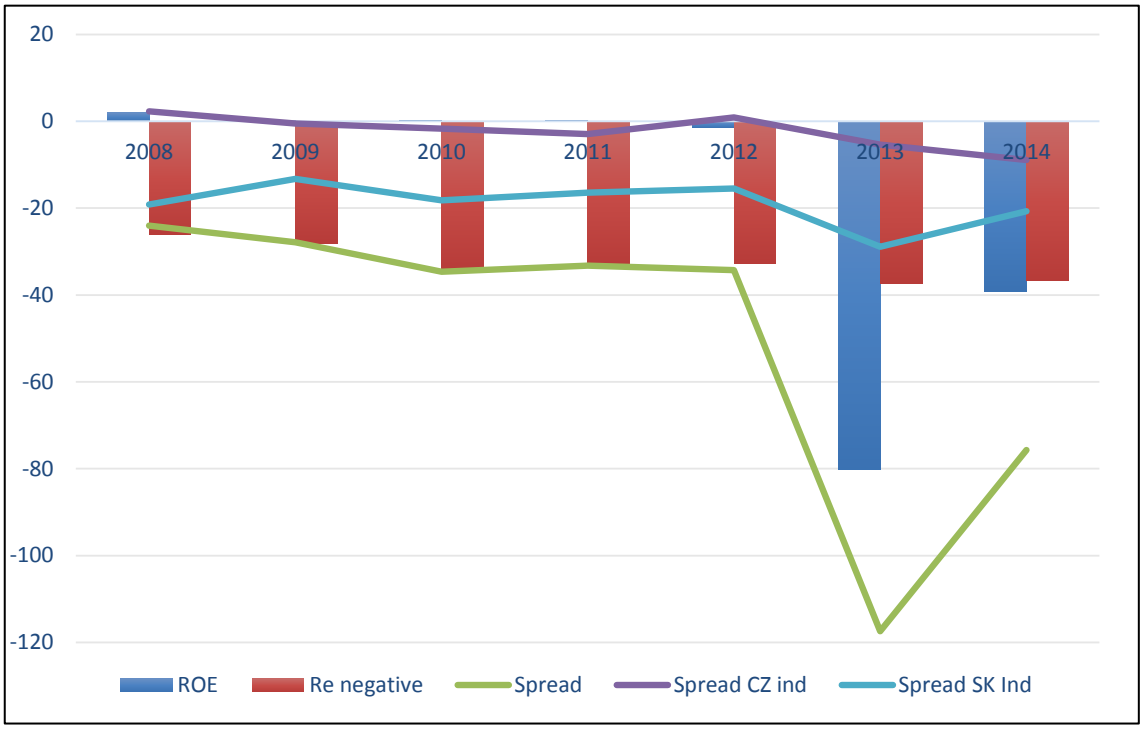

Fig. 18 Spread comparison [%]

The Table 24 shows a pyramidal decomposition of ROE and indicates a proportion of the individual components in percentages.

Tab. 24 ROE decomposition

	2008	2009	2010	2011	2012	2013	2014
ROE [%]	2,04	0,19	0,12	0,12	-1,46	-80,18	-39,11
CZ/Z [%]	100,00	98,28	100,00	100,00	100,01	100,00	100,09
EBIT/A [%]	3,16	0,96	1,14	1,87	0,35	-27,11	-10,65
EBIT/O [%]	4,84	2,63	1,87	5,80	1,08	-129,55	-932,95
O/A	0,65	0,36	0,61	0,32	0,32	0,21	0,01
(PH-ON)/O [%]	1,08	39,32	8,31	25,72	28,10	13,46	-242,45
(Other V-N)/O [%]	3,76	-36,69	-6,45	-19,92	-27,02	-143,01	-690,50
PH/O [%]	10,30	49,27	11,72	34,31	38,51	31,71	4,01
ON/O [%]	9,22	9,95	3,41	8,59	10,41	18,25	246,46
VK/A [%]	41,94	70,39	45,93	54,23	52,75	35,01	27,26

UZ/A [%]	68,24	83,90	77,37	71,39	69,49	61,73	57,22
UM [%]	0,09	0,16	0,13	0,11	0,07	0,14	0,39

The first four years the company Kláštorná, Ltd. reported a low but positive return on assets. Between the years 2008-2011 the value of ROE is ranging in the interval of 2%. The year 2012 was the first year when the indicator ROE get into negative numbers. The falloff continued in 2013, when the return on assets fell below -80%. The values given in the table will be used as input data for correlation analysis in the next chapter.

