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Diploma Thesis

Financial Analysis of a Chosen Firm

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Thesis title

Financial Analysis of a Chosen Firm

Objectives of thesis

The goal of the thesis is to apply selected methods of financial analysis to make overall evaluation of economic effectiveness of chosen company with regard to present state of the industry.

Methodology

Review of professional literature, methods of financial analysis, comparison with industry norm.

The proposed extent of the thesis

60 – 80 pages

Keywords

Financial analysis, financial statement, financial ratios, telecommunications

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Recommended information sources

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Declaration

I declare that I have worked on my diploma thesis titled "Financial Analysis of a Chosen Firm" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any third person.

In Prague on 27.3.2015 _____

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Finanční analýza vybraného podniku

Financial Analysis of Selected Company

Souhrn

Finanční ukazatele společnosti Vodafone a finanční zdraví obecně byly v období 2009 – 2011 víceméně uspokojivé, poté často propadly pod přijatelné nebo doporučené hladiny. Důvodem je, že Vodafone snížil své základní jmění a zvýšil dlouhodobý dluh. Navíc byla výkonnost společnosti Vodafone (snížení výnosů a zisku) ovlivněna vysokou mírou konkurence, cenovým bojem a částečně také finanční a ekonomickou krizí. Následně se finanční poměrové ukazatele a hodnoty modelů pro společnost Vodafone snížily, bankrotní modely rizika indikují vážné problémy pro Vodafone, i když silné zázemí mateřské společnosti zajistí, aby Vodafone Česká republika nezkrachoval. Všichni tři hráči (Vodafone, T-Mobile, O2) prokazují, že jejich stav v roce 2009 byl lepší ve srovnání s pozicí v roce 2013. /roveň výnosů a zisku šla na trhu obecně dolů, společnosti zažívají po bohatých letech dynamického růstu odvětví (do roku 2008) období nasycení, akcelerace trhu skončila a hrubé marže se dramaticky snižují.

Klíčová slova: finanční analýza, horizontální analýza, vertikální analýza, poměrové ukazatele, pyramidový rozklad, bankrotní modely; telekomunikace, mobilní trh, Vodafone, T-Mobile, O2

Summary

Vodafone's financial indicators and financial health generally were mainly satisfactory in the period of 2009 – 2011, then much of them fell down below acceptable or recommended thresholds. The reason behind this was that Vodafone decreased its equity and increased long term loan. Moreover Vodafone's performance (lowering of revenues and profit) was influenced by the high level of competition, increasing pressure on prices and partially financial and economic crisis. Consequently, financial ratios and model values of Vodafone lowered - models of bankruptcy risk indicate serious problems for Vodafone even though strong mother company ensures that Vodafone Czech Republic will not go bankrupt. All three players (Vodafone, T-Mobile, O2) show that their condition in 2009 was much better compared to their position in 2013. The level of revenues and profits went down on the market generally, companies after rich and wealthy years of dynamic growth of the industry (till 2008) experience period of saturation, acceleration of the market is over and gross margins are dramatically declining

Keywords: financial analysis, horizontal analysis, vertical analysis, ratio indicators, pyramid decomposition, bankruptcy models; telecommunications, mobile market, Vodafone, T-Mobile, O2

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List of Abbreviations

ARPU – average revenue per user

bn – billion

CTO – Czech Telecommunications Office

CZSO – Czech Statistical Office

EAT – earnings after tax

EBIT – earnings before interest and tax

EBITDA – earnings before interest, tax, depreciation and amortization

EBT – earnings before tax

EVA – economic value added

LTE – long term evolution

MM – million

MO – mobile telecommunications operator

MVNO – mobile virtual network operator

NWC – net working capital

ROA – return on assets

ROCE – return on capital employed

ROE – return on equity

ROS – return on sales

1 Introduction

The Czech telecommunications industry plays a huge role in counry's economy. Mobile market in the Czech Republic is quite saturated with the fastest dynamics around the year 2000 and shortly after; mobile penetration is among the highest within European countries and is high even by western European standards. Established mobile operators (MOs) on the market – Vodafone, T-Mobile and O2, until recently all owned by major Western multinational telco players[1] – face highly competitive market and have to focus on strategies based on mobile broadband data traffic, value added propositions such as mobile content, applications and complex ICT solutions for corporate customers.

Even though telco was, just like any other industry, influenced by recent financial and economic crisis financial conditions of particular mobile operator depended mostly on decisions made by mother company. For instance, Vodafone Plc. reduced registered capital in its Czech subsidiary from CZK 8.150 bn to CZK 1.470 bn in 2011 and, in the same financial year, the large long term loan has been established in the amount of CZK 7 bn. Such operations substantially influence indicators of financial health and position of the company. Financial crisis and flat tariffs offer brought higher pressure on all players and resultedin declining revenues and profits.

Structure of telco market in Czech republic in itself shows typical symptoms of oligopoly with both high level of competition on one hand and cartel-like cooperation on the other.

[1] O2 was bought by the investment company PPF Group in 11/2013

2 Objectives and Methodology

Objective of this thesis is to assess choosen company's -Vodafone Czech Republic, a.s. - financial health and its position within the industry and to provide assessment of possible future development of the industry through appliaction of methods of financial analysis on chosen company and partially on its competitors.

The analysis focuses on financial performance of Vodafone and other two mobile operators in the period between 2009 and 2013 meaning that it includes both period of financial and economic crisis and also the period of recovery.

The larger part of the thesis is dedicated to financial analysis but non-financial indicators characterizing performance of companies are analysed as well. Based on the analysis of Vodafone and its competitors it is possible to assess the financial health of the company and estimate future development. Analyses are based on data from the annual reports for the years 2009 to 2013. Data are stated in CZK without VAT. Financial year of Vodafone 1.4. to 31.3. of the next year is assigned to the first year of the period.

The thesis is divided into several chapters. Third chapter introduces theoretical approach of financial analysis, horizontal and vertical analysis, analysis of absolute values of indicators, balance rules analysis, ratio indicators, Du Pont pyramid decomposition and bankruptcy and solvency models. Fourth chapter focuses on the analysis of time series of data of Vodafone as the selected company and compares these data to remaining two major players in the industry and presents their comparison using multi-criteria methodology and spider web figures. Summary of all findings and estimated future development of the chosen indicators are outlined in the chapter 5. Attachments are also part of this diploma thesis and include data used for the analysis.

3 Theoretical Overview

Following part of this thesis serves to familiarize readers with basic theoretical concepts of financial analysis and related topics, in order to help them with understanding of financial analysis of selected company, which is the main focus of analytical part of this thesis. Information necessary for this theoretical overview will be mostly drawn from several publications of both Czech and English writing authors but other sources such as academic articles and web pages have been used as well.

3.1 Concept of Financial Analysis

Several concepts and definitions of financial analysis exist. Overall notion exists where financial analysis is being viewed as one of the fundamental roles of decision-making process in financial management with goal of determining overall state and financial well-being of a company (in some definitions sector or even economy). Depending on the author the term *financial analysis* is viewed either in broader or narrower concept.

Broader definition of financial analysis in relation to its subjects and sources of information used is being brought up by Fabozzi and Peterson who define it as: *„Financial analysis is a tool of financial management. It consists of the evaluation of the financial condition and operating performance of a business firm, an industry, or even the economy, and the forecasting of its future condition and performance…Data for financial analysis may come from other areas within the firm, such as marketing and production departments, from the firm's own accounting data, or from financial information vendors…as well as from government publications…"*[2]

In relation to information sources this definition of financial analysis is seconded by Synek, who includes among information source of financial analysis: internal accounting statements, annual reports, statistical surveys, data from managerial accounting

[2] PETERSON, P. P., FABOZZI, F. J., *Financial management & analysis*, p. 5

as well as external sources like information about other enterprises and data from national statistical offices mainly for purpose of comparing with competition.[3]

More narrow approach to financial analysis focuses mainly on given company as a subject and uses information provided by internal accounting statements, for this reason some authors use the term *financial statement analysis*.

More narrow definition of financial analysis (financial statement analysis) is brought up by Landa who defines it as: *„The essence of financial analysis is utilization of analytical tools and methods for extraction of necessary information from accounting statements…Those information reflect significant data (and trends among those data) about results of past entrepreneurial activity of evaluated subject and present financial state.“*[4]

3.2 Users of Financial Analysis

Financial analysis is employed by variety of different subjects with different purposes and interests. Since the financial analysis is, in its core, serves as an input for decision making, financial analysis and its results can prove useful to practically anyone whose interests are directly or indirectly linked to a given enterprise. These subjects are usually referred to as the *stakeholders*. The term stakeholder can be formally defined as: *"the various groups of persons that depend on a firm."*[5] Kislingerová divides stakeholders into *external stakeholders* and *internal stakeholders* based on their access to either only publicly known or also to internal information about the enterprise.

3.2.1 External Stakeholders

Investors: including shareholders are main providers of financial capital for the enterprise. Because of that investors employ methods of financial analysis when making decision to which enterprise to invest. This includes especially assessment of risk and return of potential investment. Once investment is made it is necessary for investors to use

[3] SYNEK, M. a kol., *Podniková ekonomika*, p. 237
[4] LANDA, M., *Jak číst finanční výkazy*, p. 59
[5] PETERSON, P. P., FABOZZI, F. J., *Financial management & analysis*, p. 22

financial analysis in order to evaluate how enterprise uses given capital. This is especially in case of joint-stock companies where division between decision making and ownership exists. In many cases interests of agent (management) and principle (owners) are not the same which leads to so called *agency costs* which can be defined as: *"Where the agent undertakes an action which is not in the best interests of the principal, the cost of this action is referred to as an agency cost."*[6] Proper utilization of financial analysis is crucial in managing of such costs.

Banks and creditors: use financial analysis for informing themselves about financial state of their debtors as well as for calculating properties of potential loan based on assessment of risk and return. Also regular obtaining of information about financial state of the debtor is a standard part of many loan-contracts.

Government: uses financial analysis for many different reasons. First of all it has to monitor reported accounting for its compliance with law and other regulations. It also uses results of financial analysis to perform statistical research when making decisions on macroeconomic level. Other instances where government organs use financial analysis may be managing of publicly owned enterprises and overseeing suppliers of public contracts.

Business partners (customers and suppliers): for supplier financial analysis is necessary in evaluating contractor's ability to pay off his liabilities. It is also used when evaluating possibility of long-term business relationship. For customers financial analysis is especially useful in instances, where customer has a limited possibility of subsidizing given product from another supplier and is used for evaluating supplier's ability to provide contracted product or service.

Competition: financial analysis is not only useful as a source of information about competitors but it can be also used as a tool for evaluating financial state of enterprise by comparing results of own business activities with successful companies in the same field, industry standards etc. In case of many methods of both technical and fundamental

[6]O'CONNELL, V., WHELAN, G., *FINANCIAL MANAGEMENT FOR CORPORATE ENTERPRISES Readings and Case Studies*, p. 5

financial analysis comparison with other entrepreneurial bodies is necessary for proper interpretation of results and findings. [7]

3.2.2 Internal Stakeholders

Managers: use financial analysis as a crucial part of decision making process. Since the goal of financial management should be maximizing shareholder's wealth / value of the company, and that most of executive salaries and bonuses are linked to this goal, it is in the best interest of management to know as much as possible about company's financial state. From all groups of stakeholders mentioned in this chapter management has best opportunities for financial analysis because of their information advantage. Main reason for this advantage is their access to internal, both official and unofficial sources of information (3.3 Sources of Information for Financial Analysis).

Employees / Unions: financial prosperity of a company also significantly effects interests of employees. Employee benefits, education, employment and social stability are all affected by company's financial well-being. Employment contracts, collective bargaining and many other issues depend of results of financial analysis.[8]

3.3 Sources of Information for Financial Analysis

Meaningful financial analysis needs substantial amount of information from various sources of both financial and non-financial nature. Quality of information is critical for acquiring correct and valuable results reflecting true financial state of a given enterprise. As mentioned earlier, methods and tools used in financial analysis may be of both qualitative and quantitative nature and as such may use various types of information as input.

Classification by Type:

- **Financial**: are those types of sources where information originates from accounting processes and are expressed in units of currency.

[7] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 22–23
[8] KISLINGEROVÁ, E. a kol., *Manažerské finance*, P. 23–24

- **Non-financial**: sources do not contain information originating from accounting processes and may not be expressed in units of currency.

Classification by origin:

- **Internal sources**: information in these sources originates from inside the company. Internal sources of information then can be divided into official: financial statements, annual reports and other publicly available sources, and unofficial: manager's summaries, internal memos, correspondence and other non-public sources.
- **External sources**: contain information originating from outside the company. Like internal ones they can be divided into official: reports of national statistical offices, ministries, chambers of commerce etc., and unofficial: news reports, expert opinions, rumors etc.

Other forms of classification can be devised since methods of financial analysis and their possible sources are numerous. Due to the nature of the analytical part of this thesis further emphasis will be placed on so called financial statements which will serve as main sources of information for calculations conducted in analytical part of the thesis.

3.3.1 Financial Statements

"*Records that outline the financial activities of a business, an individual or any other entity. Financial statements are meant to present the financial information of the entity in question…Financial statements for businesses usually include: income statements, balance sheet, statements of retained earnings and cash flows, as well as other possible statements.*"[9]

3.3.1.1 Balance Sheet

Balance sheet also known as a *statement of financial position* or *statement of financial condition* can be basically described as a report summarizing company's assets, liabilities, and equity. Since these figures are written down for exact point in time they are

[9] *Financial Statements*, INVESTOPEDIA, p. 1

classified as *static indicators*. The balance sheet functions as a detailed display of so called *Accounting equation:*

$$\sum \text{Assets} = \sum \text{Equity} + \sum \text{Liabilities} \qquad \text{(Formula 1)}$$

"The fundamental accounting equation captures two basic features of any company. The right side of the accounting equation indicates the claims on the company's assets. These claims may be the claims of creditors (liabilities) or they may be the claims of owners (equity). The implication of the fundamental accounting equation is that what company owns (its assets) must always be equal to what it owes (its liabilities and equity)."[10] Size and structure of assets in the company reflects past investment decision, whereas size and structure of equity and liabilities reflects past financial decisions.

Assets

"Assets are the resources of the business enterprise, such as plant and equipment that are used to generate future benefits."[11]

In the balance sheet, assets are listed in order of their liquidity i.e. by how quickly they can be turned into cash. In case of this thesis decreasing listing (used according to the Czech accounting system) will be used. By these criteria we recognize three types of assets: fixed, current and other assets.

Fixed assets (non-current assets, fixed assets) are those assets, which are expected to be possessed by the company for longer period of time than one year. Also unlike other type of assets, fixed assets are not consumed during a course of one production cycle. Because of that the consumption of fixed assets is expressed by *depreciation* – a calculated cost, which accounts for decline of fixed assets during an accounting period.

Current assets (current assets, working assets) are those assets, which are expected to be converted into cash within a period of one year. Most of these assets will be completely consumed during a course of one production cycle. Current assets most usually include tradable items, materials necessary for immediate production and especially cash

[10] RICH, J. S., *Cornerstones of financial accounting*, p. 9
[11] PETERSON, P. P., FABOZZI, F. J., *Financial management & analysis*, p. 128

and cash equivalents. On balance sheet current asset items may include: inventories, work in progress, receivables etc.

Other assets depict mainly balances of amounts on "accrual accounts". These accounts may include: rents paid in advance, active exchange differences, work supplied but not yet paid for etc. From analytical point of view these types of balance sheet items represent only a small portion of the whole sum of assets and as such have usually little effect on firm's financial wellbeing.[12] [13]

Equity

Equity represents value ownership interest in the company. In sole proprietorship equity comprises only of paid-in capital. In case of Limited Liability Company and joint-stock company, equity is divided into several groups:

- **Capital** – which represents value given by the owners (entrepreneur, partners, and shareholders) into the company. This item is usually divided into paid-in capital recorded in "Business register" and changes in paid-in capital.
- **Capital funds** (share premium, other capital funds) – are created as a result of specific accounting operations and usually represent differences in valuating of certain items and operations.
- **Reserves** – include legal reserves and other funds created from retained earnings from current or past periods.
- **Retained earnings** – as mentioned above, this part include retained earnings from current and past accounting periods.

It is useful to keep in mind that book value of equity is usually very different from market value and that in order to make realistic assessment of value of owner's equity, difference between real (market) values of company's assets and real value of its liabilities has to be calculated.[14] [15]

[12] RŮČKOVÁ, P., *Finanční analýza: metody, ukazatele, využití v praxi*, p. 24.
[13] LÖRINCZOVÁ, E., *Notes from lecture*
[14] SYNEK, M. a kol., *Podniková ekonomika*, p. 124
[15] LÖRINCZOVÁ, E., *Notes from lectures*

Liabilities

Liabilities are present obligations of the company cumulated over past accounting periods and it is expected that compensation of these liabilities will result in decrease of funds representing financial wellbeing of the company.

