

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Bachelor Thesis**

**Financial Analysis of Aeroflot Company**

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## BACHELOR THESIS ASSIGNMENT

Alfia Nezamedinova

Economics and Management

Thesis title

**Financial analysis of Aeroflot company**

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### Objectives of thesis

This bachelor paper work is focused on financial analysis performance of Aeroflot company. The subject is indisputably very important in the modern world. Firstly, the financial analysis may provide a full picture of financial state of the company. Thus, the financial analysis is sometimes called the X-ray of the company. Secondly, by applying the financial analysis, it is easier to make a conclusion about the strategy of the company. For example, whether the management lends money very actively for business development and is open to risks; or the management prefers to avoid risks and relies on its own efforts. The financial analysis is also important with its essential informational component, mainly for stakeholder and shareholders.

### Methodology

The purpose of this bachelor thesis is to formulate recommendations for the company which will be based on the performed financial analysis of Aeroflot enterprise. This goal implies the fulfillment of other sub-goals. The first sub-goal is the realization of the literature research in the under discussed field, by consulting books of Czech and foreign authors. The literature research is being conducted in order to compare various authors' opinion on this topic. The next sub-goal is the performance of financial analysis of the enterprise. By fulfilling these two sub-goals, the main goal of this thesis will be realized.

The methodology of work is based on the above described goals. The first step is to study the literature on this question and to make calculations, that will be used later in our own research. This chapter will contain the latest and most contemporary literature.

The second part of the diploma work is founded on methodology and proceeds from the previous chapter.

Many scientific methods are used in the work. Undoubtedly, the most important method is the financial analysis and its application in practice. Additionally, analogy and comparison were used in the thesis, being supplemented by deduction.

## The proposed extent of the thesis

40 pages

## Keywords

Aircompany, Aeroflot , Financial Analysis

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## Recommended information sources

- ANTONETA. P. et al. KRALICEK QUICK TEST – AN ANALYSIS TOOL FOR ECONOMIC UNITS DETERMINATION IN LIABILITY DIFFICULTY. Gjirokastra: Eqrem Cabej University. 2014. European Scientific Journal. vol.10. No.19. ISSN 1857- 7431.
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- WARREN. C. et al. Corporate Financial Accounting. Boston: South-Western College Pub. 2016. 738 p. ISBN 978-1305653535.
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Prague on 14. 03. 2018

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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Financial analysis of Aeroflot Company" 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 their person.

In Prague on

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## **Acknowledgement**

I would like to thank Ing. Petr Procházka, MSc, Ph.D. for advices and support during my work on this thesis.

# **Financial analysis of Aeroflot company**

## **Summary**

This bachelor paper work is focused on financial analysis performance of Aeroflot company. The subject is indisputably very important in the modern world. The research includes literature research and the working out of own calculations. The thesis was written based on information available on the Internet and data concerning the financial activities of Aeroflot. Unfortunately, the author of this diploma does not have access to the internal information about company's financial performance and the work is written from the point of view of external user.

**Keywords:** Aircompany, Aeroflot, Financial Analysis.

# **Finanční analýza Společnosti Aeroflot.**

## **Souhrn**

Tato bakalářská práce se zaměřuje na výkon finanční analýzy společnosti Aeroflot. Předmět je bezpochyby velmi důležitý v moderním světě. Výzkum zahrnuje výzkum literatury a vypracování vlastních výpočtů. Práce byla napsána na základě informací dostupných na internetu a údajů o finanční činnosti společnosti Aeroflot. Bohužel autorka této bakalářské práce nemá přístup k interním informacím o finanční výkonnosti společnosti a dílo je napsáno z pohledu externího uživatele.