Significant variable when calculating EVA according to INFA is r_e. The Table 25 shows the values of variable r_e and also its substantial components used in its calculation.

Tab. 25 Cost of Equity

	2008	2009	2010	2011	2012	2013	2014
r_e [%]	26,07	28,08	30,79	33,34	32,81	37,26	36,58
r_f [%]	4,55	4,67	3,71	3,51	2,31	2,26	1,58
rLS [%]	5,00	5,00	5,00	5,00	5,00	5,00	5,00
rER [%]	0,23	8,41	9,59	4,83	5,50	10,00	10,00
rFI [%]	6,29	0,00	2,49	10,00	10,00	10,00	10,00
rFS [%]	10,00	10,00	10,00	10,00	10,00	10,00	10,00

Similarly as the company Limo Špes, Ltd., also the company Kláštorná, Ltd., reports high risk premiums when calculating the total cost of equity. It results from the fact that in last two years costs of equity amounted to maximum possible values.

4.5 Statistical verification

The main objective of this part is to verify statistical significance of chosen explanatory variables on the value of INFA Spread. To satisfy this objective, is used two-way analysis of variance table.

Dependent variable (Y) – also called explained variable or regressand. In our model, role of regressand is fulfilled by the values of INFA Spread of Slovak and Czech companies working in mineral water production industry in the range of years 2008 - 2014.

Independent variables (X_i) – also called explanatory variables or regressors. Two main regressors have been chosen for the needs of this model. The first one is represented by companies sorted out according to their ability to create value from INFA methodology. There are five groups in this model:

- CZTH – companies with $ROE > r_e$
- CZRF – companies with $r_f < ROE \leq r_e$
- CZZI – companies with $o < ROE < r_f$
- CZZT – companies with $ROE < o$
- SVK – companies under review

As the second explanatory variables were chosen 5 basic components from pyramidal decomposition of ROE, expressed also in the Formula 30:

- Return on assets (EBIT/A) is an indicator of how profitable companies are relative to their assets.
- Average tax rate (CZ/Z) which stands for the ratio of profit or loss after tax devided by profit or loss before tax. Put it differently, it represents average tax rate for companies operating in a given industry.
- Shareholder equity ratio (VK/A) determines how much shareholders receive in an event of a company liquidation.
- Interest charged resources devided by total assets (UZ/A) represents a ratio of all chargeable debt resources and total assets.
- Interest rate (UM) is an amount charged by a lender for the useage of assets, usually expressed as a percentage of principal.

To evaluate statistical significane it is necessary to determine hypothesis H0 and H1. H0 assumes that chosen effects are not statistically significant which means that those factors do not have a major impact on a value of INFA Spread. H1 represents the opposite, so that the factors influence the value of INFA Spread signifficantly.

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0,334241	1	0,334241	28,50709	0,000010
Observations in CZE and SVK during 2008 - 2014	0,719236	4	0,179809	15,33573	0,000001
Comparison of CZ/Z with the average value in the industry	0,052162	1	0,052162	4,44882	0,043677
Error	0,340021	29	0,011725		

Fig. 19 Results of ANOVA_CZ/Z

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0,217037	1	0,217037	16,35199	0,000355
Observations in CZE and SVK during 2008 - 2014	0,398379	4	0,099595	7,50366	0,000281
Comparison of EBIT/A with the average value in the industry	0,007270	1	0,007270	0,54775	0,465190
Error	0,384912	29	0,013273		

Fig. 20 Results of ANOVA_EBIT/A

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0,261533	1	0,261533	20,17466	0,000104
Observations in CZE and SVK during 2008 - 2014	0,833094	4	0,208274	16,06622	0,000000
Comparison of UZ/A with the average value in the industry	0,016242	1	0,016242	1,25293	0,272179
Error	0,375940	29	0,012963		

Fig. 21 Results of ANOVA_UZ/A

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0,308760	1	0,308760	22,90302	0,000046
Observations in CZE and SVK during 2008 - 2014	0,750101	4	0,187525	13,91012	0,000002
Comparison of VK/A with the average value in the industry	0,001227	1	0,001227	0,09104	0,765006
Error	0,390955	29	0,013481		