As in case of assets, liabilities are also divided on: current liabilities as obligations which must be paid within period of one year, and long term liabilities, obligations which are due in a period exceeding one year. In addition to this, liabilities are then classified into: trade liabilities, liabilities to employees, liabilities to institutions of social welfare, liabilities from loans and other liabilities.

Specific kind of liabilities are so called "reserves". Reserves serve as an accounting tool used for projection of expected future expenses into current accounting period. These reserves may include: mandatory legal reserves, reserves for retirements and similar liabilities, reserve for income tax etc.[16]

3.3.1.2 Income Statement

Income statement is an accounting statement documenting results of accounting unit's economic activity over a given accounting period (in case of this thesis, income statements depicting period of one calendar year). Financial result in income statement is described through relationship between incoming revenues and expenses incurred in creating them.

Revenues and Expenses

Revenues in broadest sense can be defined as increase of financial wellbeing due to economic activity of the company. This increase can either take form of increase in assets or decrease in liabilities.

Expenses on the other hand are decrease in financial wellbeing due to economic activity of the company. Expenses can decrease retained earnings either as consumption of assets or increase in liabilities. Existence of expenses arises from firm's effort to create revenues.

[16] PILAŘOVÁ, I., *Účetní a zákonné rezervy*, p. 1

Income statement items record all revenues (incomes) and expenses, which relate to the given accounting period by time of their realization. Financial result described by these figures can be categorized either as result of *operating activities*, *financial activities* or *extraordinary activities*.[17]

Since the entries in income statement depict changes, which occurred over a given period, they can be classified as *dynamic indicators.* In the income statement financial results of the company are not being reported on *cash basis*, instead they are reported on *accrual / cumulative basis.* Due to this principle income statement depicts expenses and revenues realized in given accounting period. To review real movements of cash during given period, one must look at the cash-flow statement (described in the next chapter).

Due to both Czech and international accounting standards accounting unit can choose to issue its income statement in one of two forms based on different sorting of expenses:

- "by nature",
- "by function".

Income statement based on defining expenses **by nature** was and is a dominant practice in entrepreneurial accounting and financial analysis. Income statement bases on defining expenses and revenues **by function** is mainly used in managerial accounting even though the two approaches are legally comparable.[18] [19]

Classification of Earnings

Total impact on financial wellbeing of the company is in the income statement calculated as a deduction of total sum of expenses from total sum of revenues. By doing so, pure financial inflows are isolated creating so called "bottom line", in other words *profit* or *loss*. For proper utilization of income statement in the financial analysis, it has to be acknowledged that several different forms of profit exist.

- **Earnings before interest, taxes and depreciation** (and amortization) (**EBITDA**) – measures accounting unit's earnings before interest, taxes,

[17] MÁČE, M., *Účetnictví a finanční řízení*, p. 274
[18] LANDA, M., *Jak číst finanční výkazy*, p. 39
[19] HORNGREN, Ch. T., WALTER, T. H., OLIVER, M. S., *Financial & Managerial Accounting*, p. 12

depreciation and amortization is deducted (In US GAAP style accounting term *depreciation* is used in relation to tangible fixed assets, whereas term *amortization* is used in relation to intangible fixed assets.) As an indicator, EBITDA describes operational performance of accounting unit.

- **Earnings before interest and taxes** (**EBIT**) – measures accounting unit's earnings after depreciation is deducted. This allows for the measurement of accounting unit's performance while disregarding its capital structure. In financial analysis, EBIT is used in calculation of several financial ratios (see chapter Analysis of Differential Indicators).
- **Earnings before tax** (**EBT**) – measures accounting unit's earnings after deduction of depreciation and interest. By omitting effect of tax, EBT enables analysis of data acquired over longer periods of time (if there was change in tax code) or from companies operating under different tax codes.
- **Earnings after tax** (**EAT**) – measures accounting unit's earnings after deduction of depreciation, interest and taxes. In the Czech accounting standards, EAT is synonymous with *net income*. It measures all funds that can be paid out to shareholders / owners of the company or reinvested.
- **Retained earnings** – is an accounting unit's net profit after payment of dividends to shareholders (in case of joint-stock company). It represents the portion of acquired earnings left for reinvesting.[20]

3.3.1.3 Cash-flow Statement

As mentioned in previous chapter, unlike balance sheet and income statement, cash flow statement is not recorded on accrual basis taking into account time differences between recording of accounting events and their realization. Cash-flow statement serves as recording of increase or decrease in *cash* and *cash equivalent* in course of an accounting period.[21] Czech obligatory accounting standards define cash and cash equivalents as follows:

Cash – sum of cash money, money deposited on bank accounts including passive overdrafts and cash in transit. *Cash* equivalents – current liquid assets, which can easily be

[20] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 40–42
[21] ŠTEKER, K., OUTSINOVÁ, M., *Jak číst finanční výkazy*, p. 243

transformed into cash and their price is relatively stable in time. This may include deposits and receivables, which can be turned into cash in period shorter that three months or publicly traded securities.[22]

Cash-flow statement is structured into three main parts. Each part records changes in cash and cash equivalents resulting from different activities of accounting unit. They are as follows:

- **Cash flow from operating activities**: resulting from all basic activities relating to accounting unit's entrepreneurial operations and all activities that do not fall under following categories.
- **Cash flow from investment activities**: resulting from changes in fixed assets and in received or issued loans not falling into previous category.
- **Cash flow from financial activities**: resulting from changes in equity and fixed liabilities.[23]

According to the Czech accounting standards accounting unit has a choice to report its cash flow movement using either *direct method* or *indirect method.*

- **Direct method**, which describes movements of cash and cash equivalents based on data from accounting unit's double entry bookkeeping. This information can be either reported during the course of accounting period or extracted from its analytical and synthetical accounts retrospectively.
- **Indirect method**, which is based on accounting unit's economic result found in accounting unit's income statement which is then cleared of expenses and revenues not representing change in cash or cash equivalents. According to Kislingerova: "*Company practice dominantly uses the indirect method.*"[24]

[22] Dekree No. 500/2002 Sb., §40, §41
[23] KNÁPKOVÁ, A., PAVELKOVÁ, D., *Finanční analýza. Kompletní průvodce s příklady*, p. 47–48
[24] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 49

3.4 Approaches to Financial Analysis

Different approaches can be identified based on methods and tools used for financial analysis. Sedláček identifies two basic approaches to financial analysis: *fundamental* (qualitative) and *technical* (quantitative).

3.4.1 Fundamental Analysis

This approach uses mainly qualitative information as a basis for its analysis. Because of that it relies deeply upon subjective knowledge and expertise of people involved and only rarely uses mathematical and statistical tools and methods. Goal of fundamental analysis is usually describe influence of both internal and external factors on given enterprise.

- **Macroeconomic factors**, i.e. fiscal and monetary policy of local government, tax environment, state of infrastructure etc.
- **Microeconomic factors**, i.e. state of the sector where given enterprise exists, its share of the market, immediate supply-side government policies, state of the labor and capital markets etc.
- **Life cycle of the enterprise**, i.e. creation, growth, stabilization, crisis, closure[25] or birth, growth, maturity, decline and death[26].
- **Goals of the enterprise**, i.e. main financial goal of maximizing shareholders wealth, interests of other stakeholders, e.g. investors, management, public etc.

Results of fundamental analysis then create framework for technical analysis.[27]

3.4.2 Technical Analysis

Technical analysis uses mathematical and statistical and other algorithmic tools and methods for quantitative evaluation of company's financial well-being. Individual methods

[25] MILLER, D., FRIESEN, P. H., *A Longitudinal Study of the Corporate Life Cycle*, p. 42
[26] *Considering the Organizational Life Cycle*, Boundless Management, p. 1
[27] SEDLÁČEK, J., *Finanční analýza podniku*, p. 7–9

of technical analysis will be described further and their practical utilization will be the main focus of the *analytical part* of this thesis.[28]

[28] SEDLÁČEK, J., *Finanční analýza podniku*, p. 9–10

3.5 Quantitative Methods of Financial Analysis

3.5.1 Analysis of Absolute Indicators

Analysis of absolute indicators is basic and the simplest method of financial analysis. The method is based on analyzing individual items from financial statements in their original value (absolute form). It case of these values it is necessary to differentiate between state indicators capturing value of given item in certain point in time (found on balance sheet) and flow indicators reporting change over a given period of time (found on income and cash flow statement). Two basic types of analysis of absolute indicators used in practical part of the thesis are: *horizontal analysis* of absolute indicators (trend analysis) and *vertical analysis* of absolute indicators (percentage analysis). In both cases the proper choice of time series over which the data will be analyzed is crucial.[29]

3.5.1.1 Horizontal Analysis

Horizontal analysis serves as a tool to analyze changes of financial statement line items in time. It is based on computation of either absolute (measured in units) or relative (perceptual change in relation to base period) change between values from chosen periods.[30]

$$\text{absolute change} = X_t - X_{t-1} \qquad \text{(Formula 2)}$$

$$\text{“chain index”, relative change} = \frac{X_t - X_{t-1}}{X_{t-1}} * 100\ [\%] \qquad \text{(Formula 3)}$$

where X_t is value in current period, X_{t-1} is value in previous period, X_b is value in base period.

3.5.1.2 Vertical Analysis

Vertical analysis compares each item in given financial statement with a total summarizing item of the same category e.g. current assets compared to total assets. This method serves to evaluate capital and assets structure (in case of balance sheet) of revenue

[29] RŮČKOVÁ P., ROUBÍČKOVÁ M., *Finanční management*, p. 100–103
[30] RICH J., JONES J., MOWEN M., HANSEN D., HEITGER D., *Cornerstones of Financial and Managerial Accounting, Current Trends Update*, p. 628–629

and expense structure (in case of income statement) of the company. Vertical analysis of financial statements may be done either in time or in a given period. Basic approach to vertical analysis calculates perceptual value of financial statement item as a part of total of its category. Total values used for comparison usually are Total sales for incomes statement items and Total assets and total liabilities for balance sheet items.

3.5.2 Analysis of Differential Indicators

This method uses balance sheet item values to evaluate company's financial position with special focus on liquidity. The method is based on subtraction of asset items from totals of their category. In practical part of this thesis two differential indicators are used[31]: net working capital and net liquid assets.

Net Working Capital (NWC)

Net working capital is difference between total sum of current assets and total sum of current liabilities. Value of net working capital represents that portion of current asset, which are financed by long term liabilities.

Importance of net working capital lies in company's ability to finance its day-by-day operations. Despite being the most widely used indicator of differential analysis, net working capital has its limitations because current assets may include items with widely different liquidity.[32]

$$\text{Net working capital} = \text{Current Assets} - \text{Current Liabilities} \qquad \text{(Formula 4)}$$

Net Liquid Assets

Net liquid assets are difference of total sum of most liquid assets and sum of current liabilities. By omitting parts of current assets with lesser liquidity, net liquid assets indicator avoids limitations of net working capital and represents more conservative view of company's ability to finance its operations.

$$\text{Net liquid assets} = (\text{Cash} + \text{Cash Equivalents}) - \text{Current Liabilities} \qquad \text{(Formula 5)}$$

[31] KNÁPKOVÁ, A. PAVELKOVÁ, D., *Finanční analýza. Kompletní průvodce s příklady*, p. 81–82
[32] SEDLÁČEK, J., *Finanční analýza podniku*, p. 35–42

3.5.3 Balance Rules Analysis

Balance rule analysis aims at the evaluation of relationship between company's assets and capital structure. Several so-called balance rules have been formulated to guide financial management in proper managed financial stability of the company especially in the long horizon.[33] Most often used balance rules are:

- **Golden balance rule** – this rule assumes that in order to achieve long-term financial stability of the company, fixed assets should be financed by long term liabilities. On the other hand: current assets should be financed by current liabilities. To achieve this scenario value of long term liabilities should be higher (or at least equal to) than that of fixed assets.[34]
- **Golden Rule of Settlement Risk** – this rule examines sources from which company is financed. Rule states that minimization of risk happens in when value of equity is higher that value of liabilities. However due to the higher profitability of external funds scenario where equity and liabilities are equal is also acceptable.[35]
- **Pari Golden Rule** – this rule states that fixed assets of the company should be financed solely by company's equity. This ratio is in its nature very conservative since external funds are much cheaper form of financing.
- **Golden Ratio Rule** – this rule examines relationship between company's investments and its revenues. It states that growth of company's investments should never exceed growth of company's revenues.

3.5.4 Financial Ratio Analysis

Financial ratio analysis is method of financial analysis based mostly on data from financial statements, which uses proportion of two chosen item values to examine and evaluate their mutual relationship. According to Sedláček, financial ratio analysis is most commonly used method of financial analysis because it is quick and easy to use. Clear

[33] SCHOLLEOVÁ, H., *Ekonomické a finanční řízení pro neekonomy*
[34] SEDLÁČEK, J., *Finanční analýza podniku*, p. 28
[35] SYNEK, M. a kol., *Podniková ekonomika*, p. 30

disadvantage of financial ratio analysis is its need to use other analytical methods for proper interpretation.

Financial ratios can be divided into several groups depending on what aspect of company's financial well-being is examined:[36]

- Profitability
- Liquidity
- Leverage
- Activity
- Capital market[37]

3.5.4.1 Profitability Ratios

Profitability ratios are ratios, which divide with different item from its assets, equity or other categories with certain category of *company's earnings* in order to evaluate company's ability to generate earnings. Their values state how many units of currency company generates in earnings per one currency unit of denominator. Profitability itself is one of the main criteria for capital allocation in market economy.[38] Following text briefly characterizes individual profitability ratios used in practical part of this thesis.

Return on Equity (ROE)

ROE serves as a measure of company's earnings in relation to its equity. It represents company's ability to transform shareholders' investment into profit[39]. As such it is a key indicator used by investors to determine whether they should allocate their capital into given company or not. Since investing into enterprise bears with it inherent risks, return on equity of a company should never be lower than rate of return on riskless investments, e.g. government bonds.[40]

$$ROE = EAT / Equity \qquad \text{(Formula 6)}$$

[36] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 71
[37] Due to nature of analyzed data, capital market ratios are not used in practical part of this thesis and neither are further described.
[38] SYNEK, M. a kol., *Podniková ekonomika*, p. 51
[39] EAT – earning after tax
[40] ALBRECHT, W. S., STICE, E. K., STICE, J. D., *Financial Accounting*, p. 673

Return on Assets (ROA)

ROA measures company's ability to generate earnings in relation to means used to generate those earnings. It is used to evaluate company's production efficiency without taking into consideration its capital structure.

ROA = EAT / Total Assets (Formula 7)

Return on Capital Employed (ROCE)

ROCE measures profitability of invested long term capital. By not taking into consideration origin of the invested capital, it measures return on for both shareholders and creditors. Reason for excluding current liabilities from denominator is that they originate from financial markets or trade relations instead of capital markets and as such their effect on overall profitability is limited.[41]

ROCE = EBT / (Long Term Liabilities + Equity) (Formula 8)

Return on Sales (ROS)

ROS examines relationship between sale revenues and earnings. It is a measure on how well the company transforms money gathered from selling their products and services into real profit available to shareholders. In cross-company comparison it serves as an indicator of how the company manages its expenses.[42]

ROS = EAT / Sales (Formula 9)

3.5.4.2 Liquidity Ratios

Term *liquidity* refers to company's ability to transform its assets into cash. Therefore liquidity ratios examine company's ability to meet obligations to its creditors. By dividing given category of current assets by given category of current liabilities these ratios measure how many times is the company able to finance its immediate obligations

[41] GRÜNWALD, R. HOLEČKOVÁ, J., *Finanční analýza a plánování podniku*, p. 85
[42] SEDLÁČEK, J., *Finanční analýza podniku*. p. 59

i.e. company's solvency. Three liquidity ratios are commonly used distinguished by what type of current assets they use in their numerator.[43]

Current Ratio

Current ratio measures how many times sum of all current assets of the company covers sum of its current liabilities. Disadvantage of current ratio is that assets used in numerator have usually very different liquidity, therefore result may not provide true image of company's solvency. According to Sedláček value of this indicator should not be less than 1.5.[44]

Current Ratio = Current Assets / Current Liabilities (Formula 10)

Quick Ratio

To avoid certain limitations of current ratio, quick ratio (sometimes called „acid test") omits inventories from calculation. Reason for this is that inventories are usually much less liquid than other categories of current assets and even if they were to be sold by company immediately, company would be most probably forced to sell them under their book value. Ideal value of this indicator is higher than 1.[45]

Current Ratio = (Current Assets – Inventories) / Current Liabilities (Formula 11)

Cash Position Ratio

Cash position ratio measures company's ability to meet its current obligations using solely its financial assets. By that definition, it is one step more conservative than acid test since it considers only cash and most liquid items of current assets.