**Klíčová slova:** letecká společnost, Aeroflot, finanční analýza.

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## **1 Introduction**

This bachelor paper work is focused on financial analysis performance of Aeroflot company. The subject is indisputably very important in the modern world. Firstly, the financial analysis may provide a full picture of financial state of the company. Thus, the financial analysis is sometimes called the X-ray of the company. Secondly, by applying the financial analysis, it is easier to make a conclusion about the strategy of the company. For example, whether the management lends money very actively for business development and is open to risks; or the management prefers to avoid risks and relies on its own efforts. The financial analysis is also important with its essential informational component, mainly for stakeholder and shareholders.

This subject was chosen for several reasons. The first reason is the author's interest in this subject. During the studies, it was financial management and financial analysis that seemed to the author most interesting topics. The second reason is the relevance of the topic, as it was already mentioned above. Finally, the topic was chosen to expand author's personal enrichment, since after graduating the university, the author is going to activate in this domain. Writing the bachelor thesis on this subject seems to the author being an ideal step in her future career.

The main limitation of this bachelor work is the fact that it is written from the point of view of casual observer. The author of this bachelor's thesis does not activate in Aeroflot company and does not have access to internal financial documentation of the company. The basis for thesis is the information available on the Internet. On the other hand, such approach helps to be objective and not be guided by subjective judgments that are based on the knowledge and information of the company from inside.

The research includes literature research and the working out of own calculations. The thesis was written based on information available on the Internet and data concerning the financial activities of Aeroflot. Unfortunately, the author of this diploma does not have access to the internal information about company's financial performance and the work is written from the point of view of external user.

## **2 Goals and Methodology**

The purpose of this bachelor thesis is to formulate recommendations for the company which will be based on the performed financial analysis of Aeroflot enterprise. This goal implies the fulfillment of other sub-goals. The first sub-goal is the realization of the literature research in the under discussed field, by consulting books of Czech and foreign authors. The literature research is being conducted in order to compare various authors' opinion on this topic. The next sub-goal is the performance of financial analysis of the enterprise. By fulfilling these two sub-goals, the main goal of this thesis will be realized.

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Many scientific methods are used in the work. Undoubtedly, the most important method is the financial analysis and its application in practice. Additionally, analogy and comparison were used in the thesis, being supplemented by deduction.

### **3 Theoretical part**

The first part of the bachelor's thesis will contain the presentation of main goal in creating the theoretical basis for further research. We will initiate with a consideration of the industry at the international level and a separate introduction of this industry in Russia. Afterwards will follow the introduction of the company.

The base for financial analysis will be built on two very important financial documents, which are the income statement and the balance sheet. These two documents will be used in all subsequent types of analysis. Obviously, there will be utilized other accounting documents, such as cash flow statement or statement of changes in equity. However, not all companies draw up these additional accounting documents. Thus, the analysis will be based on the income statement and balance sheet, in the following chapters. A theoretical approach to financial analysis will be performed in the first chapter.

#### **3.1 Airlines industry**

The last years were quite successful for the world aviation industry: according to IATA, the world passenger turnover growth in 2016 compared to 2015 was 5.9%. This situation is connected primarily with the growth of the global economy. The passenger traffic volume on regular flights increased by 5.7%, which is approximately 3.8 billion passengers. In 2016, avia carriage in the region of the Middle East was developing the most dynamically, which is associated with the growth of the economy in this region. Passenger turnover growth in this region, was 10.8%, compared to 2015. The second place in terms of growth rates is occupied by the market of the Asia-Pacific region, where the passenger turnover increased by 8.9%. In this region, the fastest growing link, of course - is the Chinese market with its bottomless market outlet attracting foreign companies. In the European region, passenger turnover increased by 3.8% and is principally related to the German market. The North American market showed an increase in passenger turnover by 3.2%, which is ensured by the steady economic growth of the United States of America. The industry's revenues, according to IATA, decreased by 2.4% compared to 2015. According to IATA's preliminary estimates, the industry's net profit for the year 2016 is \$ 35.6 billion. In the US, this

represents the highest indicator in the industry, in the past ten years. This trend will continue (Aeroflot. Rynok aviaperevozok).