Fig. 22 Results of ANOVA_VK/A

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0,298655	1	0,298655	22,47996	0,000052
Observations in CZE and SVK during 2008 - 2014	0,782057	4	0,195514	14,71649	0,000001
Comparison of UM with the average value in the industry	0,006906	1	0,006906	0,51983	0,476688
Error	0,385276	29	0,013285		

Fig. 23 Results of ANOVA_UM

As it can be seen in Figures 19-23 the values of *„p“* for groups according to companies‘ financial performance oscillate closely around zero. However, when it comes to evaluating statistical significance of particular de-components of ROE, figures show that there is only one *„p“* value lower than 0,05. H0 hypothesis, about statistically non-significant variables can be rejected on a 5% significance level $\alpha = 0{,}05$ only for a component of CZ/Z captured in Figure 19.

It can be concluded that it is an ability to create value, be profitable or having a negative economic profit, as well as, average tax rate (CZ/Z), that have significant impact on a value of ROE and INFA Spread and so do they on overal economic performance of companies.

4.5.1 Impact of economic crisis on financial performance

This part concerns with an impact of global economic crisis on a financial performance of mineral water producers in Slovakia. To be able to answer the second research question comparing current financial performance of mineral water producers with financial performance during global economic crisis, regression analysis has been done.

There is a plenty of exogenous and endogenous factors having a different influence on companies‘ sales – explaining variable. There are two explanatory variables used in this analysis, more specifically Gross Domestic Product (GDP) and consumer expenditures (Cons_Exp) in a range of years 2001-2015.

Estimation of model parameters

In case of this model it is selected a linear form for both independent variables. A final function of the model looks as follows:

$$Sales_{Ind} = f(GDP, Cons_{Exp})$$

Model 2: OLS, using observations 1-15
Dependent variable: Sales_Ind

	coefficient	std. error	t-ratio	p-value	
const	-84,1558	29,8334	-2,821	0,0478	**
Cons_Exp	2,13058	0,607421	3,508	0,0247	**
GDP	0,00191410	0,000432880	4,422	0,0115	**

Mean dependent var	45,14683	S.D. dependent var	10,97706
Sum squared resid	56,75928	S.E. of regression	3,766938
R-squared	0,921492	Adjusted R-squared	0,882238
F(2, 12)	23,47512	P-value(F)	0,006164
Log-likelihood	-17,25775	Akaike criterion	40,51550
Schwarz criterion	40,35323	Hannan-Quinn	38,50988

Fig. 24 OLS, using observations 1-15, Sales_Ind=f (GDP, Cons_Exp)

After making an estimation of coefficients the model looks as follows:

$$Sales_{Ind} = -84,1558 + 2,13058\ Cons_{Exp} + 0,001914\ GDP$$

The value of adjusted coefficient of correlation R^2_{adj} is 0.882 which indicates that independent variables explain 88,2 % of variability of dependent variable. For an assessment of statistical significance of particular regression coefficients we used p-value of t-test.

To be able to test an overal statistical significance of the model it is used F-test. From the Figure 21 it can be seen that a value of F-test is 23.512, with P-value equal to 0.006164. P-value is smaller than 0.05, therefore null hypothesis

about statistical insignificance can be rejected, and model is considered as statistically significant at 5% significance level.

Classical assumptions
For classical linear regression models, following assumptions must be satisfied:

- Regression model is linear in parameters; it is correctly specified and it has an additive error term.
- Expected value of the error term is zero.
- All explanatory variables are uncorrelated with the error term.
- Error terms are uncorrelated = No serial correlation.
- Error term has constant variance = No heteroskedasticity.
- No explanatory variable is a perfect linear combination of other explanatory variable(s) = No perfect multicollinearity.
- Error term is normally distributed.

Lagrange Multiplier (LM) test of linearity
LM test of linearity detects incorrect function form of the regressors in the model of linear regression. Test hypotheses:

- H0: model is linear (function form is fine)
- H1: model is non-linear (function form is wrong)

Non-linearity test (squares)
Test statistic: $TR^2 = 3{,}53819$ with p-value = $P(Chi - sqaure\ (2) > 3{,}53819) = 0{,}170487$

The p-value for square test is higher than 5% significance level, which implies that H0 might not be rejected and the linear function form is correct.