Financial Liquidity Ratio = Financial Assets / Current Liabilities (Formula 12)

[43] KNÁPKOVÁ, A. PAVELKOVÁ, D., *Finanční analýza. Kompletní průvodce s příklady*, p. 89–90
[44] SEDLÁČEK, J., *Finanční analýza podniku,* p. 66
[45] SEDLÁČEK, J., *Finanční analýza podniku*. p. 60

Cash Ratio

Cash ratio measures company's ability to meet its most immediate obligations. In order to do so it only takes into consideration the most liquid items of company's assets – cash and cash equivalents. Ideal value of this indicator is approximately 0.2.[46] On the other hand too high values of cash ratio would mean over-liquidity and would be a sign of problems with cash management.

Cash Equivalents / Current Liabilities (Formula 13)

3.5.4.3 Leverage ratios

Leverage ratios are aimed at examining capital structure of the company. Setting of ideal capital structure of the firm is one of the main challenges of financial management. Basic assumptions about company's capital structure are:

- Liabilities are usually cheaper than equity.
- Short term capital is usually cheaper than long term capital.[47]

The fact that external financing increases returns on shareholders equity is called *financial leverage*. However, it has to be kept in mind that*: „…firms with relatively high debt ratios have higher expected returns when the economy is normal, but they are exposed to risk of loss when the economy goes into a recession. Therefore, decisions about the use of debt require firms to balance higher expected returns against increased risk.*"[48]

Debt Ratio

Measures the percentage portion of company's total assets which is financed by external sources. Shareholders may prefer this ratio to be higher since it would mean higher returns on their investment. On the other hand creditors may prefer the opposite since higher debt ratio may reflect higher risks. Ideal value of this indicator is less than 0.60.[49]

[46] SEDLÁČEK, J., *Finanční analýza podniku*. p. 60
[47] SYNEK, M. a kol., *Podniková ekonomika*, p. 125
[48] HOUSTON J. F., BRUGHAM, E. F., *Fundamentals of financial management*, p. 96
[49] SEDLÁČEK, J., *Finanční analýza podniku*, p. 64

Debt Ratio = Total Liabilities / Total Assets (Formula 14)

Several variations to debt ratio exist, where each part of company's liabilities is examined separately. Variations used in practical part of this thesis are:

- **Long Term Debt Ratio** – where long term liabilities are taken into account.

Long Term Debt Ratio= Long Term Liabilities / Total Assets (Formula 15)

- **Current Debt Ratio** – where current liabilities are taken into account.

Current Debt Ratio = Current Liabilities /Total Assets (Formula 16)

Debt to Equity Ratio

This ratio measures relative size of shareholders' equity to total debt. It tells how well company's creditors are protected in case of insolvency.[50] Debt to equity ratio serves as an alternative to debt ratio. Ideal value of this indicator is less than 1.50.

Current Ratio = Total Liabilities / Equity (Formula 17)

Fixed Assets Coverage

Fixed assets coverage shows the extent to which fixed assets of a company are covered by its long term financial sources. If the value of this indicator exceeds 1, it implies over-capitalization of the company, which leads to lesser economic efficiency of a company.[51]

Fixed Assets Coverage = (Equity + LT Liabilities) / Fixed Assets (Formula 18)

Interest Coverage

Interest coverage referred to sometimes also as „times interest earned" is a ratio measuring how many times is company able to cover obligations arising from its use of

[50] GIBSON, Ch. S., *Financial Reporting & Analysis*, p. 268
[51] SEDLÁČEK, J., *Finanční analýza podniku*, p. 65

external financing by its earnings. According to Knápková and Pavelková ideal value of this ratio should be no less than 5.[52]

Current Ratio = EBIT / Interest Expense (Formula 19)

3.5.4.4 Activity Ratios

Activity ratios are mostly used to measure how efficiently the company is managing its assets (sometimes they are referred to as assets management ratios). Asset management is one of the main challenges of financial management of the company. If amount of assets is too high company is realizing unnecessary expenses; if the amount is too low company may lack ability to realize further growth in the future.[53] Activity ratios examine efficiency of asset management by calculating either the rate of turnover or time of turnover.[54]

Total Assets Turnover

Measures a number of times total assets of company are transformed its cash over a given period (in practical part of the thesis a period of one year). According to Kislingerová basis for interpreting this ratio should be industry average but at the same time value of this indicator should not be less than 1.[55]

Total Assets Turnover = Sales / Total Assets (Formula 20)

Total Assets Turnover Period = 365 / Total Assets Turnover (Formula 21)

Fixed Assets Turnover

This ratio measures efficiency with which the company is utilizing assets like property, plant, equipment etc. It is most often used when assessing necessity of new investments. If the value of this indicator is low compared to company average it usually means either that the company is not using efficiently its production capacity or that an

[52] KNÁPKOVÁ, A. PAVELKOVÁ, D., *Finanční analýza. Kompletní průvodce s příklady*, p. 86
[53] SEDLÁČEK, J., *Finanční analýza podniku*. p. 60
[54] HOUSTON, J. F., BRUGHAM, E. F. *Fundamentals of Financial Management*, p. 91
[55] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 82

investment into fixed assets has been made which will bring future positive effect. Due to the nature of the matter only tangible fixed assets are taken into account.

Fixed Assets Turnover = Sales / Tangible Fixed Assets (Formula 22)

Fixed Assets Turnover Period = 365 / Fixed Assets Turnover (Formula 23)

Inventory Turnover

Inventory turnover measures number of days it takes for company's inventories to be transformed from cash to inventory items and back to cash again. According to Landa value approximately 30 days and less indicates very favorable situation, value between 50–100 days average for the Czech Republic and value above 100 days indicate unfavorable situation for the company.[56] Kolář and Mrkvička also advise using total expenses rather than total sales revenue in denominator.[57]

Inventory Turnover = Sales / Inventory (Formula 24)

Inventory Turnover period = 365 / Inventory Turnover (Formula 25)

Receivables Turnover

Receivable turnover also called day sales outstanding is a ratio measuring number of days it takes creditors of a given company to settle their trade debt – in other words how long it takes from making a sale to receiving of cash.[58]

Receivables Turnover = Sales / Receivables (Formula 26)

Receivables Turnover Period = 365 / Receivables Turnover (Formula 27)

Payables turnover

This indicator measures an amount of days it takes for the company to settle its trade debts, i.e. to pay for goods and services supplied by its trade partners. Main analytical use of this indicator lies in comparison its value to that of receivables turnover. Company is in favorable situation when payables turnover takes longer than receivables turnover.

[56] LANDA, M., *Jak číst finanční výkazy*, p. 87
[57] MRKVIČKA J., KOLÁŘ P., *Finanční analýza*, p. 95
[58] HOUSTON J. F., BRUGHAM E. F., *Fundamentals of Financial Management*, p. 92

Payables Turnover = Sales / Payables (Formula 28)

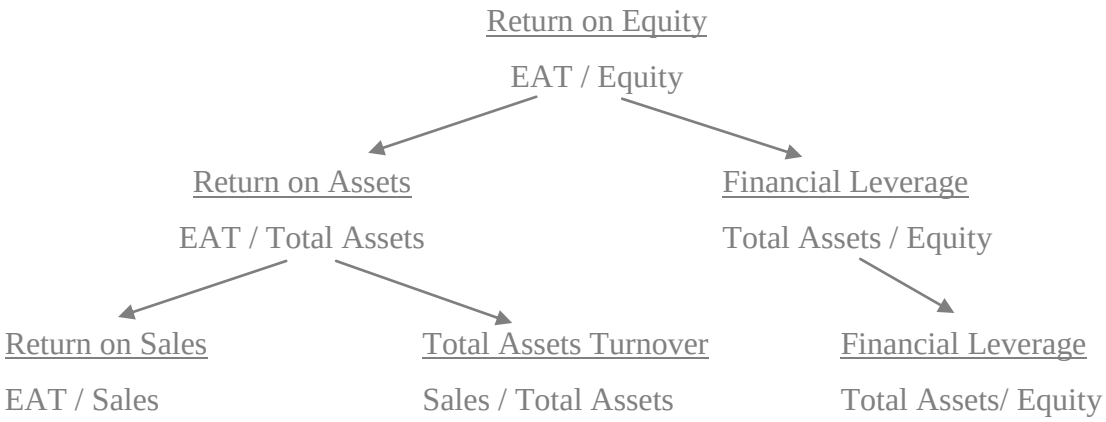
Payables Turnover Period = 365 / Payables Turnover (Formula 29)

3.5.5 Analysis of Pyramid Indicators

In the same way as the financial ratio measures relationship between individual items from financial statements, pyramid indicators analysis is used to examine relationships between individual ratios.[59] Pyramid indicator analysis method used in practical part of this thesis is so called *Du Pont ROE decomposition*.

3.5.5.1 Du Pont ROE Decomposition

This pyramid indicator is based on decomposition of individual financial ratio indicators from basic aggregate ratio (ROE, return on equity) to final detailed indicators. This approach examines relative influence of component indicators on aggregate ratio at the top of the pyramid. Du Pont decomposition is usually used to analyze development of ROE in time using index value calculations of its individual components. Calculation of Du Pont ROE decomposition is as follows:[60]



(Formula 30)

[59] SEDLÁČEK, J., *Finanční analýza podniku*, p. 82
[60] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 74

3.5.6 Solvency and Bankruptcy Models

To avoid limitations of previously described methods and to present complete view on financial situation of the company or even to predict future financial development, solvency and bankruptcy models have been devised.[61]

Bankruptcy models aim at predicting future financial difficulties or even bankruptcy of examined company. In order to do this it uses past data and methods of mathematical and statistical analysis. **Solvency models** aim at evaluating company's position within the industry or its financial health.

3.5.6.1 Altman Z-score

This bankruptcy model uses discrimination analysis in order to evaluate probability of company's future default. Based on result of calculation of five component ratios, company can be placed into three different intervals or „zones".

- First one is the **Safe Zone** for Z-scores above 2.9. In this zone no future financial problems should be imminent.
- Second interval is so called ***Gray Zone*** for Z-score values between 2.9 and 1.2. Companies in this zone do not face imminent danger of bankruptcy but some financial challenges are present.
- Last zone for Z-score values lesser than 1.2 is for companies with **imminent danger of bankruptcy**.

Calculation of Altman Z-score is as follows:[62]

Z-score = 3.3 * (EBIT/Total Assets) +
+ 1.0 * (Sales/|Total Assets) +
+ 0.6 * (Equity/Total Liabilities) +
+ 1.4 * (Retained Earnings from Previous Periods/Total Assets) +
+ 1.2 * (Net Working Capital/Total Assets) (Formula 31)

[61] SEDLÁČEK, J., *Finanční analýza podniku*, p. 105
[62] KISLINGEROVÁ, E. a kol., *Manažerské finance*, p. 90

3.5.6.2 IN–Index

Application of principle used in Altman Z-score to conditions of the Czech Republic is Neumann's IN index.[63] Same as the previous model it uses discrimination analysis in order to evaluate probability of company's bankruptcy. From the time of its creation (IN95 – 1995) this bankruptcy model underwent significant development. Variation used in practical part of this thesis is IN05 index pro years 2004/2005. Same as with the Altman Z-score the company can be placed based on result into three categories:

- **Safe Zone** is for values exceeding 2.0.
- **Gray zone** is interval between 2.0 and 1.0.
- **Strong probability of bankruptcy** is indicated by values lesser than 1.0.[64]

However it is important to note that mentioned values may be changed due to the nature of the industry. Calculation of IN05–Index is as follows:[65]

IN05 = 0.13 * Total Assets / Total Liabilities +
+ 0.04 * EBIT / Interest +
+ 3.97 * EBIT / Total Assets +
+ 0.21 * Revenues / Total Assets +
+ 0.09 * Curr.Assets / (Curr.Liabilities + Short Term Bank Loans)

(Formula 32)

3.5.7 Economic Value Added Analysis (EVA)

Economic value added analysis is used to measure amount of economic profit realized over given period. It is especially useful for investors since it shows how much has company's financial management done in terms of increasing shareholder's wealth. Positive result of EVA analysis means increase in shareholder's wealth, negative means decrease in shareholder's wealth. In contrast to simple accounting profit or loss, EVA takes into account cost of own capital.[66]

[63] KNÁPKOVÁ, A. PAVELKOVÁ, D., *Finanční analýza. Kompletní průvodce s příklady*, p. 132
[64] SEDLÁČEK, J., *Finanční analýza podniku*, p. 111
[65] KNÁPKOVÁ, A. PAVELKOVÁ, D., *Finanční analýza. Kompletní průvodce s příklady*, p. 133
[66] Kislingerová, E. a kol. *Manažerské finance*, p. 94

According to the Czech Ministry of Industry and Commerce EVA is calculated as:

$$EVA = (ROE - r_e) * E,$$ Where:

Re = Alternative expense on equity; E = Equity (Formula 33)

4 Analytical Part

Main focus of the following part of this thesis is to apply various methods of financial analysis introduced above in the theoretical overview together with analysis of information necessary to fulfill the goals set for this thesis. Before application of methods of financial analysis on the company itself, there is short introduction of the selected company – *Vodafone Czech Republic, a.s.* and the mobile telecommunications industry in the Czech Republic.

4.1 Information about Vodafone Czech Republic, a.s.

Vodafone Czech Republic, a.s. is a Czech subsidiary of Vodafone Group, a Britain based multinational mobile telecommunications operator and data service provider. It is the youngest and smallest operator (measured by market share) of three MO's operating on the Czech market.

4.1.1 Basic Facts and Figures[67]

- **Business Name:** Vodafone Czech Republic, a.s.
- **Founded:** 1999 (Český Mobil, a.s.)
- **Shareholders:** Vodafone Group Plc (100 % of shares)
- **Number of employees:** 1,717 (as of March, 2014)
- **Legal Form:** Joint Stock Company
- **Residency:** Vinohradská 167, 100 00 Praha 10
- **Identification No. (IČO):** 25788001

4.1.2 History of the Company

Vodafone's predecessor *Český Mobil*, a.s. (founded 1999) was a subsidiary of Canadian–based Telesystems International Wireless (TIW). TIW entered the Czech telco

[67] Vodafone web: www.vodafone.cz

market by acquiring license to run dual GSM 900/1,800 MHz mobile network on March 1st, 2000 operating under the brand *Oskar*. Český Mobil, a.s. entered the market as the last and smallest MO – a legacy which is defining Vodafone's position as its successor up to this day.

In June 2005 shares of Oskar Mobil, a.s. (Český Mobil's new name since change in 2004) were acquired by Vodafone Group Plc. New mother company decided about the rebranding to "Oskar–Vodafone" and finally only "Vodafone". Since 2005, Vodafone Czech Republic, a.s. has not seen any change in its ownership structure.

4.1.3 Product Portfolio

Vodafone offers wide range of products and services from voice and text services to fixed internet connection. Vodafone provides services to both retail (individuals) and commercial customers (businesses). Additionally, in case of commercial customers' specific services of customized complex information and commutations technology (ICT) solutions are being offered to small, medium and large size businesses.

4.1.4 Customer Base

Due to the fact that Český Mobil, a.s. arrived as the last, it has aimed at the less affluent consumer sector from the very beginning. This meant marketing campaigns mostly targeting younger people and more aggressive price offers. Since 2006 Vodafone prolonged this trend. Also since 2007 by launching Vodafone OneNet service the company started offering mobile, fixed line and internet services to commercial customers.

4.1.5 Geographical Coverage

In geographical terms Vodafone is now (end of 2014) able to cover up to 99.1 % of the Czech Republic's population with mobile voice and text services. Difference between Vodafone Czech Republic and other two large operators is that Vodafone is trying to expand its high speed data network (3G, LTE) to rural areas with ability to cover up to 92 % of population (approx. 76 % of geographical space) by high speed data network.

4.1.6 Virtual Operator

Virtual operators and their impact on the Czech telco market will be examined closely in the next chapter however it should be noted that since 2013 Vodafone owns one mobile virtual network operator (MVNO)[68]– Oskarta. Based on the identity of the previous "Oskar", brand Oskarta offers cheap prepaid voice and text services.

4.2 Mobile Telecommunications Industry in the Czech Republic:

Apart from a short period in early to mid 90s when the market was dominated by (partially) state-owned monopoly, structure of the mobile telco market in the Czech Republic can be seen as a clear example of oligopoly. Next chapter takes a closer look on both historical development and present situation on the market.

4.2.1 Historical Development

By definition, mobile telco market was opened in the Czech Republic in 1991 when company Eurotel Praha, s.r.o. (predecessor of today's O2), joint venture of state owned SPT Telecom, a.s. and US based venture Atlantic West started the first mobile network operating on 450 MHz NMT basis. However, end-user devices and overall scope of offered services were limited and very expensive.