Next, it should be taken into account that the times of mass marketing have already passed on, and it is necessary to divide the air transportation market by customers. The first division is, of course, the division into cargo traffic and passenger transportation. This division is based on what is being transported – people or a cargo. In the future, the segmentation will be focused on passenger transportation. The next criterion for division is the purpose of the trip, which can be implemented for the following reasons: business trips, tourist trips and personal trips. The type of ticket buyers is important, as well, because it influences the process of purchase. Therefore, there are differences in the process of flight ticket purchase, for the purchase of business trips, there are several participants in the process. In case of a business flights, the ticket can be purchased by a different person than the one who will be flying. Further, the passengers can be divided into international and regional.

The passenger transportation segment has, as a rule, a very well-designed sales promotion system, that is, stimulation of ticket sales bigger quantity. This system is founded on the number of kilometers the traveler flies with this company.

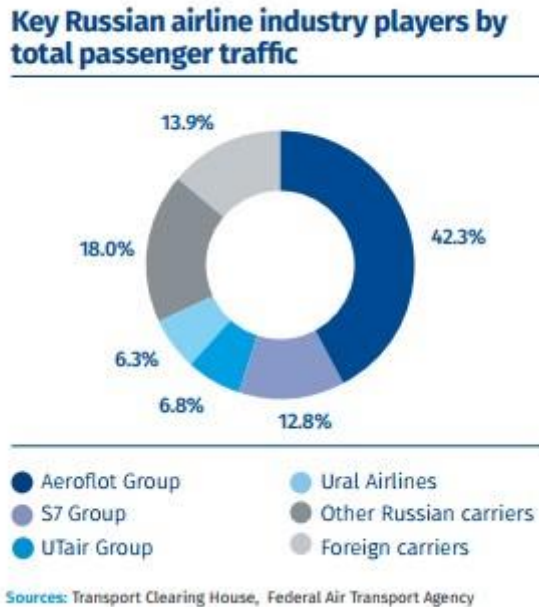
### **3.2 Russian airlines and market**

The situation on the Russian market does not correspond to the world market situation. In 2016, the total volume of the Russian transportation market, including the foreign carriers, decreased by 4.1% compared to 2015 and amounted to 102.8 million passengers. In particular, Russian airline flights carried about 88.6 million passengers, which is 3.8% less than a year earlier. The company Aeroflot gives the following explanation of this situation: decrease in the purchasing power of the population caused by the national currency depreciation; restrictions on flights to Turkey, Egypt, Ukraine, introduced in late 2015; and a corresponding decline in sales in the outbound tourism market (Aeroflot. Rynok aviaperevozok).

Aeroflot is the main air carrier in the domestic market of Russia – see chart 1. As it can be seen on the image above, the firm has about 40% of the Russian market of passenger traffic. All other companies operating in the domain of air trips are not so successful. This success

is guaranteed by its strategy oriented to cover the entire territory of Russia and not only to focus on one region, unlike other airlines operating in Russia.

**Chart 1. Key Russian airline industry players**



Source: Annual report Aeroflot

### 3.3 Aefoflot as a company

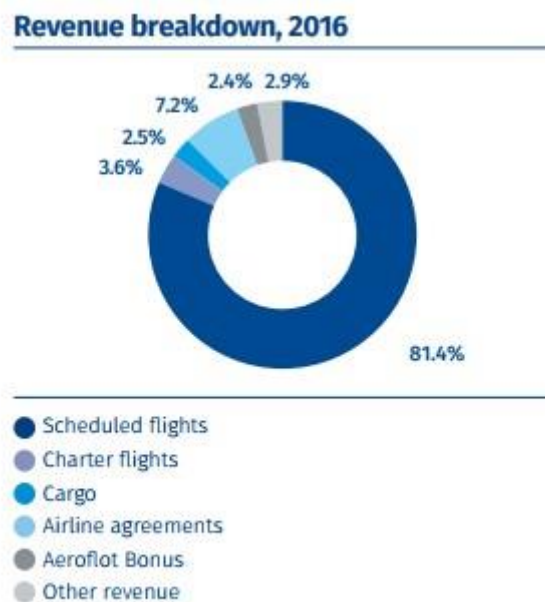
The company Aeroflot is one of the oldest companies on the Russian market. The firm was founded on March 17th, 1923, making it one of the oldest airlines in the world. The company arose almost immediately after the civil war in Russia, and its first international flight was Moscow-Koenigsberg-Berlin flight. During the same year, the first internal line of the airline (Moscow-Nizhny Novgorod) was opened. During the existence of the SSSR, the company was also engaged in other aerial work that is not typical for airlines. For example: was engaged in agricultural aviation of the country, carried out the transportations for the space program, explored the country's natural resources, etc. The modern stage in the history of the company begins in 1992. The head office of the company is still placed in Moscow.