Multicollinearity
Multicollinearity is a linear dependency of more than two explanatory variables. In this model is multicollinearity tested by method of High Variance Inflation Factors (VIFs), which is a method of detecting the severity of multicollinearity by looking at the extent to which a given regressor can be explained by all the other explanatory variables in the equation. The minimum possible value for each explanatory variable of VIFs calculation is equal to 1. The problem of collinearity may be indicated for value larger than 10.

- Cons_Exp 1,318
- GDP 1,119

All variables have minimum value of VIFs larger than 1 and also smaller than 10, it means that the requirement of no perfect multicollinearity is fulfilled.

Heteroscedasticity
Heteroscedasticity is a violation of the 5th classical assumption. It means that variability of an error term distribution changes for individual observations or

groups of observations. There is a requirement of homoscedasticity of the error term to fulfil the assumption Test hypotheses:

- H0: error term is homoscedastic
- H1: error term is heteroscedastic

White's test for heteroscedasticity
Test statistic: $TR^2 = 3{,}994565$ with p-value $= P(Chi - square > 3{,}994565) = 0{,}550199$

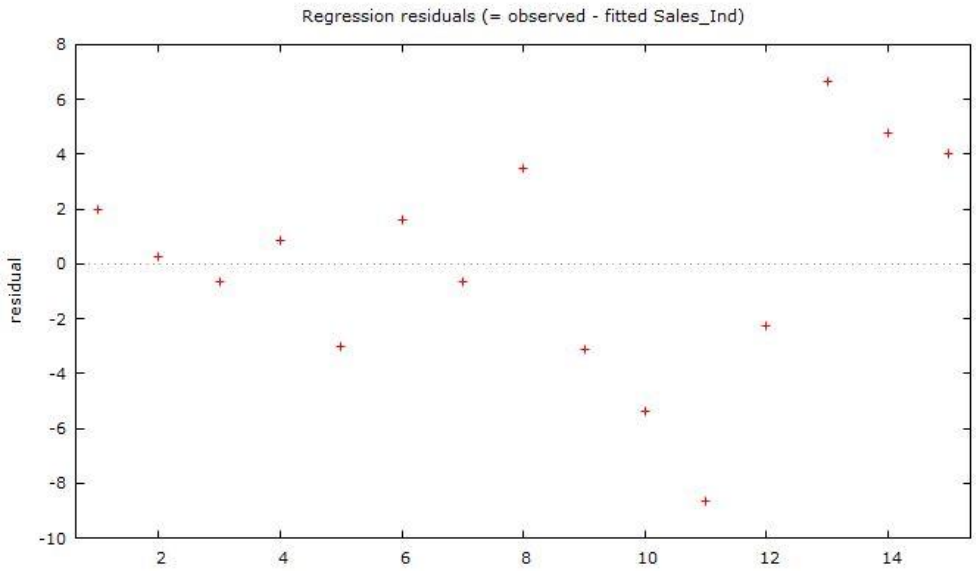

Fig. 25 Analysis of residuals

From aforementioned it can be concluded, that hypothesis H0 should not be rejected, therefore is valid, which means there is a homoscedasticity of error term in this model.

Normality

There are plenty of ways how to verify normality of an error term. The testing consists of comparing histogram with a normal Gaussian curve. To be able to test a normality of an error term in this part, Chi-square goodness of fit test is used. Test hypotheses:

- H0: error term has normal distribution
- H1: error term hasn't normal distribution