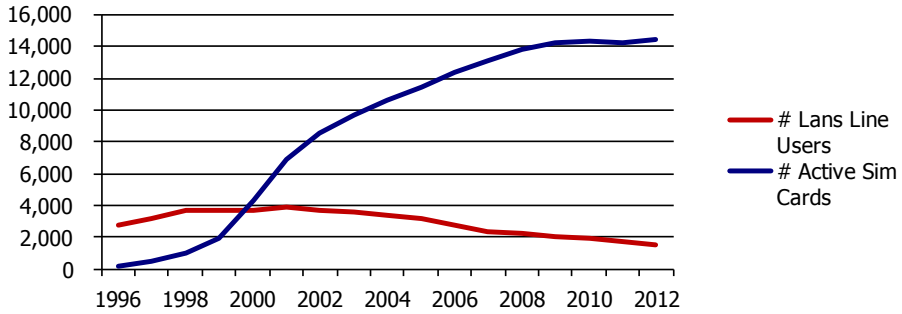
Expansion of mobile telco market truly began in 1996 when Eurotel and newcomer Radiomobil (predecessor of T-Mobile, operating at that time under the brand Pegas) began operating on the network based on 900 MHz GSM technology. As mentioned in the previous chapter, Český Mobil entered the market in 2000. In 2002 majority of Radiomobil's shares was acquired by CMobil B.V., owned by Deutsche Telecom and company was renamed to T-Mobile Czech Republic, a.s. In 2003 Český Telecom, a.s. (former SPT Telecom) bought Atlantic West's shares in Eurotel Praha, s.r.o. and two years later (in 2005) it was sold to Telefónica, S.A. Finally, in 2006 Eurotel Praha, s.r.o. was merged with Český Telecom, a.s. and renamed to Telefónica O2 Czech Republic, a.s. In

[68] MVNO is a mobile telecommunications operator, which does not own wireless network and broadcasting licence and services its customers through access to the network of other operators for wholesale price.

2006 another change in ownership structure took place – acquisition of Česky Mobil, a.s. by Vodafone Group P.L. and its transformation to Vodafone Czech Republic, a.s. Final step towards today's situation on the market was acquisition of 100 % of shares of Telefónica O2 Czech Republic, a.s. by PPF N.V. in 2014. Today, the company's name is O2 Czech Republic, a.s.

As it is apparent from graph below, since the adoption of GSM technology and entrance of the second competitor the mobile telco market has seen a period of rapid growth. As soon as year 2000 number of active SIM cards exceeded that of registered fixed lines. Strong growth fueled by increasing demand, technological innovations and increasing variety of offered services continued well into the future until the slowdown in years 2009/2010.

Graph 1 Fixed Lines vs. Active SIM Cards – Czech Republic, 1996 – 2012 [Thousands of units]



Source: Czech Statistical Office [69]

4.2.2 Present State of the Industry

At the present time mobile telco industry in the Czech Republic is highly saturated. One figure demonstrating this assessment is the number of active SIM cards which exceeds total population of the Czech Republic.[70] As far as mobile devices go, at the end of 2014 almost 96.8 % of population between 16–74 years of age owned some sort of mobile telecommunication device.[71] This is depicted in **penetration rate of approximately 1.3** (number of active SIM cards / population). Decreasing trend of new customer acquisition

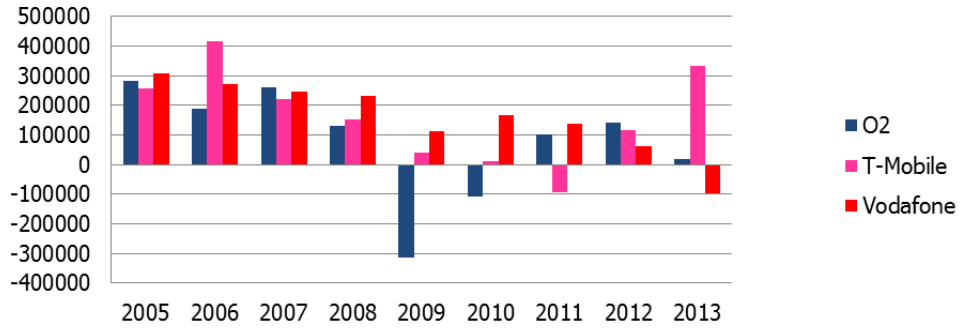
[69] *Telekomunikační a internetová infrastruktura*, Czech Statistical Office, tab. Pevná telefonní síť, tab. Mobilní telefonní síť

[70] According to CZSO Czech Republic has approx 10.5 million inhabitants as of 1.1.2014

[71] *Využívání informačních a komunikačních technologií v domácnostech a mezi jednotlivci 2014*, Czech Statistical Office, tab. 17: Jednotlivci v České republice používající mobilní telefon v letech 2003 až 2014*

is illustrated in a graph below which depicts annual **net adds** (new customers less churn). It has to be noted that a sharp decrease in O2's figures in year 2009 is largely due to change of O2's methodology of counting active SIM cards.[72]

Graph 2 Annual Change in Active SIM Cards by Operators, Czech Republic, 2005 -2013 [Units]



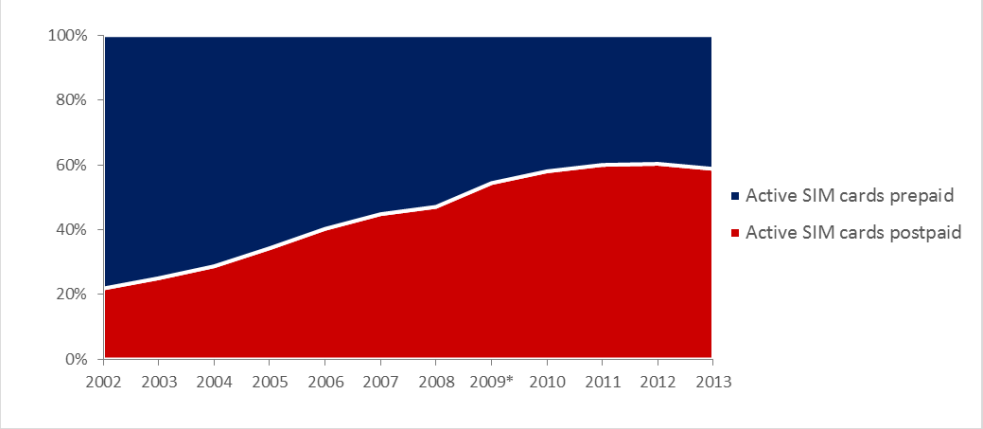
Source: Archiv.cz[73]

In present situation customers began to see mobile telco services as a commodity – their purchasing decisions are based solely on price. This led to significant pressure on product pricing. In April 2013 Telefónica O2 Czech Republic, a.s. started a price war by lowering the price on so called „flat tariffs"[74] by almost a half - a strategy which its competitors adopted in matter of weeks. These changes pushed revenues and gross margins of all of the three main players down significantly.

As it is apparent from the graph below, not only absolute increase in customers decreased in recent years but also the structure of sold product changed. From the launch of the networks to years 2009/2010 prepaid products dominated the customer base of the three largest MOs. However since that time postpaid products took the dominant place.

[72] PETERKA, J., *Jak dopadl přelomový mobilní rok 2013?*, p. 1
[73] PETERKA, J., *Jak dopadl přelomový mobilní rok 2013?*, p. 1
[74] Products allowing the customer to use voice and messaging services (not data services) in any desired amount for a single nominal fee.

Graph 3 Prepaid vs. Postpaid Customers, Czech Republic, 2002 – 2013 [%]



Source: Czech Statistical Office[75]

*Note: * since 2009 methodology has changed for prepaid SIM cards (activity is measured only for last three months instead of 13 months)*

4.2.3 Virtual Operators

Present situation on Czech mobile telco market was heavily influenced by phenomenon – entrance of MVNOs on the Czech telco market. First MVNO on the Czech Market was BLESK Mobil (launched 7.11.2012), which is operating in O2's network and focuses on reselling its prepaid SIM cards. In March 2014 there had been more than 60 MVNOs operating on the Czech market, all of them reselling prepaid product of one of the three main MOs. Significance of this market change can be demonstrated by the fact that as of September 2014 eight largest MVNOs had almost 1 million of active customers. This has much to do with large operators tendency to abandon the prepaid sector (and with it their least creditworthy customers) and „leave" this market segment to newcomers. List of the biggest MVNOs and their customer numbers as of 23.9.2014 is as follows:[76]

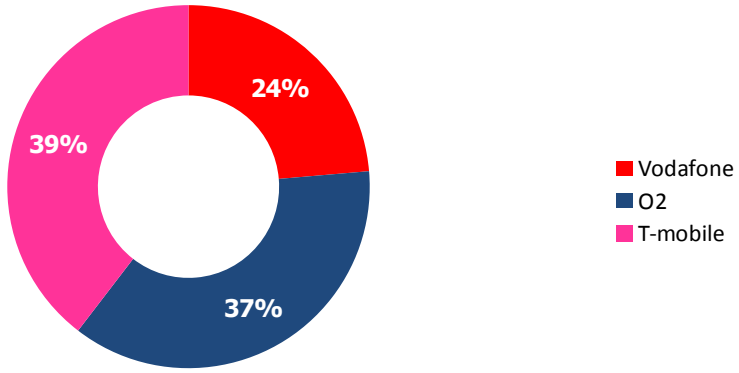
- **BLESK Mobil** 350,000 +
- **Tesco Mobile** 200,000 +
- **Mobil.cz** 130,000 +
- **Sazka Mobil** 85,000 +
- **Mobil od ČEZ** 80,000 -

[75] *Telekomunikační a internetová infrastruktura*, Czech Statistical Office, tab. Mobilní telefonní síť
[76] VÁCLAVÍK, L., *Osm největších virtuálních operátorů má dohromady už milion zákazníků*, p. 1

- **Gloria Mobil** 50,000 +
- **Kaktus** 50,000 +
- **Oskarta** 50,000 +

However, despite the large number of newcomers to the market in form of MVNOs, three largest companies still play a dominant role on the market. As it is illustrated in a chart below, showing market shares of the three main players measured by number of active SIM cards at the end of 2013, two early entrants to the market (O2 and T-Mobile) play an almost an equal role, whereas Vodafone remains the smallest player.

Graph 4 Market Shares by Number of Customers, Czech Republic, end of 2013 [%]



Source: Annual reports of Vodafone, O2, T-Mobile[77]

4.3 Financial Analysis of Vodafone

Next part of the thesis contains detailed analysis of Vodafone Czech Republic a.s. financial statements and several selected non-financial indicators. Following chapters utilize theoretical constructs described in individual chapters of previous part of the thesis and apply given methods of financial analysis in order to fulfill aims of the thesis.

All data used in this chapter are publicly available. Most of the data originate from annual reports of Vodafone Czech Republic, company's website and Czech Telecommunications Office (CTO) reports. Full versions of Vodafone's financial

[77] Annual reports of Vodafone, O2, T-Mobile for 2013

statements can be found in the Annex 1: Balance Sheet of Vodafone and Annex 2: Income Statement of Vodafone.

4.3.1 Analysis of Absolute Indicators

This chapter analyzes development of several selected financial and non-financial indicators. Data are being analyzed in time series between years 2009 to 2013.

Table 1 Analysis of Absolute Indicators, Vodafone Czech Republic, 2009 – 2013 [million CZK; Persons]

Absolute indicators [MM CZK]	2009	2010	2011	2012	2013
Total Assets	16,654	18,451	14,442	14,431	17,028
Revenues	19,422	18,493	17,780	16,512	13,627
EBT	2,921	2,520	2,138	1,255	292
EAT	2,455	1,918	1,721	955	208
# of Employees [persons]	2,055	2,110	2,425	2,411	2,054

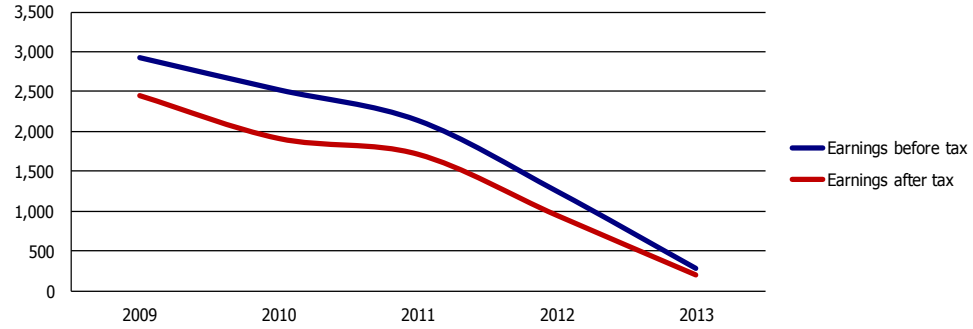
Source: Annual reports of Vodafone

As it is apparent from the table, all of the selected indicators in one way or another reflect development of the Czech telco market as described in previous chapter. Total assets at first dropped to CZK 14.4 bn in 2011 and 2012, then increased again to almost its previous value in 2013. Revenues (which in this case are calculated as sum of sales of goods and sales of own products and services) show continuous decreasing trend from approximately CZK 19.4 bn to CZK 13.6 bn in 2013. Same holds for earnings before and after tax, which has seen dramatic decrease, especially between years 2012 and 2013.

Trend of chosen nonfinancial indicator – number of employees is slightly different. From initial 2,055 employees in 2009 it rose to 2,425 employees in 2011 and 2,411 in 2012 and then dropped again in 2013 (2,054 employees). Decrease in 2013 is most likely a result of effort aiming at reducing operating expenses (OPEX) in wake of drastically decreasing earnings.

Significance of drop in both earnings before and after tax is illustrated in the graph below. As seen in the graph, Vodafone's EBT decreased by approximately 90 % from CZK 2,921 million in 2009 to CZK 292 million in 2013. Earnings after tax decreased by 92 % between 2009 and 2013.

Graph 5 Earnings Development, Vodafone Czech Republic, 2009 – 2013 [million CZK]



Source: Annual reports of Vodafone; own calculation

Detailed analysis of Vodafone's financial indicators their trends and reasons behind those trends behind them is being done in following chapters.

4.3.2 Horizontal Analysis

This chapter contains horizontal analysis of data from financial statements of the Vodafone Czech Republic, a.s. Data are analyzed in time intervals observing change between ends of individual fiscal years[78] starting with 2010/2009 period up to 2012/2013 period.

[78] Fiscal year in Vodafone lasts from 1.4. till 31.3. of the next year.

4.3.2.1 Horizontal Analysis of Balance Sheet

Table 2 Horizontal Analysis of Assets, Vodafone Czech Republic, 2010 – 2013 [million CZK; %]

Assets [MM CZK]	2010/2011		2011/2012		2012/2013	
	abs.	rel.	abs.	rel.	abs.	rel.
Property	0	0.0%	0	0.0%	0	0.0%
Buildings	-391	-19.8%	-158	-13.8%	-222	-22.5%
Other tangible fixed assets	-485	-12.1%	-85	-2.8%	-350	-12.1%
Tangible fixed assets	**-876**	**-14.7%**	**-243**	**-5.9%**	**-572**	**-14.7%**
Intangible fixed assets	+17	+.3%	-610	-9.6%	+2554	+44.7%
Non-current financial assets	0	n/a	-13	-100.0%	+1	n/a
Other fixed assets	**+17**	**+.3%**	**-623**	**-9.8%**	**+2555**	**+44.7%**
Inventories	-79	-30.4%	-54	-27.4%	-13	-9.1%
Long Term Receivables	+10	+2.1%	-60	-11.1%	-13	-2.7%
Short Term receivables	-3091	-89.5%	+738	+26.6%	+465	+13.2%
Cash	+4	+50.0%	-8	-88.9%	+1	+100.0%
Bank Accounts	-87	-70.2%	-37	-32.2%	-2	-2.6%
Current Assets	**-3243**	**-75.1%**	**+579**	**+15.9%**	**+438**	**+10.4%**
Accruals	**+93**	**+34.8%**	**+276**	**+82.1%**	**+176**	**+28.8%**
TOTAL ASSETS	**-4009**	**-24.1%**	**-11**	**-0.1%**	**+2597**	**+18.0%**

Source: Annual reports of Vodafone; own calculation

As it is apparent from the table, amount of total assets showed fluctuating trend. Starting in 2011 where the value of total assets dropped by nearly of quarter (-24.1 %) of the total value in 2010. After stabilization in between years 2011 and 2012 (only a -0.1 % drop in value) total assets increased again significantly (+18 % compared to their 2012 value) in last analyzed period. The initial drop in total assets was mainly due to a decrease in value of current assets, namely short term receivables. On the other hand, increase in 2012/2013 period was driven mainly by increase in fixed assets, namely other intangible fixed assets.

Tangible fixed assets show decreasing trend. Greatest decrease in value took place in 2010/2011 period with -14.7 % drop compared to 2010 value. Decrease by -5.9 % in second period was then followed by another significant drop in value (again -14.7 %) in 2012/2013 period. Decreasing trend in all analyzed period was driven mainly by decrease in value of other tangible fixed assets followed by decrease in value of buildings. Value of property stayed the same over all of the analyzed periods.