In addition to its main fleet, the firm also has subsidiary companies, such as Aurora, Pobeda and Russia. The activity of its subsidiaries indicates that the company is performing a diversification of its business. For example, Aurora transports passengers in Siberia, Far East and China; Victory is a classical low-cost carriage; and Russia is focused on transporting

passengers from St. Petersburg. Since April 2006, the firm is a full member of the SkyTeam aviation alliance.

The company receives its main profit from the scheduled flights - approximately 82% - see chart 2. The rest types of profits do not matter much to the company. During the summer, the number of charter flights increases. This profit structure is primarily connected with the characteristics of Russia. The country is huge and the roads do not meet the requirements for people's rapid movement, thus people who are wealthy and know the value of their time, in Russia, choose a trip by plane, unlike people living in Europe.

**Chart 2. Revenue breakdown**



**Source: Annual report Aeroflot**

The company mainly works with Sberbank of Russia, which is the main bank of the country and one of the main banks in Eastern Europe – see chart 3. This is also related to the fact that both, Aeroflot and Sberbank are partly referring to state property. This bank lends money to Aeroflot for a short and long time. The second most important credit institution is VTB Bank. The company has debts in three currencies - the Russian ruble is used for payments inside the country, while other currencies are used for calculations with banks from foreign countries (Euro in Europe, dollar in the USA and southeast Asia).

**Chart 3. Loan portfolio**

**Loan portfolio as at 31 December 2016**

RUB MILLION, UNLESS OTHERWISE STATED

Bank	Currency	Short-term loans and borrowings and current portion of long-term loans and borrowings	Long-term loans and borrowings
Sberbank of Russia	RUB	4,831	7,863
VTB Bank	EUR	4,478	-
Sovcombank	RUB	-	2,800
Other	USD	-	395
<b>TOTAL</b>		<b>9,309</b>	<b>11,058</b>

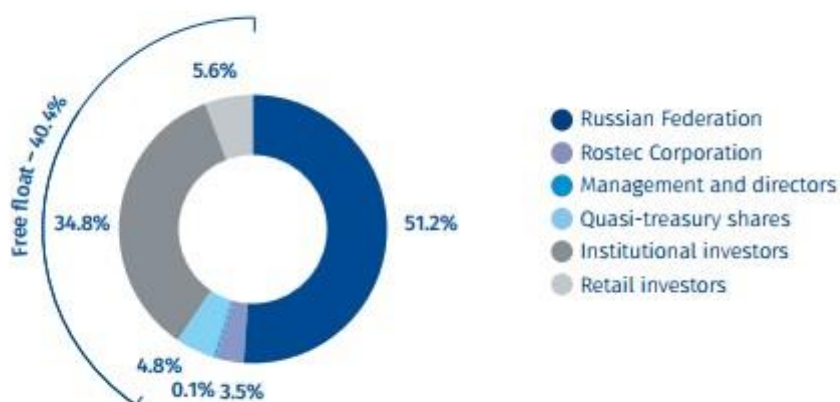
Source: Annual report Aeroflot

The majority shareholding of the company belongs to the state and represents 51% - see chart 4. This is related to the fact that the sphere of air transportation, from the opinion of view of the Russian government, is a sphere of country's strategic interests, therefore it cannot be privatized. The second owner of company's shares, in the order of importance, is Rostec Corporation, which was established to assist in the development, production and export of high-technology industrial products for civil and military utilization. Only 5% of the company's shares are stock available.