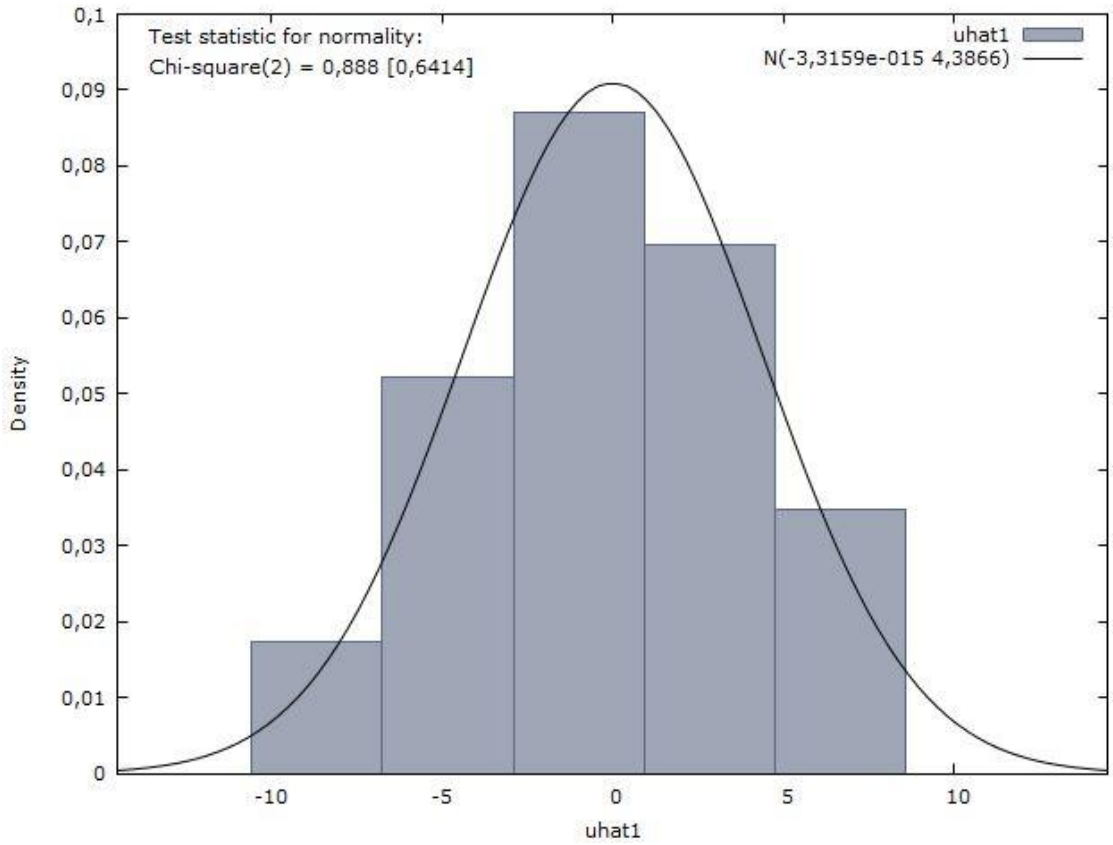

Fig. 26 Normality of an error term

Graphical interpretation of normality of an error term depicted in Figure 22 implies that the model has normal distribution and it is also shown in p-value (0,6414) that is higher than 5% significance level. It follows that the error term has normal distribution.

The main objective of this chapter was to create an econometric model that explains influences of explanatory variables on aggregate sales of mineral water producers in Slovakia. The model consists of 2 explanatory variables that explain 88,2% of sales‘ variability. The results of statistical significance show that there is a strong positive correaltion between aggregate sales of given industry and level of GDP as well as consumption expenditures. The model fulfills all assumptions of classical linear regression model and has the following form:

$$Sales_{Ind} = -84{,}1558 + 2{,}13058\ Cons_{Exp} + 0{,}001914\ GDP$$

Then the model is interpreted as follows: If consumption expenditures increase by 1 mil. € then sales in the industry will rise by 2.13 mil. €. Simultaneously, when GDP rises by 1 mld. €, sales in the industry of mineral water production will increase by 2 mil. €.

To sum it up, there is a strong positive correlation between amount of sales of mineral water and level of GDP or consumption expenditures, respectively.

From aforementioned can be concluded that it is expected a decline in sales during the periods of economic recession. As it is proven by above performed analysis, sales are expected to rise in periods of economic expansion.

Discussion

The diploma thesis is focused on analysing the mineral water production industry and identification of key drivers influencing the competitiveness of non-alcoholic beverages producers. Main emphasis is put on financial performance key indicators and possibilities for their improvement in companies specialising in production of non-alcoholic drinks – mineral water, specifically. Diploma thesis aimed to answer two research questions. The first one elaborated the identification of key drivers and their impact on analysed companies and the second one examines the current financial performance of mineral water producers when compared to the recent global economic crisis.

The business activities of companies producing soft-drinks are, as well as companies from every other industry, influenced by political and legal, economic, social and technological factors of an external environment. These are interlinked and relate one to each other.