While the 2012/2013 increase in other intangible fixed assets is clearly due to purchase of 15 year license to operate on public 2,600 MHz frequency (LTE network) – seen on Vodafone's balance sheet as CZK 2,920 million increase in valuable rights,

2010/2011 drop in short term receivables can be only guessed as a possible selling of these to external parties.

Table 3 Horizontal Analysis of Equity and Liabilities, Vodafone Czech Republic, 2010 – 2013 [million CZK; %]

Equity + Liabilities [MM CZK]	2010/2011		2011/2012		2012/2013	
	abs.	rel.	abs.	rel.	abs.	rel.
Registered Capital	-6680	-82.0%	0	0.0%	0	0.0%
Reserve Funds	-920	-84.3%	0	0.0%	0	0.0%
Financial Result of Previous Periods	-2332	n/a	+721	n/a	+955	+132.5%
Financial Result of Current Period	-197	-8.0%	-766	-44.5%	-747	-78.2%
Equity	**-10129**	**-86.6%**	**-45**	**-1.3%**	**+208**	**+6.0%**
Reserves	-14	-1.7%	-67	-18.5%	+25	+8.5%
Long Term Liabilities	+7000	n/a	0	0.0%	+3000	+42.9%
Current Liabilities	-938	-31.4%	+143	+5.4%	-306	-11.1%
Bank Loans	+88	n/a	-82	-93.2%	-2	-33.3%
Liabilities	**+6136**	**+161.3%**	**-6**	**-.1%**	**+2717**	**+27.0%**
Accruals	**-16**	**-1.4%**	**+40**	**+4.5%**	**-329**	**-35.6%**
TOTAL EQUITY + LIABILITIES	**-4009**	**-24.1%**	**-11**	**-0.1%**	**+2596**	**+18.0%**

Source: Annual reports of Vodafone; own calculation

Vodafone's value of equity decreased sharply between years 2010/2011 with drop of over CZK 10 bn in absolute terms (-86.6 % compared to 2010 value). Other two analyzed periods did not see any similar change with only -1.3 % decrease in value in 2011/2012 period and +6.0 % increase in 2012/2013.

Liabilities have also seen significant change in 2010/2011 period with increase over CZK 6 bn. After static 2011/2012 period (only -0.1 % decrease) liabilities again grew significantly in the last analyzed period by +27.0 %.

First mentioned change in Vodafone's financing structure was brought about by two significant events that took place in 2011. First of all Vodafone Czech Republic's sole shareholder – Vodafone Europe B.V. – decided to decrease value of Vodafone Czech Republic's registered capital from one untradeable share with CZK 8,150 million value to one untradeable share with CZK 1,470 million. Second event was receiving a CZK 7,000 million loan from Vodafone Investment S.á.r.L. Loan from the same source stands also behind 2012/2013 increase in long term liabilities – this time acquired specifically for purchasing of LTE license.

4.3.2.2 Horizontal Analysis of Income Statement

Before the analysis itself it has to be noted that in case of smaller income statement items calculated relative changes may be in some cased hundreds of percent high**.**

Table 4 Horizontal Analysis of Income Statement, Vodafone Czech Republic, 2010 – 2013 [million CZK; %]

P&L Account [MM CZK]	2010/2011		2011/2012		2012/2013	
	abs.	rel.	abs.	rel.	abs.	rel.
Sales of goods	-72	-6.2%	+290	+26.4%	-481	-34.7%
Costs of goods sold	+91	-5.0%	-415	+23.8%	+688	-31.9%
Sales of own products and services	-641	-3.7%	-1558	-9.3%	-2404	-15.9%
Gross margin	**+19**	**-2.9%**	**-125**	**+19.4%**	**+207**	**-26.9%**
Own work capitalised	-10	-6.6%	-27	-19.0%	+24	+20.9%
Total Production	**-651**	**-3.7%**	**-1585**	**-9.4%**	**-2380**	**-15.6%**
Consumed material and energy	+63	+15.1%	-88	-18.3%	0	0.0%
Services	+101	+1.3%	-364	-4.5%	-703	-9.0%
Staff costs	-53	-2.4%	-107	-5.0%	-286	-14.2%
Total operating expenses	**+111**	**+1.0%**	**-559**	**-5.2%**	**-989**	**-9.7%**
Depreciation	-556	-15.7%	-70	-2.3%	-44	-1.5%
Total other operating expenses	**+245**	**+272.2%**	**-162**	**-48.4%**	**-329**	**-190.2%**
Operating profit or loss	**-334**	**-13.1%**	**-756**	**-34.2%**	**-977**	**-67.1%**
Total other expenses and income	**-59**	**+842.9%**	**-134**	**+203.0%**	**+38**	**-19.0%**
Earnings before tax	**-382**	**-15.2%**	**-883**	**-41.3%**	**-963**	**-76.7%**
Income tax	-185	-30.7%	-117	-28.1%	-216	-72.0%
Earnings after tax	**-197**	**-10.3%**	**-766**	**-44.5%**	**-747**	**-78.2%**

Source: Annual reports of Vodafone; own calculation

First significant trend on Vodafone's income statement is increasing drops in revenues. Decrease in sales of own products and services gradually went from -3.7 % drop in 2010/2011 period through more than a double the value in 2011/2012 (-9.3 %) to almost 16 % drop in period 2012/2013 accounting for decrease of almost CZK 2.5 bn between years 2012 and 2013.

Positive trend for the company is its decreasing OPEX. From the slight increase in 2010/2011 period (+1.0 %) OPEX had been gradually decreasing: in 2011/2012 period -5.2 % and in the last period for -9.7 % with almost a billion of CZK decrease in absolute terms. Given decrease in OPEX resulted mainly from decrease in services item and slightly less from decrease in staff costs.

As seen in chapter 4.3.1 Analysis of Absolute Indicators, together with sharply decreasing revenues also earnings before tax have seen significant decreasing trend, namely from CZK -382 million of absolute decrease between years 2010/2011 to CZK -883 million of absolute decrease in second period to almost a billion CZK decrease (CZK -

977 million in absolute terms) in the last analyzed period. Same trend applies to earnings after tax.

Overall negative trend impacting company's financial result is most probably due to several coexisting factors negatively influencing the Czech telco industry as a whole (see chapter 4.2.2 Present State of the Industry). Above all, pressure on decreasing prices, heavy competition and decrease in number of new acquisitions due to market saturation together with events like April 2013 flat tariff revolution push Vodafone's revenues, cost and earnings in undesirable directions.

4.3.3 Vertical Analysis

This chapter contains vertical analysis of data from financial statements of Vodafone Czech Republic, a.s. Data are being analyzed in time series containing years 2011 to 2013.

4.3.3.1 Vertical Analysis of Balance Sheet

Table 5 Vertical Analysis of Assets, Vodafone Czech Republic, 2011 – 2013 [million CZK; %]

Assets [MM CZK]	2011		2012		2013	
	abs.	rel.	abs.	rel.	abs.	rel.
Property	1	0.0%	1	0.0%	1	0.0%
Buildings	1,143	27.7%	985	25.3%	763	23.0%
Other tangible fixed assets	2,985	72.3%	2,900	74.6%	2,550	76.9%
Tangible fixed assets	**4,129**	**28.6%**	**3,886**	**26.9%**	**3,314**	**19.5%**
Intangible fixed assets	6,323	99.8%	5,713	100.0%	8,267	100.0%
Non-current financial assets	13	0.2%	0	0.0%	1	0.0%
Other fixed assets	**6,336**	**43.9%**	**5,713**	**39.6%**	**8,268**	**48.6%**
Inventories	197	5.4%	143	3.4%	130	2.8%
Long Term Receivables	541	14.9%	481	11.4%	468	10.0%
Short Term receivables	2,779	76.3%	3,517	83.3%	3,982	85.5%
Cash	9	0.2%	1	0.0%	2	0.0%
Bank Accounts	115	3.2%	78	1.8%	76	1.6%
Current Assets	**3,641**	**25.2%**	**4,220**	**29.2%**	**4,658**	**27.4%**
Accruals	**336**	**2.3%**	**612**	**4.2%**	**788**	**4.6%**
TOTAL ASSETS	**14,442**	**100.0%**	**14,431**	**100.0%**	**17,028**	**100.0%**

Source: Annual reports of Vodafone; own calculation

As it is apparent from the table above, overall assets structure changed only slightly in course of years 2011 to 2013. Current to fixed assets ratio remained roughly the same (approx. 70/30 in favor of fixed assets), with slight increase in year 2012.

Overall value of fixed assets was through all of the analyzed periods constituted mainly by other fixed assets with ratio approx. 60/40. Tangible fixed assets were mostly created by other tangible fixed assets – a result of ownership of huge network of wireless broadcasting equipment. Other fixed assets were constituted mainly from intangible assets, again

a consequence of company's operating activity since this item contains not only software needed for operating large telecommunications network but also valuable rights including licenses allowing Vodafone to operate on public frequencies.

Dominant role in composition of Vodafone's current assets was played by short-term receivables. Inventories much like liquid assets like cash and bank account created only

a small portion of overall current assets. Large amount of short term receivables on Vodafone's balance sheet and their increasing trend is mainly due to large number of trade receivables resulting from company's business model which uses largely selling of services on invoice (postpaid product segment).

Table 6 Vertical Analysis of Equity and Liabilities, Vodafone Czech Republic, 2011 – 2013
[million CZK; %]

Equity + Liabilities [MM CZK]	2011		2012		2013	
	abs.	rel.	abs.	rel.	abs.	rel.
Registered Capital	1,470	42.2%	1,470	42.7%	1,470	40.3%
Reserve Funds	294	8.4%	294	8.5%	294	8.1%
Financial Result of Previous Periods	0	0.0%	721	21.0%	1,676	45.9%
Financial Result of Current Period	1,721		955		208	
Equity	**3,485**	**24.1%**	**3,440**	**23.8%**	**3,648**	**21.4%**
Reserves	362	3.6%	295	2.9%	320	2.5%
Long Term Liabilities	7,000	69.5%	7,000	69.5%	10,000	78.2%
Current Liabilities	2,624	26.0%	2,767	27.5%	2,461	19.2%
Bank Loans	88	0.9%	6	0.1%	4	0.0%
Liabilities	**10,074**	**69.8%**	**10,068**	**69.8%**	**12,785**	**75.1%**
Accruals	**883**	**6.1%**	**923**	**6.4%**	**594**	**3.5%**
TOTAL EQUITY + LIABILITIES	**14,442**	**100.0%**	**14,431**	**100.0%**	**17,027**	**100.0%**

Source: Annual reports of Vodafone; own calculation

Vodafone's equity to liabilities ratio has seen slowly increasing trend starting at roughly 70/30 in favor of liabilities in 2011 to roughly 75/25 in 2013. However it has to be noted that in years prior to 2011 (2009, 2010) the ratio of equity and liabilities was exact opposite – with dominant role of registered capital on Vodafone's balance sheet.

Amount of equity was mainly composed of financial result of previous or current period (CZK 0 + 1,721 million in 2011; CZK 1,676 + 208 million in 2013) and registered capital, which after its reduction in 2011 remained the same until 2013 with value of CZK 1,470 million.

Through all of the analyzed years liabilities had been mainly comprised of long term liabilities. Value of long term liabilities remained the same in 2011 and 2012 with value of CZK 7,000 million (loan by Vodafone Investment S.á.r.L) and increased to CZK 10,000 million in 2013 (investment loan for purchase of LTE license).

Structure of Vodafone's equity and liabilities and its development clearly shows shareholder's intention to switch structure of Vodafone's financing from own to external sources – a change brought about by decrease in value of registered capital and later by large sums in investment loans.

4.3.3.2 Vertical Analysis of Income Statement

Table 7 Vertical Analysis of Income Statement, Vodafone Czech Republic, 2011 – 2013 [million CZK; %]

P&L Account [MM CZK]	2011		2012		2013	
	abs.	rel.	abs.	rel.	abs.	rel.
Sales of goods	1,097	6.5%	1,387	9.1%	906	7.0%
Costs of goods sold	-1,742	-10.4%	-2,157	-14.2%	-1,469	-11.4%
Sales of own products and services	16,683	99.2%	15,125	99.2%	12,721	98.9%
Gross margin	**-645**	**-3.8%**	**-770**	**-5.1%**	**-563**	**-4.4%**
Own work capitalised	142	0.8%	115	0.8%	139	1.1%
Total Production	**16,825**	**100.0%**	**15,240**	**100.0%**	**12,860**	**100.0%**
Consumed material and energy	-481	4.5%	-393	3.9%	-393	4.3%
Services	-8,148	75.8%	-7,784	76.3%	-7,081	76.9%
Staff costs	-2,126	19.8%	-2,019	19.8%	-1,733	18.8%
Total operating expenses	**-10,755**	**100.0%**	**-10,196**	**100.0%**	**-9,207**	**100.0%**
Depreciation	-2,996	80.9%	-2,926	83.9%	-2,882	85.4%
Total other operating expenses	**-3,704**	**100.0%**	**-3,488**	**100.0%**	**-3,374**	**100.0%**
Operating profit or loss	**2,211**	**100.0%**	**1,455**	**100.0%**	**478**	**100.0%**
Total other expenses and income	**-66**	**100.0%**	**-200**	**100.0%**	**-162**	**100.0%**
Earnings before tax	**2,138**	**100.0%**	**1,255**	**100.0%**	**292**	**100.0%**
Income tax	-417		-300		-84	
Earnings after tax	**1,721**		**955**		**208**	

Source: Annual reports of Vodafone; own calculation

From examination of vertical composition of Vodafone's revenues it is apparent that dominant part is made of sales of own goods and services, approximately 99 % over the whole analyzed periods. On the other hand sales of goods create much smaller margin of total revenues ranging from 6.5 % in 2011 to 9.1 % in 2012. This category represent

mainly end-user devices such as mobile phones and modems, which customers may receive for subsidized price, at reduced price or sold for installments.

OPEX play significant role on Vodafone's income statement with value of over 2/3 of that of total production in all analyzed period. The largest OPEX group on Vodafone's income statement are expenses on services which make up approximately 76 % in all three years. Another significant OPEX item are staff costs which make up around 20 % of total OPEX. As far as the other OPEX are concerned, only significant item is deprecation which created 80.9 % (2011) to 85.4 % (2013) of total other OPEX.

Due to negative gross margin, large OPEX and depreciation, operating profit of Vodafone has been fairly low compared to total production. Increasing of other expenses (namely due to rise in interest expenses) pushed EBT even lower. When compared to total production, EBT's percentage value dropped from 12.7 % in 2011 to only 2.3 % in 2013.

Structure of Vodafone's revenues (dominance of sales of own products and services) is in line with company's business model – revenues from sold voice, text and data services. Revenues from sales of goods are being done mostly by selling mobile hand held devices but it has to be noted that company is actually losing money on those – a consequence of long term shift of consumer behavior and technology of mobile hand held devices. Large depreciation cost is results oh Vodafone's nature as MO with large network wireless broadcasting network.

4.3.4 Analysis of Differential Indicators

Next chapter introduces so called differential indicators, i.e. net working capital (NWC) and net liquid assets. Both indicators serve to measure company's ability to meet its day-to-day financing needs.

4.3.4.1 Analysis of Net Working Capital

Table 8 Net Working Capital, Vodafone Czech Republic, 2009 – 2013 [million CZK]

Net Working Capital	2009	2010	2011	2012	2013
Current Assets	4,317	6,884	3,641	4,220	4,658
Current Liabilities	2,989	3,562	2,624	2,767	2,461
Net working capital	1,328	3,322	1,017	1,453	2,197

Source: Annual reports of Vodafone; own calculation

Vodafone has retained positive value of net working capital all throughout the 2009 – 2013 period. The value of net working capital has been steadily increasing with spike in year 2010 (CZK 3,322 million) from CZK 1,328 million in 2009 to CZK 2,197 million in 2013.

Despite the fact that positive value of net working capital is generally seen as beneficial for the company, Vodafone's composition of current assets has to be taken into account. As it has been stated in chapter 4.3.3.1 Vertical Analysis of Balance Sheet, vast majority (almost 82 % in years 2011 – 2013) of Vodafone's current assets is created by short term receivables. In such a case also the receivables turnover period has to be taken into account (95 days on average in 2009 – 2013 period).

4.3.4.2 Analysis of Net Liquid Assets

Table 9 Net Liquid Assets, Vodafone Czech Republic, 2009 – 2013 [million CZK]

Net Liquid Assets	2009	2010	2011	2012	2013
Cash	8	5	9	1	2
Bank Accounts	124	202	115	78	76
Current Liabilities	2,989	3,562	2,624	2,767	2,461
Net Liquid Assets	-2,857	-3,355	-2,500	-2,688	-2,383

Source: Annual reports of Vodafone; own calculation

Due to the limitations of the net working capital indicator, the net liquid assets indicator was used to examine company's relationship between current assets and short term receivables. Unlike net working capital, net liquid assets indicator was deeply in negative numbers all throughout 2009 – 2013 period. Value of Vodafone's net liquid assets showed generally stable trend with negative spike in 2010 (CZK -3,355 million) moving from CZK -2,857 million in 2009 to CZK -2,383 million in 2013.