Chart 4. Shareholder structure

Shareholder structure as of 31 December 2016



Source: Annual report Aeroflot

The company operates flights to almost all-important cities in Europe and North America – see chart 5. Moreover, the firm has air trips to Southeast Asia (see the appendix). The most important air destinations of the company are shown in the figure below. As we can see in the picture, the main destinations are the financial or tourist centers of the world, such as New York, Barcelona, Shanghai, etc. It should be noted that the company canceled its flights to Egypt, due to unstable political situation in this region. The only exception in this list is the city Yerevan, which is primarily related to the fact that Armenian Diaspora in Moscow is very big.

Chart 5. Key routes

**Aeroflot airline's key international transit routes in 2016**



Source: Annual report Aeroflot

The chart number 6 shows that the company is increasing its revenues from international transportation/flights, at present. This is a direct result of the management strategy: orientation to long-distance flights. This type of flights is the most profitable for the firm. In addition, the firm has increased its budget on advertising abroad. This can be very well noticed in Prague. There is advertisement on public transport, advertising trips to Southeast Asia.

Chart 6. Market share evolution

**Aeroflot Group's market share evolution by Russian passenger traffic**

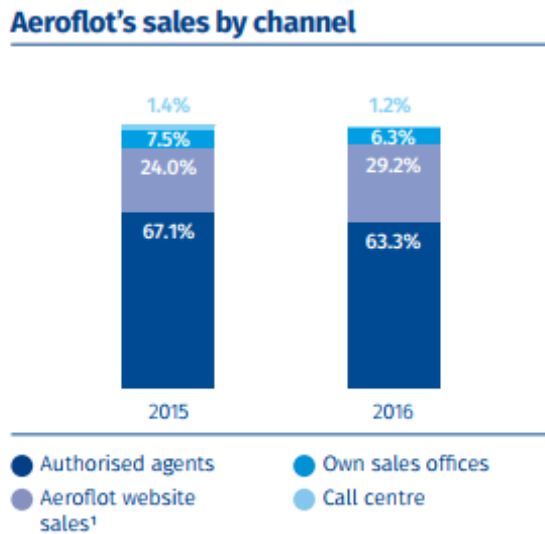
	2012	2013	2014	2015	2016
International traffic	28.4%	27.0%	26.1%	29.3%	39.4%
Domestic traffic	32.6%	36.1%	38.0%	44.6%	44.6%
<b>Total</b>	<b>30.0%</b>	<b>30.5%</b>	<b>31.0%</b>	<b>36.8%</b>	<b>42.3%</b>

Source: Annual report Aeroflot

The main sales channel for Aeroflot company are the sales done through authorized agents- about 60% of flights are sold in this way (see chart 7). It should be noted, as a result of

Internet increasing influence, there is happening a huge increase in Web sales (Online) via Aeroflot's official page. The sales volume increased from 24% to 29%, in just one year, through the company's website. Online flight ticket sales are, of course, the most profitable way of sales for the firm, because it does not share provisions with intermediaries and should not keep an additional number of specialists.

Chart 7. Sales by channel



Source: Annual report Aeroflot

The company's shares on the Moscow stock exchange market are constantly increasing – see chart 8, which speaks about the confidence of investors. It should be underlined that this index is not very good for the analysis of the company, since most of the shares are not available in free trade. Therefore, the stock price has a very big spread (please see the figure 8). To be recalled that only 5% of the firm's shares are stock available, the rest shares are held by either institutional investors or by the Russian state. The dividend payment policy is of interest: in case of negative profit, dividends are not paid; in case of positive profits, dividends are paid with a fixed amount of "The target level of dividend pay-outs is set at 25% of the Aeroflot Group's IFRS net profit".