Based on the strategic analysis, there were identified following foundings. Sector analysis has revealed rather stable political environment of bureaucratic character with regularly changing rigt and left-wing government, which may lead to frequent but unpredictable changes in legislation. Another potential weakness is the fact that the Slovak Republic occupies 54th position out of 175 countries in the ranking of perceived corruption by Transparency International, when only five countries of the European Union took lower-ranked positions.

In the part examining the economic trend, it was observed a slight decrease in a consumption of mineral water. Slovak average annual consumption amounts to 63 liters of bottled water per capita, while the average among the European Union countries population is 105 liters per capita. At the same time, it should be added that ageing of a population may cause significant problems. A decline of total population and changes in demographic structure in Slovakia, resulting from future projections of European Commission, may have negative consequences on elaborated market.

The positive feature of the external environment is mainly a change in lifestyle and eating habits of Slovak population in recent years. Possibilities for further development result from under-utilized potential of sources of mineral water in Slovakia and also from existing export potential to the European Union countries. In the near future they are likely to be important factors influencing the competitiveness of all-round activities performed by the industry. One of the most recent issues regarding the industry is an environmental question examining PET packaging and its recycling.

Another important part contains a sector analysis which is performed by employing Porter's five competitive forces model. This analysis pointed out a considerable competition in the Slovak market. The Slovak mineral water market currently offeres 25 different brands of mineral water produced by 12 companies. However, these altogether with the high initial cost of production reduce

the possibility of entry of new competitors to the market and simultaneously decreases attractiveness of the business of producing of mineral water.

In the empirical part dedicated to financial analysis, there were characterized the financial indicators of economic performance of Slovak industry consisting from five selected companies. These values were compared to respective industry in the Czech Republic.

Based on the analysis of liquidity ratios, it is not necessary for companies to make rapid changes in terms of liquidity. Most of the time, three indicators are kept at an acceptable level and simultanously corresponds to the Czech industry. Similar development was observed when evaluating the value of the debt ratios. Likewise, the values of leverage ratios correspond to the values in the Czech industry and it can be said that the situation of Slovak mineral water industry may be considered as positive and total debt does not amount considerably higher values than are values calculated for the Czech industry. The only area of obvious deviation is the area of profitability ratios in 2011 and 2012, respectively.

However, detailed look at individual companies show the real situation of companies operating in the sector. With the exception of the largest company on the market - the Slovenské pramene a žriedla, Inc. all enterprises achieve largely negative values regarding the indicator INFA spread and economic value added. In all cases, these negative values have been caused by disproportionately high cost of equity when regarding the nature of given industry. Daniel Remeš (2009) says in its publication that the economic crisis may appear in various spheres of business performance.

Significant decrease in demand for goods leads to a reduction in the volume of orders, and simultaneously increases a downward pressure on selling prices. Both factors ultimately lead to a decrease in amount of sales. In the chapter 4.5.1. there was constructed an econometric model that confirmed a strong correlation between level of GDP or consumption expenditures and the amount of sales in soft-drinks production industry. The model also meets the basic requirements for calssical linear regression model.

Moreover, according to Remeš (2009) one of the positive factors within the food industry during the crisis may be a decline in input prices. Likewise, his research confirmed decrease in prices of energy. This may lead to a reduction in production costs. This effect has a positive impact on a financial performance of each company, but with respect to low material and raw material consumption in production of mineral water, this fact is at least disputable.

However, what is undisputable is that a crisis rapidly affects revenues and expenditures. Decrease in production volume reduces yields, while some costs are not declining as fast as revenues. These changes negatively affect profits. This statement was also confirmed in the chapter 4.3 of this thesis, where you can see a slump in values earnings before tax and interest (EBIT) and earnings after tax (EAT) in the years of 2009-2012. The Slovak market of production of mineral water shows that the crisis has a significant impact on the amount of sales, and thereby on the value of operating profit for 3-4 years. The subsequent

modest increase in sales as well as in total revenues can be explained by an advancing recovery of the Slovak economy after 2012 and partly also by a change in consumer behavior. From PEST analysis is clear that there is a trend towards a healthy lifestyle and Slovak consumer has started oriented himself more to higher quality and healthier food and drinks.

Every crisis puts great demands on enterprises when regarding a patience for receivables. If the company has not created sufficient reserves from prior periods, it may experience insolvency or bankruptcy very soon. Collection period gets longer, payments are delayed. Possible sources of funding are significantly reduced. Banks were reluctant to lend, while trying to reduce lending in order to reduce risk. In connection with the aforementioned, overdue payables begin to grow and threaten problem in repaying the loans. (Remeš, 2009) It increases leverage ratio significantly with the assistance of declining share of equity due to the decline in profit growth and foreign sources - mainly trade payables.