It is obvious from the table above that company has clearly very little cash and cash equivalent compared do other current assets (such as short term receivables). Possible reason for this strategy may be company's strong position on the market (and the market structure itself) which allows Vodafone not to over-liquify and invest its cash into more profitable ventures avoiding opportunity cost.

4.3.5 Balance Rules Analysis

Table below shows result of individual balance rule calculations described in the theoretical part of the thesis. Last column of the table shows if company met requirement for given balance rule in respective year – green highlight; or if it did not – red highlight.

Table 10 Balance Rules Analysis, Vodafone Czech Republic, 2009 – 2013 [million CZK; index]

Balance Rules [MM CZK]	2009	2010	2011	2012	2013	Score
Golden Balance Rule	-2,013	-1,584	-1,251	-534	506	
Golden Rule of Settlement Risk	7,891	9,676	-6,589	-6,628	-9,137	
Golden Pari Rule	-374	2,290	-6,980	-6,159	-7,934	
Golden Ratio Rule	-0.02	-0.04	-0.01	0.38		
Revenue Growth	1.05	1.04	1.08	1.21	n/a	
Investment growth	1.07	1.08	1.09	0.83	n/a	

Source: Annual reports of Vodafone; own calculation

Golden Balance Rule – From all calculated years, Vodafone Czech Republic managed to meet the requirement of golden balance rule in year 2013 only meaning that over the 2009 – 2012 period Vodafone's value of fixed assets significantly overweighed that of Vodafone's long term sources of financing. Despite negative results improving trend can be seen.

Golden Rule of Settlement Risk – In years 2009 and 2010 Vodafone managed to meet the requirement of golden rule of settlement risk: its equity was higher than its liabilities. However, due to change in financing approach mentioned in earlier chapters Vodafone since year 2010 relies heavily on external sources of financing resulting in the negative score in years following 2010 change.

Golden Pari Rule – Vodafone managed to meet the requirement of golden pari rule only in year 2010, meaning that its fixed assets overweight value of its shareholder's equity. Positive result in 2010 is due to increase in total sum of equity by

CZK 2,500 million thanks to financial result of previous periods. Due to the present approach of Vodafone's shareholder it is likely that the company will not meet requirement of golden pari rule in upcoming years.

Golden Ratio Rule – Despite the fact that the growth of investment was higher in absolute terms over the growth of revenues in four of five analyzed periods (2009 – 2012), the difference between the two figures was low enough for them to be considered equal and therefore indicating that Vodafone maintained balanced investment policy. Due to slightly fluctuating positive trend it could be expected that Vodafone will meet or be very close to meeting the requirement of golden ratio rule in upcoming years.

4.3.6 Ratio Indicators

Following chapter contain application of methods of financial ratio analysis as described in respective chapter of the theoretical part of this thesis. Ratios will be examined in time series from years 2009 to 2013.

4.3.6.1 Activity Ratios

Table 11 Activity Ratios, Vodafone Czech Republic, 2009 – 2013

Activity ratios	2009	2010	2011	2012	2013
Total assets turnover	1.17	1.00	1.23	1.14	0.80
Fixed assets turnover	1.61	1.63	1.70	1.72	1.18
Inventories turnover	74.70	67.00	90.25	115.47	104.82
Receivables turnover	4.95	2.89	5.36	4.13	3.06
Short term payables turnover	6.50	5.19	6.78	5.97	5.54

Source: Annual reports of Vodafone; own calculation

Total Assets Turnover – In period between 2009 and 2012 Vodafone managed to keep its total assets turnover above recommended minimal value of 1. Despite that, since 2011 value of this indicator has been decreasing up to the point, where it dropped in 2013 below the threshold (to the level 0.80). However, it has to be noted that Vodafone had done huge investment in 2013 (LTE license) so the drop may very likely be temporary.

Fixed Assets Turnover – This indicator has kept stable trend until 2013. And the drop is due to the same reason as described above. This indicates that despite unfavorable value at the end of the analyzed period, Vodafone is utilizing its fixed assets properly.

Table 12 Activity Ratios, Vodafone Czech Republic, 2009 – 2013 [Days]

Activity ratios [days]	2009	2010	2011	2012	2013
Total assets turnover	312.98	364.17	296.48	319.00	456.10
Fixed assets turnover	226.83	223.50	214.83	212.19	310.22
Inventories turnover	4.89	5.45	4.04	3.16	3.48
Receivables turnover	73.76	126.34	68.16	88.38	119.19
Short term payables turnover	56.17	70.30	53.87	61.16	65.92

Source: Annual reports of Vodafone; own calculation

Due to the nature of measurement and following comparison to national average inventories turnover, receivables turnover and short term payables turnover ratios will be analyzed as measured in days.

Inventories turnover – Vodafone managed to stay deeply in the most favorable interval (30 days and less) through all of the analyzed period (moving from 4.9 days in 2009 to 3.5 in 2013) indicating that Vodafone is highly effective in managing its inventories and by doing so avoiding unnecessary costs.

Receivables turnover – Not so positive result can be seen in case of receivables turnover period. In the analyzed period Vodafone remained well above national average (36 days)[79] – this result is most probably due to large number of postpaid segment customers paying by invoice.

Short term payables turnover – As described in theoretical part desired value of payables turnover for the company is value larger than that of receivables turnover. Vodafone through all of the analyzed period never met this criterion.

4.3.6.2 Liquidity Ratios

Table 13 Liquidity Ratios, Vodafone Czech Republic, 2009 – 2013

Liquidity Ratios	2009	2010	2011	2012	2013
Current ratio	1.44	1.93	1.39	1.53	1.89
Quick ratio	1.36	1.86	1.31	1.47	1.84
Cash position ratio	0.04	0.06	0.05	0.03	0.03
Cash ratio	0.04	0.06	0.05	0.03	0.03

Source: Annual reports of Vodafone; own calculation

[79] *Průměrná lhůta splatnosti faktur se zkrátila o 13 dní*, s. 1

Current ratio – Value of this indicator oscillated around the recommended minimum of 1.5 managing to get above this level in 2010 (1.93), 2012 (1.53) and 2013 (1.89). In the rest of the analyzed period Vodafone stayed slightly below the recommended minimum. Problem however is undesirable structure of current assets, especially the dominating value of short term receivables.

Quick ratio – Despite the fact that Vodafone was able to stay above the recommended minimum of value of 1 throughout the whole period 2009 – 2013, overall composition of Vodafone's current assets has to be taken into account. Due to the fact that inventories take up only a marginal space on company's balance sheet and that the most of the current assets comprise of short term receivables (which also have above average long collection period), both current ratio and quick ratio have only limited informative value when it comes to liquidity measurement.

Cash position ratio, cash ratio – The cash position and cash ratio will be considered as single indicator since Vodafone did not have any other financial assets other than cash and cash equivalents throughout the whole analyzed period. Vodafone never managed to stay above recommended minimum of 0.2. Best value achieved was 0.06 in 2010, worst 0.03 in 2013. Values as low indicate serious irregularities in company's cash management strategy.

4.3.6.3 Profitability Ratios

Table 14 Profitability Ratios, Vodafone Czech Republic, 2009 – 2013

Profitability Ratios	2009	2010	2011	2012	2013
ROS	0.13	0.10	0.10	0.06	0.02
ROA	0.15	0.10	0.12	0.07	0.01
ROCE	0.25	0.19	0.20	0.12	0.02
ROE	0.21	0.14	0.49	0.28	0.06

Source: Annual reports of Vodafone; own calculation

ROS – Value of this indicator followed significant decreasing trend. From 0.13 in 2009 it dropped to 0.02 in 2013. This means that in the most recent period every 1 CZK of revenues was transformed to 0.02 CZK of profit (EAT). Such values indicate need of more efficient management of expenses (in Vodafone's case huge OPEX especially spent on services).

ROA – In Vodafone's case the values are again really low and decreasing. From 0.15 in 2009 Vodafone's ROA decreased to 0.01 in 2013 (with slight increase in 2012). This means that for every 1 CZK of assets the company was generating between 0.15 and 0.01 CZK in earnings. This indicates certain production ineffectiveness.

ROCE – Like previous ratios, value of this indicator was decreasing in time. From 0.25 in 2009 it decreased to 0.02 in 2013. Again, calculated values are fairly low meaning that for example in 2013 for every 1 CZK of long term liabilities and equity Vodafone realized only 0.02 CZK in earnings before tax.

ROE – Unlike previous indicators, Vodafone's ROE showed fluctuating trend. It shows that for every 1 CZK of equity the company was able to generate 0.06 – 0.49 CZK in earnings after tax. The peak was achieved in 2011. For shareholder the instability of the indicator could be disadvantageous.

4.3.6.4 Leverage Ratios

Table 15 Leverage Ratios, Vodafone Czech Republic, 2009 – 2013

Leverage Ratios	2009	2010	2011	2012	2013
Debt ratio	0.18	0.19	0.67	0.68	0.73
Long term debt ratio	0.00	0.00	0.48	0.49	0.59
Current debt ratio	0.18	0.19	0.18	0.19	0.14
Debt to equity ratio	0.26	0.26	2.76	2.84	3.42
Fixed assets coverage	0.97	1.20	1.00	1.09	1.18
Interest coverage	365.13	2,520.00	101.81	11.84	3.40

Source: Annual reports of Vodafone; own calculation

Debt ratio – Vodafone managed in first two years to stay below maximum recommended threshold of 0.6. Since 2011 value of debt ratio indicator exceeded recommended maximum and has been increasing from 0.67 in 2011 to 0.73 in 2013. Sudden increase in 2011 and further development is clearly affected of CZK 7 bn loan received in 2011.

Long term debt ratio – As mentioned above, long term loan received in 2011 plays obvious role in development of this indicator, especially since Vodafone had no long term liabilities prior to 2011.

Current debt ratio – Values of this indicator have been stable during analyzed period – moving from 0.18 in 2009 to 0.14 in 2013. More importantly, values of this ratio show greater significance of long term liabilities on Vodafone's balance sheet.

Debt to equity ratio – As expected prior to 2011 Vodafone was very well able to stay below recommended threshold value of 1.5. However, 2011 long term loan combined with CZK 6.6 bn decrease in registered capital moved values of this ratio to approximately 2.8 in 2011 and 2012. Another investment loan in 2013 moved the value to 3.42.

Fixed assets coverage – For most of the analyzed period value of this indicator oscillated slightly above borderline value of 1 moving from 0.97 in 2009 to 1.18 in 2013. Even though the value exceeds the recommended maximum, it does do by such a small amount that it does not imply Vodafone's overcapitalization.

Interest coverage – Much like the rest of the liquidity indicators interest coverage was significantly influenced by 2011 loan. Since period to 2011 Vodafone had very little interest expenses the values dropped from 2,520 in 2010 to 3.42 in 2013.

4.3.7 Pyramid ROE Decomposition

Next chapter contains analysis of (Du Pont) pyramid ROE decomposition, which is an analytical method closely related to financial ratio indicators examined in previous chapter. Effects of individual ratios on ROE and ROA are described using data from Vodafone Czech Republic's financial statements. Analysis is based on data from years 2009 to 2013.

Table 16 Pyramid ROE Decomposition, Vodafone Czech Republic, 2009 – 2013

Pyramid ROE Decomposition	2009	2010	2011	2012	2013
ROE	0.21	0.14	0.49	0.28	0.06
ROA	0.15	0.10	0.12	0.07	0.01
Financial leverage	1.42	1.36	4.14	4.20	4.67
ROS	0.13	0.10	0.10	0.06	0.02
Total assets turnover	1.17	1.00	1.23	1.14	0.80
Financial leverage	1.42	1.36	4.14	4.20	4.67

Source: Annual reports of Vodafone; own calculation

Keeping in mind that ROA is calculated as a multiplication of ROS and total assets turnover, it is apparent that this ratio has over the analyzed period been mostly influenced by positive total assets turnover figures. With relatively stable ROS in years prior to 2011, ROA value oscillated only slightly. However, decreasing revenues pushing down the value of total assets turnover (despite decrease in current assets in 2011) combined with sharply decreasing earnings pushing down ROS resulted in drop of ROA to only 0.01 in 2013 (also a 2013 increase in long term intangible assets should be noted).

Years 2011 and 2012 clearly demonstrate the way, in which increase in liabilities increases return on shareholders' equity. Amount, to which the company is being financed by debt, is illustrated by financial leverage – a ratio of total assets and shareholder's equity. However, despite further increase in liabilities in 2013 return on equity sharply dropped as a result of drop in EAT.

Best overall result Vodafone had in 2011 where increase ROE was positively influence both by increase in financial leverage and increase in ROS and total assets turnover. Worst result on the other hand had been in 2013 where drop in earnings pushed ROS to only 0.2 (also with much lesser influence of decreasing revenues lowering the total assets turnover ratio).

Overall development may shed certain light on Vodafone Europe's 2011 decision to replace funding by equity with large long term loan, i.e. external source of finance. In 2011 and slightly in following year ROE indeed increased but as plummeting revenues paired up with practically stagnant OPEX pushed earnings down, so it in the end reached its historical minimum in 2013 (0.06).

Trend of all the component ratios indicates that Vodafone's biggest challenge is OPEX management. This factor must inevitably be changed if company is to be in danger of being sold by its shareholders.

4.3.8 Bankruptcy Models

Altman's Z-score and index IN05 were calculated based on data from years 2009 – 2013.

Table 17 Z-score, Vodafone Czech Republic, 2009 – 2013

Altman Z-score	2009	2010	2011	2012	2013
EBT / Total Assets	0.18	0.14	0.15	0.09	0.02
Sales / Total Assets	1.17	1.00	1.23	1.14	0.80
Equity / Total Liabilities	3.07	3.46	0.35	0.34	0.29
Retained Earnings from Previous Periods / Total Assets	0,00	0.13	0.00	0.05	0.10
Net Working Capital / Total Assets	0.08	0.18	0.07	0.10	0.13
Z-score	**3.69**	**3.92**	**2.01**	**1.83**	**1.32**

Source: Annual reports of Vodafone; own calculation

Result show that Vodafone's Z-score regarding bankruptcy identification has been decreasing since 2010 (value 3.92) till 2013 (value 1.32). According to the provided intervals Vodafone's evaluation was positive in 2009 and 2010 (Safe Zone) when the results implied no future financial problems. Then, as the score dropped below the threshold 2.9 but still remained above 1.2, Vodafone's situation moved to the Gray Zone. Here, the company does not face imminent danger of bankruptcy but some financial challenges are present.

The worsening of the position of Vodafone has emerged from changes in equity and long term loan described above that led to huge drop of EBT. First of the components, EBT over total assets has the highest weight in this indicator. Negative trend of EBT / total assets component as well as other items brought Vodafone close to the third interval - imminent danger of bankruptcy. Bankruptcy is due to very nature of the company not a possible threat, but better financial management is to be recommended.

Table 18 Index IN05, Vodafone Czech Republic, 2009 – 2013

IN05 Index	2009	2010	2011	2012	2013
Total Assets / Total Liabilities	4.38	4.69	1.43	1.43	1.33
EBT / Interest	365.13	2 520,00	101.81	11.84	3.40
EBT / Total Asset	0.18	0.14	0.15	0.09	0.02
Revenues / Total Asset	1.11	0.95	1.17	1.06	0.76
Current Assets/(Curr.Liabilities+Short Term Bank Loans)	1.44	1.93	1.34	1.52	1.89
IN05	**16.23**	**102.32**	**5.21**	**1.36**	**0.71**

Source: Annual reports of Vodafone; own calculation

Index IN05 reached excellent values in 2009–2011, when it exceeded the threshold of 2.0 putting the company into the Safe Zone. The highest result in 2010 (102.32) was caused by high ratio of EBT over interest because the low level of loan financing pushed interest expense down as well. Substantial changes in 2011 and further influenced

particularly EBT over total asset indicator that has far the largest weight in the calculation (3.97). The IN05 value fell down below the value of 2.0 as soon as 2012 (1.36) and collapsed further to 0.71 in 2013. Therefore, the company moved from Safe Zone to Gray Zone in 2012 and further to the risky category with high probability of bankruptcy.

Again, it is improbable that Vodafone would go bankrupt in the short time horizon but the company achieves low profit which is unfavourable for such a type of calculation.

4.4 Analysis of Industry

Following part of the thesis contains comparison of values of chosen indicators between all three large MOs on the Czech telco market. Aim of this comparison is to properly assess Vodafone Czech Republic's position on the market and evaluate its operating and production performance.