Chart 8. Price per share

### Price per Aeroflot share

RUB

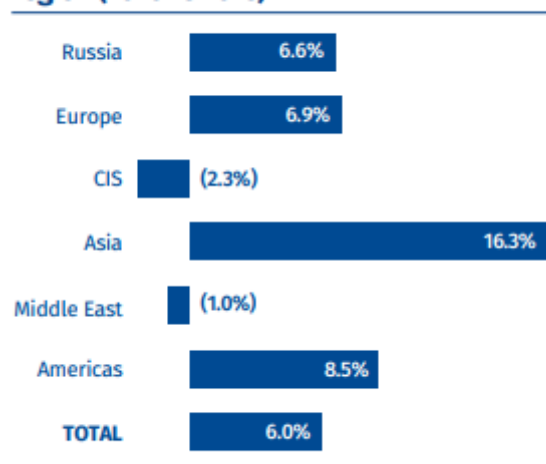
	2012	2013	2014	2015	2016
First trading day	50.9	46.2	83.2	33.2	56.2
High	55.5	85.1	88.0	61.0	158.4
Low	38.8	46.2	29.9	32.5	50.4
Last trading day	44.9	83.8	32.2	56.1	152.9

Source: Annual report Aeroflot

The fastest growing market of flights for Aeroflot, are the countries of Southeast Asia, with China being the first – see chart 9. This situation is connected with the increasingly growing cooperation between both countries, Russia and China. Primarily in trade, China can offer Russia an unlimited market with more than a billion potential buyers. Russia can offer China its endless natural resources. By this, the push for the development of relations are the sanctions against Russia on the part of the EU countries.

Chart 9. Airline scheduled flights

### Aeroflot airline's scheduled flights by region (2016 vs 2015)



Source: Annual report Aeroflot

The company is constantly increasing the number of passengers being transported, with impressive growth of 27 million in 2012 and 43 million in 2016 – see chart 10. The same concerns to the rest of the indexes that refer to the company's operating results.

Chart 10. Operational results

#### Aeroflot Group's operational results

Item	2012	2013	2014	2015	2016
<b>TOTAL FLIGHTS</b>					
Passenger traffic, million PAX	27.5	31.4	34.7	39.4	43.4
change, %	67.6	14.3	10.7	13.4	10.3
Passenger turnover, billion RPK	74.6	85.3	90.1	97.6	112.1
change, %	61.9	14.3	5.6	8.4	14.8
Available seat-kilometres, billion ASK	95.6	109.1	115.8	124.7	137.7
change, %	59.3	14.1	6.2	7.7	10.4
Passenger load factor, %	78.1	78.2	77.8	78.3	81.4
change, p.p.	1.3	0.1	(0.4)	0.5	3.1
Cargo and mail, thousand tonnes	223.8	204.6	166.3	156.3	205.8
change, %	32.8	(8.6)	(18.7)	(6.0)	31.6
Flights, thousand	241.8	264.9	286.7	323.8	331.9
change, %	18.1	9.5	8.2	13.0	2.5
Stage length, km	2,716	2,717	2,593	2,479	2,581
change, %	(3.4)	0.0	(4.5)	(4.4)	4.1

Source: Annual report Aeroflot

## 3.4 Tools for company evaluation

### 3.4.1 Horizontal and vertical analysis

The first chapter is dedicated to analysis, this method being used as a high priority, since it gives the possibility to analyze very quickly the situation in the firm. The fundamentals of this analysis are represented by indicators annual changes in the income statement and balance sheet.

#### Horizontal analysis of income statement and balance sheet

This type of analysis is the primary step in the performance of the financial analysis of the company. The horizontal analysis is used not only for the analysis of financial statements, but also as one of the factors affecting company's revenue growth and maintaining the stable position of the enterprise.