When comparing the ratio values of Slovak producers with the Czech market, it can be concluded that they were developing almost identically during the years of 2008-2014. The sector in Slovak Republic, as well as in the Czech Republic were achieving the worst results in the "post-crisis“ years 2009-2012.

The part of the first research question focuses on identification of main factors influencing competitiveness of selected companies in the industry. Because of the competitiveness of businesses is, to a large extent, affected by the ability of individual companies to create value, the diploma thesis also examines the impact of the individual components on the value of economic value added (EVA). One of the key components of the calculation of EVA equity is INFA Spread. According to the formula (27) INFA Spread is calculated as the difference between ROE and r_e.

The chapter 4.4 shows a pyramidal decomposition of ROE for every company. The chapter 4.5 provides a statistical verification and examines statistical significance of particular de-components. When it comes to evaluating statistical significance of particular de-components of ROE, figures show that it is an ability to create value, be profitable or having a negative economic profit, as well as, it is an average tax rate (CZ/Z), that have significant influence on a value of ROE and INFA Spread and so do they on overal economic performance of companies. According to the gained results of statistical verification, other variables used from ROE decomposition seems to be less significant in creating a value of INFA spread. However, Čierna and Rábek (2012) claims the opposite at least in one de-component – return on assets. To put it differently it is a de-component EBIT/A. Results of statistical significance in this diploma thesis show that for non-alcoholic beverage industry in Slovakia it could be vital to have a right-wing government elected to lower the overal tax burden. This result may be caused by the fact that a business margin in this particular field is not so high as it is for example construction or engineering. In the industry of mineral water production it is quite usual to have a negative profit at the end of the accounting period,

so that could bet he reason why the indicator ROA did not come up as statistically significant one.

Market analysis, financial analysis and analysis of correlation and statistical significance have provided necessary elements for setting up a conclusion leading to an increase of economic value added in enterprises operating in the sector of mineral water production.

5 Conclusion

The diploma thesis deals with financial performance evaluation of Slovak companies operating in mineral water production industry. The main objective of this diploma thesis was to reveal the main factors influencing the economic performance and sustainable competitive growth of producers of non-alcoholic beverages, primarily producing mineral water, and compare the current situation with the one during the global economic crisis. The main objective could have only been accomplished by fulfiling the partial goals and answering the research questions.

The first partial goal was to evaluate an environment in which companies carry on their businesses and to assess an economic background in the field of mineral water production. For this purpose was elaborated an analysis of external and internal environment. From both analyses it can be concluded that market with mineral water will, after four years of post-crisis decline, rise in comming years.

The second partial goal was to examine and compare current financial situation of selected enterprises in the range of years 2008-2014 by classical methods of financial analysis and by using current methods of assessing economic performance of the company. Major part of this thesis deals with assessing companies's performance by using economic value added indicator (EVA). For EVA calculation was selected and then used the model of rating agencies, which comes from the model INFA and is available on the website of the Ministry of Industry and Trade, www.mpo.cz. Based on data acquired from financial statements of these enterprises was conducted analysis that was focused on: indebtedness, liquidity, profitability and activity of these companies. Calculated values of individual indicators for the entire sample of companies can be evaluated positively, as compared to the industry production of beverages in the Czech Republic showed similar values and trends. Subsequently, there were examined effects of the individual components of the pyramid decomposition of variables return on equity and cost of equity. Statistical analysis showed that from five decomponents of ROE only one can be considered as statistically significant. It is the indicator of average tax rate or profit or loss after tax devided by profit or loss before tax. Moreover, a variable representing companies' groups according to the value of ROE is shown as statistically significant in each ANOVA table.

The last part of the thesis contained creation of an econometric model that explains impact of chosen explanatory variables on sales of mineral water producers in Slovakia. Two explanatory variables explain 88,2% of sales' variability in this model. The results show that there is a strong positive correaltion between aggregate sales of given industry and level of GDP as well as consumption expenditures. Moreover, the model fulfills all assumptions of classical linear regression model.

On the basis of the relevant partial results I consider the main aim of the thesis to be met.

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