Data analyzed in this part originate from financial statement made public in annual reports of all mentioned MOs. Data are analyzed based on time series in years 2009 to 2013.

4.4.1 Revenues

This chapter compares revenues of each of the MOs. This serves as an analysis of their operating performance, their ability to turn their goods and services into value on the market.

Table 19 Revenues by Operator, Czech Republic, 2009 – 2013 [million CZK]

Revenues [MM CZK]	2009	2010	2011	2012	2013
Vodafone	19,422	18,493	17,780	16,512	13,627
T-Mobile	30,275	28,662	26,294	25,270	22,732
O2	31,021	28,592	26,126	24,532	21,897

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

When comparing revenues (in this case calculated as a sum of sales of own products and services and sales of goods) it is possible to see that Vodafone's position compared to the rest of the industry is directly in line with its market share. While T-Mobile and O2's total sum of revenues is very similar in value moving from slightly over CZK 31 bn in 2009 to approximately CZK 22 bn in 2013, Vodafone has always been approximately CZK 10 bn below its competitors.

Table 20 Annual Revenues per Customer by Operator, Czech Republic, 2009 – 2013 [CZK]

Rev. / Cust. [CZK]	2009	2010	2011	2012	2013
Vodafone	6,697	6,150	5,602	4,907	4,155
T-Mobile	5,541	5,235	4,886	4,596	4,135
O2	6,273	5,909	5,287	4,826	4,293

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Due to the fact that Vodafone is the smallest and the youngest of all MOs on the Czech telco market, average revenues per customer (ARPU, average revenue per user) works as a better indicator of its operating ability. As it is apparent from the table above annual revenues per customer are unlike total sum of revenues very similar among all three MOs ranging from almost CZK 6,700 in 2009 to approximately CZK 4,100 in 2013 for all three operators. With exception of 2013 Vodafone actually managed to be the first even though the differences are marginal.

Monthly revenues per customer in 2013 range between CZK 345 and 358, which is blended average for both prepaid and postpaid customers. Usually, monthly revenues from prepaid customers are below CZK 200, whereas monthly revenues from postpaid customers exceed the level of CZK 500.

Table 21 Annual Revenues per Employee by Operator, Czech Republic, 2009 – 2013 [million CZK]

Rev. / Emp. [MM CZK]	2009	2010	2011	2012	2013
Vodafone	9.5	8.8	7.3	6.8	6.6
T-Mobile	10.6	9.9	8.9	8.9	8.4
O2	3.9	4.1	4.1	4.2	4.3

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

To complete the comparison, annual revenues per employee are taken into account as an indicator of Vodafone's internal operating effectiveness. Ranking of each of the MOs in case of annual revenues per employee is again different from the results of previous comparisons. It is apparent from the table that the highest value of this indicator is achieved by T-Mobile followed by Vodafone and O2. Second position for Vodafone in this indicator is given by the fact that despite smallest revenues it also has smallest number of employees and such it work and operates more effectively. O2's last position is in contrast

and is caused by the fact that for most of the analyzed period O2 had more than twice as many employees as either one of other players on the Czech telco market.

4.4.2 Earnings

Analysis of earnings serves as an indicator of how well each of the three MOs manages its expenses, i.e. their ability to turn the revenues into profit for shareholders. For the comparison of earnings operating profit has been chosen as an indicator due to the fact that it omits taxes and interest expenses, giving a clearer picture of company's operating effectiveness without regard to its tax conditions and sources of funding

Table 22 Operating Profit by Operator, Czech Republic, 2009 – 2013 [million CZK]

Operating Profit [MM CZK]	2009	2010	2011	2012	2013
Vodafone	2,680	2,545	2,211	1,455	478
T-Mobile	11,340	10,528	8,975	8,592	7,120
O2	15,764	15,844	9,780	7,405	6,216

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

With O2 being the lead player until 2012, where the lead role was overtaken by T-Mobile, it is apparent that Vodafone was deeply behind its competitors through all of the analyzed period. This difference got even more significant with Vodafone's drop in earnings in 2012 and 2013 when the value of its operating profit got lesser than 1/10 of second player (O2), that is CZK 478 million for Vodafone and CZK 6,216 million for O2.

Table 23 Operating Profit per Employee by Operator, Czech Republic, 2009 – 2013 [million CZK]

Operating Profit / Emp. [MM CZK]	2009	2010	2011	2012	2013
Vodafone	1.3	1.2	0.9	0.6	0.2
T-Mobile	4.0	3.6	3.0	3.0	2.6
O2	2.0	2.3	1.5	1.3	1.2

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Earnings per employee were also unfavorable for Vodafone, despite the fact that the indicator of revenues per employee was fully comparable with others. Here, Vodafone reached annual earnings CZK 1.3 million per employee in 2009, then the indicator

decrease to the level of CZK 0.2 million in 2013. Such an immense drop was not observed in case of O2 or T-Mobile even though all of mobile operators report decreasing earnings.

4.4.3 Net Working Capital

Table 24 Net Working Capital by Operator, Czech Republic, 2009 – 2013

NWC [MM CZK]	2009	2010	2011	2012	2013
Vodafone	1,328	3,322	1,017	1,453	2,197
T-Mobile	12,302	11,387	11,777	12,346	8,591
O2	0,589	2,676	0,577	-0,669	-1,169

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

The largest net working capital has T-Mobile. Compared to O2, T-Mobile has similar level of current assets but the level of short term liabilities are lower. Vodafone had second largest amount of NWC -, that is between CZK -669 million to CZK 3,322 million. O2 had definitely lowest NWC even getting to negative values in 2012 and 2013.

4.4.4 Golden Rules

Table 25 Golden Rules by Operator, Czech Republic, 2009 – 2013

Balance Rules	2009	2010	2011	2012	2013	Score
Golden Rule of Settlement Risk						
Vodafone	7,891	9,676	-6,589	-6,628	-9,137	
T-Mobile	18,767	19,517	19,772	20,852	21,193	
O2	60,300	58,952	53,667	45,220	38,996	
Golden Pari Rule						
Vodafone	-374	2,290	-6,980	-6,159	-7,934	
T-Mobile	9,705	9,661	9,907	10,804	7,292	
O2	-5,830	-4,215	-3,271	-7,014	-6,988	
Golden Ratio Rule						
Vodafone	-0.02	-0.04	-0.01	0.38	n.a.	
T-Mobile	0.09	0.08	0.01	0.29	n.a.	
O2	0.06	0.01	-0.01	0.04	n.a.	

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Golden rule for settlement of risk that compares structure of own and external funding, i.e. equity and liabilities shows that Vodafone has the most unfavorable structure of capital, whereas both T-Mobile and O2 managed to achieve stable situation where amount equity exceeds amount of liabilities.

Golden pari rule requires covering fixed assets by equity solely. This rule is met by T-Mobile only, each year equity exceeds fixed assets by CZK 7.3 to 10.8 bn. In case of O2 the criterion in not satisfied in any period. Vodafone during the last three years also does not fulfill this condition. Only in 2010 the condition was met.

Revenue growth rate in comparison with investment growth rate is always higher in case of T-Mobile. The violation of this golden ratio rule for the case of O2 in 2011 and Vodafone in 2009–2011 was negligible and such the indicator in itself can be assessed as being satisfactorily met. In the last calculated period it is clear that all three mobile operators have limited their investing activities because their growth rate decelerated in comparison with revenues growth rate.

4.4.5 Ratio Indicators

This chapter contains comparison of selected financial ratio indicators used in chapter 4.3.6 Ratio Indicators. From each group of ratio indicators one has been chosen to compare different financial aspects of each of the MOs.

Table 26 Total Assets Turnover by Operator, Czech Republic, 2009 – 2013

Total Assets Turnover	2009	2010	2011	2012	2013
Vodafone	1.17	1.00	1.23	1.14	0.80
T-Mobile	0.92	0.86	0.79	0.77	0.70
O2	0.33	0.30	0.29	0.30	0.28

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

This indicator has been chosen as a measure of company's overall production effectiveness. As it is apparent, Vodafone has a leading role all through the analyzed period. Also as the only mobile operator it has been able to keep the value of total assets turnover above minimum recommended threshold of 1 with exception of the year 2013.

O2's significantly lower values are to be expected due to company's huge amount of fixed tangible assets in a form of not only a wireless network but fixed telephone network, cable TV and internet lines – an inheritance from Český Telecom. T-Mobile reports values close to the level 1 but still below with negative trend.

Table 27 Cash Ratio by Operator, Czech Republic, 2009 – 2013

Cash Ratio	2009	2010	2011	2012	2013
Vodafone	0.04	0.06	0.05	0.03	0.03
T-Mobile	0.05	0.55	2.28	2.72	1.84
O2	0.11	0.41	0.47	0.26	0.29

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Due to the composition of Vodafone's current assets cash ratio has been chosen to serve as a measure of each mobile operator's ability to meet its most immediate financing needs. With exception of 2009 T-Mobile was able to maintain most favorable values of cash ratio through analyzed period. With O2 being second both MOs have been able to stay above recommended minimal threshold of 0.2. Vodafone not only had the most unfavorable values from all the competitors, it also never managed to get above recommended line.

Table 28 ROE by Operator, Czech Republic, 2009 – 2013

ROE	2009	2010	2011	2012	2013
Vodafone	0.21	0.14	0.49	0.28	0.06
T-Mobile	0.35	0.32	0.28	0.26	0.22
O2	0.16	0.16	0.11	0.09	0.10

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Return on equity has been chosen to compare how much return shareholders get from their invested funds of each company. Best overall value of ROE in the analyzed period has been achieved by T-Mobile with exception of 2011 and 2012 where Vodafone had the best results. However, Vodafone's 2013 drop in earnings pushed it even behind O2, which had overall least favorable results in the period 2009 – 2012.

Table 29 Debt Ratio, Czech Republic, 2009 – 2013

Debt Ratio	2009	2010	2011	2012	2013
Vodafone	0.18	0.19	0.67	0.68	0.73
T-Mobile	0.14	0.16	0.15	0.14	0.13
O2	0.18	0.19	0.21	0.22	0.25

Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Debt ratio served as a measure to compare the extent to which each of the companies is financed by debt, i.e. external funding. From 2009 to 2011 debt ratio values

of all three MOs were approximately the same indicating overall tendency of the companies to be financed mostly by shareholder's equity. However, while T-Mobile and O2's sources of funding remained dominated by shareholders' equity, Vodafone's several times mentioned CZK 7 bn loan in 2011 and decrease in registered capital moved the company far from industry average (with further deflection in 2013).

4.4.6 Summary of Financial Position of Mobile Operators

The following analysis comes from the multi criteria methodology that enables to compare several indicators measured in different units. Each of the criteria value has to be normalized, i.e. transformed to the scale 0.00 – 1.00 using the formula (for maximizing indicators):

$$y'_{ij} = (y_{ij} - l_i) / (u_i - l_i) \text{ for each } j = 2009, \ldots, 2013, \quad \text{(Formula 34)}$$

where y_{ij} is the value if i^{th} indicator in j^{th} year, *l* and *u* are lower and upper limits for the indicator, i.e. $u_i = \max_j y_{ij}$ and $l_i = \min_j y_{ij}$. The criteria in the comparison are all of the maximizing type.

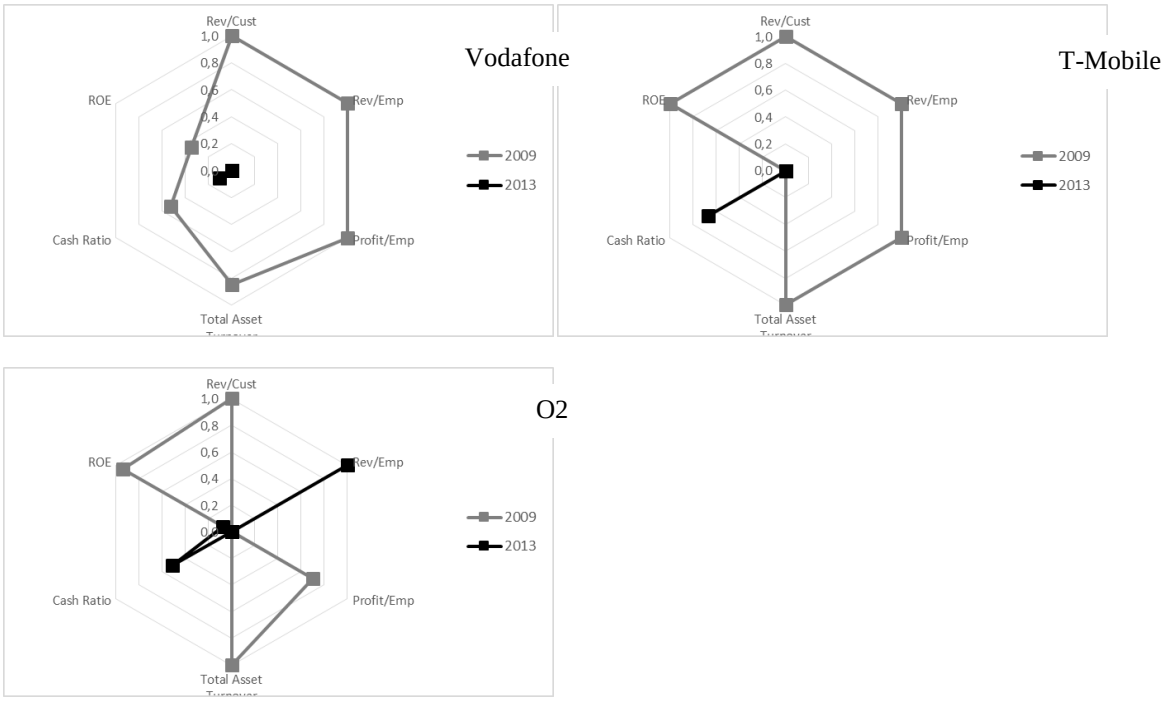
These normalized values can be then compared and graphically represented. Value 1.00 is the largest and in the case of maximizing criteria- the best reached value, whereas values 0.00 or close to 0.00 is the worst value that was reached by the company.

In this case, six indicators were chosen: Rev/Cust, Rev/Emp, Profit/Emp, Total Asset Turnover, Cash Ratio and ROE. The values are graphically represented is regular hexagon graphs – "spider webs" with length of the sides of 1.00. Each operator in certain year is then represented by irregular hexagon. The difference could be measured by shape of the hexagon or its volume.

4.4.6.1 Analysis of Financial Health for Operators Separately

The following analysis compares the financial situation separately for all three mobile operators in years 2009 and 2013. It is based on the analysis of six indicators within five years for given MO. It provides brief and transparent overview how the situation improved or worsened in case of the selected. This tool enables to look at relative trend of one company in the period of 2009 – 2013, regardless other competitors.

Graph 6 Comparison of Selected Financial Indicators, Operators Separately, 2009 and 2013 [normalized]



Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

In case of Vodafone, four indicators were on their highest or almost highest recorded level at the beginning of analyzed period in the year 2009. Two of the criteria reached normalized value 0.528 (cash ratio) and 0.350 (ROE) Within 5 years, the overall assessment of financial health of Vodafone would be very negative: in all six dimension the company worsened, in five of them to the worst value in the analyzed period. Cash ratio decreased to the normalized value of 0.106, others collapsed to 0.00.

T-Mobile was on the highest level in five out of six indicators with exception of cash ratio in 2009. At the end of the period in 2013 the situation looks also negative: in all those five criteria the company reached its minimal values in the period 2009 – 2013, only cash ratio increased to normalized value of 0.670.

For O2 four criteria from initially high values dropped or collapsed to 0.00 or almost zero. On the other hand, revenue per employee increased to the best value in the period and cash ratio reached the normalized value of 0.509.

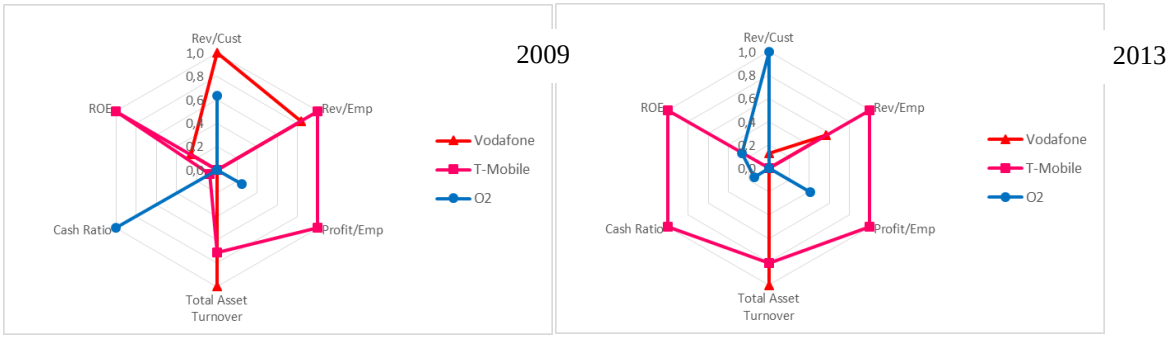
Generally, most of the indicators in all three MOs show clearly descending tendency. In these indicators all companies experience declining trend, which support the previous perspective of the Czech telco market: the mobile telco market is saturated,

competition is very tough, prices decline since the April 2013 and investors push toward higher earnings.