The horizontal analysis is based on the study of changes in the final balance sheet in time. That is, its fundamental, in particular, the changes in time. Most often, the changes are calculated in relation to the previous year. The second mode of calculating the analysis is a change in relation to some of the years or one year, by selection. Thanks to this analysis, it

is possible to follow the changes that occurred in previous years and to understand whether there has been a positive or negative result (Rich et al, 2011, p. 593).

The analysis results mostly from annual data, but monthly and quarterly changes can be taken, too. The changes are given both as absolute indicators in monetary terms, and relative indicators in percent. An example, can be the following situation: staff costs increased by \$ 1,000 compared to the previous year, which is about 10% compared to the previous year.

As it was written by Godwin (2012, p. 33): “*As a result, it is very useful in identifying promising or troubling trend in a company*”. Therefore, we should remember that horizontal analysis is used not only to assess the situation in the past. It can also be utilized to assess the future situation, especially if we take into account the regression analysis that can be applied to assess the evolution of the situation in the future.

### **Vertical analysis of income statement and balance sheet**

Vertical analysis is also called structural analysis, because it is based on the analysis of the structure of accounting balance sheet results in the form of relative amounts. The fundamental of statements is the calculation of interest in relation to the total (Warren et al., 2016, p. 72).

This method of analysis allows the manager or other interested person to have a look at the changes in indices. A typical example would be the analysis of staff costs, and see what happened to them in comparison to last year. The percentage figures in this analysis show perfectly how far the deviations occurred and in which direction. First of all, this type of analysis is convenient because in calculations with absolute values, that is the result of the previous analysis, it is not always clear by how much the situation has worsened or improved.

In addition, it should be noted that: “*Vertical analysis is a very useful fraud detection technique, because percentages are easily understood*”. Therefore, the application of this analysis also helps when investigating activities (Zimbelman, 2015, p. 184).

The horizontal and vertical analysis of financial documents are complementary and should be applied simultaneously. Moreover, the impact of exchange rates or inflation on these indicators should be mentioned. This is the main problem of the firms that are trading with

foreigners. It may happen the firm, for example, has achieved profit growth, in reality this profit was achieved due to a change in the exchange rates.

### **3.4.2 Financial ratio analysis**

This chapter, will study the indices that are based on the relationship of two or more values in the income statement and balance sheet or their combinations.

Financial ratio analysis is used for many purposes. Firstly, it may serve as a basis for creditors in the field of credit risk assessment. Secondly, this type of analysis may provide information to financial managers about the effectiveness of management's decisions taken. The calculation of ratios is based on using cross-sectional and time series analysis. As it was mentioned by Beyer (2010, p. 10): *"The most widely discussed cross-sectional technique is a comparison of ratios across firms."*

This type of analysis, unlike the previous one, is not linked to only one company, but can be conducted in the whole industry, in order to compare the results of research with competition. Also, this analysis can be implemented in different periods of the activity of company. As it was stated by Vasigh (2014, p. 168): *"The more powerful ratio analysis comparison is with other firms competing in the same industry. With financial statement readily available for all publicly-traded companies, benchmarking of competing firms can easily be undertaken to help understand a company's financial position within the industry."*

Why are these indices needed? The answer is quite simple. The total results and the calculation of data just from the income statement or balance sheet are not sufficient information to assess the profitability of the enterprise and its effectiveness. It happens, because they take into account only one side of the activity of the firm.

### **Liquidity ratios**

The word Liquidity has Latin roots and means liquid. In the modern world, this word is used primarily to describe the ability of assets to be quickly sold at a price, which is close to the market price. In other words, the term liquidity refers to the convertibility of assets into money. It is obvious the higher the index is, the better for the firm, as it proves firm's ability to pay its debts on time. This represents a very good factor in the process of negotiation with

banks or potential investors interested in investing in this firm. On the other hand, it should be noted that firms do not exist only to pay debts - their main goal is to earn money. Therefore, it is not absolutely reasonable to tend to an excessively high liquidity indicator, as another important characteristic is the efficiency.