4.4.6.2 Analysis of Financial Health of Operators

In this analysis, indicators of all three MOs were summarized together and normalized. It is based on the analysis of six indicators and three MOs for given year. Thus, there is always one of the MOs who gets normalized value 0.00, one gets 1.00. Such a view provides transparent overview, which company is in better position. This analysis, in comparison to previous chapter 4.4.6.1 Analysis of Financial Health for Operators Separately, focuses on one year only and compares three mobile operators, allowing to observe the effect of the same market conditions on each of the three MOs.

Graph 7 Comparison of Selected Financial Indicators of Operators, 2009 and 2013 [normalized]



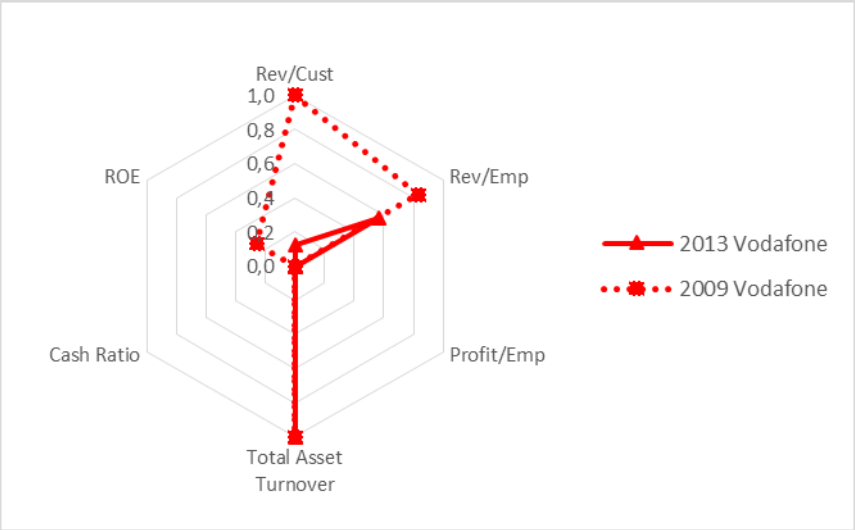
Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

In 2009, both T-Mobile and Vodafone show that they were best in some of the selected indicators. Vodafone was best in the indicators showing generated revenue per customer, total asset turnover and very good in revenue per one employee (normalized value 0.834). T-Mobile was the best in case of ROE, revenue per employee and profit per employee, total asset turnover was 0.708 in the normalized expression. O2 had the best only indicator of cash ratio. None of the mobile operator dominates to others, each of them is performing well in some indicators, in some is the worst among these three companies.

Situation in 2013 has changed quite substantially. T-Mobile occupies the largest area and such that could be evaluated as being the best in 2013. The company reached the best position in revenue per employee and profit per employee (same as in 2009), newly it also achieved best result in case of cash ratio and ROE. Vodafone is the best in total asset turnover and normalized value for revenue per employee is 0.565, otherwise the

performance is very unsatisfactory. O2 similarly shows the superior performance in the indicator of revenue per customer and second best performance in profit per employee.

Graph 8 Comparison of Selected Financial Indicators of Vodafone, 2009 and 2013 [normalized]



Source: Annual reports of Vodafone, O2, T-Mobile; own calculation

Especially for Vodafone, it is clear from the above figure that the company has completely changed its financial position, regardless whether it changed as a consequence of Vodafone changing its financial strategy or its performance has changed due to influence of market forces. The fact is, that three dimensions remained without the change of relative position within the industry, in other three dimensions there is visible worsening of the situation.

- Revenue per customer dropped (relatively to the position of other two competitors, T-Mobile and O2) from the normalized value 1.00 in 2009, i.e. the best in the industry, to the value of 0.126 in 2013.
- Revenue per employee declined relatively to other two player from 0.834 to 0.565 of the normalized value.
- Profit per employee remained the lowest in the industry.
- Total asset turnover remained on the best position compared to T-Mobile and O2, even though it has decreased from the value 1.17 in 2009 to 0.80 in 2013.
- Cash ratio remained the lowest in the industry.

- ROE decreased in the view of three competitors as a consequence of lowering revenues and earnings from the 2nd to the 3rd position among MOs on the Czech telco market.

5 Summary

Following part contains summary of all findings from previous part of the thesis and estimatimation of future development of Vodafone Czech Republic a.s. which is based on these findings

5.1 Conclusion of Financial Analysis

Trend in main indicators of Vodafone expressed in absolute values indicate deterioration of total revenues and earnings, which reflects development of the Czech telco market. Number of employees has the largest number in 2011 (2,425 employees) and then declines. Vodafone's value of equity decreased sharply between years 2010/2011 with drop of over CZK 10 bn in absolute terms (-86.6 % compared to 2010 value) and long term liabilities grew up due to the new long term loan.

Balance rules requirement were met only in some years: the golden balance rule was satisfied in the year 2013 only, otherwise Vodafone's fixed assets significantly overweighed Vodafone's long term sources of financing. Golden rule of settlement risk was fulfilled in years 2009 and 2010 only, when its equity was higher than its liabilities. Since that, Vodafone relies heavily on external sources of financing resulting in the negative score of this rule. Golden pari rule Vodafone managed to meet in the year 2010 only, when fixed assets over weighted shareholder's equity. Finally, the golden ratio rule was maintained or almost maintained in all analyzed periods. This means that the growth rate of investment was lower than the growth rate of revenues.

Ratio indicators are mainly satisfactory in the period of 2009 – 2011, and then often fell down below acceptable or recommended threshold. The reason is that, first, Vodafone changed its equity and long term liabilities structure and, second, high level of competition, and possibly financial and economic crisis and price war on the market pressed down revenues and profit of all three main player on the Czech telco market. Consequently, models of bankruptcy risk indicate serious problems for Vodafone.

Virtually every calculated indicator confirmed that the Czech telco market is in the state as described in respective chapter. Vodafone as well as its competitors were undoubtedly in better financial health in year 2009 than in year 2013. High costs and decreasing revenues and profits put even greater emphasis on proper financial management. Also low levels of customer net adds and little space for product differentiation put very strong emphasis on customer retention strategies, especially now, when resigning of 2013 price revolution contracts is due this spring.

5.2 Future of Vodafone within Czech Telco Market

The Czech telco market faces significant changes that will dramatically influence its further course. It is saturated market, but also at the same time sophisticated marked, where customers are advanced and ready to use technological innovations.

Continuing trends since 2012/2013:

- stagnant economy after the crisis affects consumers' spending on telco services, mobile ARPU continues to fall
- MOs promote m-payment services
- T-Mobile CR launches DC-HSPA technology; Vodafone upgrades network HSPA and launches VDSL2 services; MOs test LTE-A service for high-speed data connection
- MVNO market is developing with large number of new players
- the market is saturated, penetration exceeds 114 active SIM cards per 100 active customers, i.e. customers have two or three SIMs; MOs concentrate rather on retention offers in order to retain existing customers than acquisition offers that would attract new comers
- since 2013 flat tariffs are standard required by customers
- mobile services (calling, SMS, MMS, data) are perceived as commodity, distinguishing factor is price

Changes in 2014/2015:

- (02/2015) PPF group decided to split O2 into two separate legal entities: mobile and fixed network and data centers will be set aside to the new

company with the name Česká telekomunikační infrastruktura. It will have all network components and capacities for maintenance and development of networks, including one third of O2 employees and two O2 subsidiaries. One of the main reasons is elimination of influence of state regulation.

- (01/2015) O2 and T-Mobile agree to share LTE network on the national level, Vodafone negotiates to join as well. Vodafone submitted network sharing proposal to CTO.
- data traffic takes over the role of main medium, which means that even voice connection will be satisfied over the data network, voice GSM and SMS GSM will diminish (but today still generate large amount of revenues)

Vodafone Czech Republic decided in 2014 to participate in three-way discussions on possible sharing and consolidation of 2G, 3G and 4G LTE mobile networks with rivals T-Mobile and O2. Sharing of networks becomes strategic advantage in the Czech Republic as from the financial point of view license auctions were heavily expensive for each of MOs - building of the network and its maintenance will be costly as well.

Vodafone indicated that analysis of possible business models of sharing mobile networks will be provided by external independent consultants. After this analysis each MO decides whether to participate in the proposed project. If all three or at least two of the MOs decide to cooperate and continue with network collaboration, commercial negotiations start with the focus on financial and legal issues of the cooperation. Vodafone noted that during the analysis phase, operators shall continue in their previously planned network development activities.

In June 2014 Vodafone Czech Republic has filed a complaint with the country's anti-monopoly watchdog over the 4G LTE network-sharing agreement signed previous month by T-Mobile and O2. Vodafone claimed that the deal is in breach of local laws set down by the Czech Telecommunications Office (CTU) that such arrangements 'should not be exclusive'.

As mentioned earlier, mobile penetration in the Czech Republic is among the highest in Europe and level of saturation is also very high. In such a competitive environment it is expected that player will further compete based on price as there is almost no space left for competition based on individualization of offers and other product

differentiation. Such environment requires financially and strategically strong players with financial back up. Vodafone, T-Mobile and O2 have the mother company recruiting from large multinational telco companies or multinational financial group. In the next few years, mobile operators will have to concentrate on strategies that might preserve revenues streams, such as mobile broadband data, value added services, mobile content and applications and corporate ICT solutions.

6 Conclusion

Objective of this thesis is to assess financial health of Vodafone Czech Republic, a.s. and its position within the industry and to provide assessment of possible future development of the industry through application of methods of financial analysis on Vodafone and partially on its competitors. It became apparent that Vodafone just like other mobile operators were highly affected by the present state of Czech telco market – market saturation and intensely competitive environment.

Vodafone's financial indicators and financial health generally were mainly satisfactory in the period of 2009 – 2011, and then often fell down below acceptable or recommended thresholds. The reason was that Vodafone decreased its equity and increased long term liabilities structure due to the new long term loan. More, Vodafone's performance (lowering of revenues and profit) was influenced by the high level of competition, price competition and partially economic crisis. Consequently, financial ratios and models value Vodafone lowered, models of bankruptcy risk indicate serious problems for Vodafone even though strong mother company ensures that Vodafone Czech Republic will not go bankrupt.

All three players show that their condition in 2009 was better compared to their position in 2013. The level of revenues and profit went down on the market generally, companies after rich and wealthy years of dynamic growth of the industry (till 2008) experience period of saturation, acceleration of the market is over and gross margins decline dramatically. In this phase and under continual pressure by the market and by investors at the same time, mobile operators should concentrate on preserving current levels of revenues and profit, maintaining their costs and retaining existing customers.

Still, Vodafone Czech Republic, a.s. belongs among the three most powerful mobile telecommunications companies and consequently among the most recognized companies operating on Czech Republic's market.

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8 Appendices

List of Attachments

Annex 1: Balance Sheet of Vodafone

Annex 2: Income Statement of Vodafone

Annex 3: Some Other Operating Indicators of Vodafone, T-Mobile, O2

Annex 1: Balance Sheet of Vodafone

Assets [MM CZK]	2009	2010	2011	2012	2013
Property	1	1	1	1	1
Buildings	1,973	1,534	1,143	985	763
Other tangible fixed assets	3,998	3,470	2,985	2,900	2,550
Tangible fixed assets	**5,972**	**5,005**	**4,129**	**3,886**	**3,314**
Intangible fixed assets	6,098	6,306	6,323	5,713	8,267
Non-current financial assets	0	13	13	0	1
Other fixed assets	**6,098**	**6,319**	**6,336**	**5,713**	**8,268**
Inventories	260	276	197	143	130
Long Term Receivables	473	531	541	481	468
Short Term receivables	3,452	5,870	2,779	3,517	3,982
Cash	8	5	9	1	2
Bank Accounts	124	202	115	78	76
Current Assets	**4,317**	**6,884**	**3,641**	**4,220**	**4,658**
Accruals	**267**	**243**	**336**	**612**	**788**
TOTAL ASSETS	**16,654**	**18,451**	**14,442**	**14,431**	**17,028**

Equity + Liabilities [MM CZK]	2009	2010	2011	2012	2013
Registered Capital	8,150	8,150	1,470	1,470	1,470
Reserve Funds	1,091	1,214	294	294	294
Financial Result of Previous Periods	0	2,332	0	721	1,676
Financial Result of Current Period	2,455	1,918	1,721	955	208
Equity	**11,696**	**13,614**	**3,485**	**3,440**	**3,648**
Reserves	816	376	362	295	320
Long Term Liabilities	0	0	7,000	7,000	10,000
Current Liabilities	2,989	3,562	2,624	2,767	2,461
Bank Loans	0	0	88	6	4
Liabilities	**3,805**	**3,938**	**10,074**	**10,068**	**12,785**
Accruals	**1,153**	**899**	**883**	**923**	**594**
TOTAL EQUITY + LIABILITIES	**16,654**	**18,451**	**14,442**	**14,431**	**17,027**

Source: Annual reports of Vodafone, own calculation

Annex 2: Income Statement of Vodafone

P&L Account [MM CZK]	2009	2010	2011	2012	2013
Sales of goods	1,028	1,169	1,097	1,387	906
Costs of goods sold	1,608	1,833	1,742	2,157	1,469
Sales of own products and services	18,394	17,324	16,683	15,125	12,721
Gross margin	**580**	**664**	**645**	**770**	**563**
Own work capitalised	147	152	142	115	139
Total Production	**18,541**	**17,476**	**16,825**	**15,240**	**12,860**
Consumed material and energy	389	418	481	393	393
Services	8,444	8,047	8,148	7,784	7,081
Staff costs	1,897	2,179	2,126	2,019	1,733
Total operating expenses	**10,730**	**10,644**	**10,755**	**10,196**	**9,207**
Taxes and charges	11	10	11	8	0
Depreciation	4,492	3,552	2,996	2,926	2,882
Sales of fixed assets and material	1	3	7	4	3
Net book value of fixed assets and material sold	11	15	34	108	200
Change in reserves and provisions	152	41	155	392	311
Other operating income	206	179	328	273	448
Other operating expenses	92	269	663	446	292
Total other operating expenses	**4,606**	**3,846**	**3,704**	**3,488**	**3,374**
Total other operating income	**55**	**223**	**490**	**669**	**762**
Operating profit or loss	**2,680**	**2,545**	**2,211**	**1,455**	**478**
Cost of securities and investments sold	7	18	7	0	24
Interest income	273	30	21	8	6
Interest expenses	8	1	21	106	86
Other financial income	78	64	63	70	34
Other financial expenses	109	100	129	172	116
Total other expenses and income	**234**	**7**	**66**	**200**	**162**
Earnings before tax	**2,921**	**2,520**	**2,138**	**1,255**	**292**
Income tax	466	602	417	300	84
Earnings after tax	**2,455**	**1,918**	**1,721**	**955**	**208**

Source: Annual reports of Vodafone, own calculation

Annex 3: Some Other Operating Indicators of Vodafone, T-Mobile, O2

Employees	2009	2010	2011	2012	2013
Vodafone	2,055	2,110	2,425	2,411	2,054
T-Mobile	2,866	2,904	2,944	2,847	2,695
O2	8,011	6,936	6,340	5,861	5,099

Customers	2009	2010	2011	2012	2013
Vodafone	2,900,000	3,007,000	3,174,000	3,365,000	3,280,000
T-Mobile	5,464,000	5,475,000	5,381,000	5,498,000	5,498,000
O2	4,945,000	4,839,000	4,942,000	5,083,000	5,101,000

Total Assets [MM CZK]	2009	2010	2011	2012	2013
Vodafone	16,654	18,451	14,442	14,431	17,028
T-Mobile	32,871	33,297	33,158	32,940	32,351
O2	95,280	96,266	91,117	81,154	77,064

Fixed Assets [MM CZK]	2009	2010	2011	2012	2013
Vodafone	12,070	11,324	10,465	9,599	11,582
T-Mobile	16,114	16,746	16,558	16,092	19,480
O2	83,620	81,824	75,663	70,201	65,018

Current Assets [MM CZK]	2009	2010	2011	2012	2013
Vodafone	4,317	6,884	3,641	4,220	4,658
T-Mobile	16,757	16,551	16,600	16,848	12,871
O2	11,660	14,442	15,454	10,953	12,046

Equity [MM CZK]	2009	2010	2011	2012	2013
Vodafone	11,696	13,614	3,485	3,440	3,648
T-Mobile	25,819	26,407	26,465	26,896	26,772
O2	77,790	77,609	72,392	63,187	58,030

Source: Annual reports of Vodafone, T-Mobile, O2; own calculation