According to Herman (2004, p. 505) this analysis has the following definition: “*Liquidity ratios measure the extent to which an organization has an ability to convert its noncash assets into cash (that is, to “liquidate” its assets). Liquidity ratios are generally computed with some portion of some organization current assets, occasionally comparing them with its current liabilities.*”

There are no clearly recommended liquidity indicators, because the situation can vary a lot in every company. For example, a store operating in retail field will have a higher liquidity than a shop selling cars. But it does not mean that the first store works more effectively than the second. Consequently, liquidity indicators should be analyzed together with profitability ratios. Then, on the basis of this big analysis it is necessary to draw the appropriate conclusions.

The economic theory distinguishes: high liquid (readily obtainable) asset, low liquid assets and illiquid assets. The easier and faster is the process of changing of a certain asset, taking into account its full value in a certain market, the more liquid the asset is. The highest liquidity has the hard money or money on a bank account. The lowest liquidity has, for example, an unfinished construction.

The liquidity of the enterprise is focused on the estimation of its financial solvency (capacity to pay) and liquidity. The first indicator is called - current ratio or in the abbreviation CR and has the following calculation formula:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

The result of calculation reflects the ability of the company to pay current (short-term) liabilities by means of only short-term assets. It is obvious the higher the indicator is, the better financial solvency of the firm is. The disadvantage of this index is that not all assets can be implemented urgently.

The next index is called quick ratio or acid test or QR. This indicator measures primarily the high liquid asset. The formula of calculation is the following:



$$\frac{\text{Current assets} - \text{inventories}}{\text{Current liabilities}}$$

The last indicator is cash ratio, which is based only on the estimation of money resources and short-term financial debts. The formula for calculation is below:

$$\frac{\text{Cash} + \text{cash equivalents}}{\text{Current liabilities}}$$

### **Profitability ratios**

The next type of index is the fundamental one, because it measures the main indicator of the company's activity - its profitability. The group of these indices reflects integrally the degree of effectiveness of resource utilization by firm's management, that are for disposition: material, labor, natural and monetary resources. The basis for the calculation is the ratio of profit or its derivative to assets, resources or flow of income, forming it. As it was mentioned by Mehta (2011, p. 429): *“Profitability refers to the ability of a business to earn profit. It shows the efficiency of the business. These ratios measure the profit earning capacity of the company. Profitability has direct link with sales.”*

There are two ways of calculation. The first is based on the calculation of outgoing funds from the profit per unit. The second method is represented in percentage.

This group of indicators characterize completer than profits, the conclusive results of the company's activity. It happens, because they take into account not only the profit, but also the ratio of the effect with the utilized resources.

### **ROE**

The first coefficient represents the estimated equity level; therefore, it is of greater interest for the existing and potential owners, and shareholders. The reason of such effect is clear. This index is one of the main indicators of investment attractiveness of a certain company just for owners, as it demonstrates how their capital will increase after investing in this certain enterprise.

The main comparative criterion for this index is the percentage of alternative returns that a potential investor might receive by investing his/her money in another business or in a less risky business. For example, borrowing money or investing money in a bank. The next

example of an alternative and less risky investment of money is the purchase of government securities.

If a bank deposit, for example, will give to an investor, more return than ROE, then the question of reasonability to continue running this type of business may arise. Because, an alternative type of investment, being less risky, brings more income. The higher is this indicator of profitability, the better. Undeniably, the company takes a better position during negotiations with potential investors, in this situation.

The formula of its calculation is:

$$\frac{\textit{Net profit or EBIT}}{\textit{Equity}}$$

### **ROA**

The second index by importance shows the result of utilization of all organization assets. This index, unlike the previous one, illustrates the organization's ability to generate revenues to the firm excluding the structure of its capital. It means, it is based on the calculation of all invested resources in the firm. Therefore, it represents lower interest for potential investors, but it is of interest to other stakeholders. Before all other things, it is attractive and interesting to the bank in the negotiations concerning the loan.

The formula of calculation is:

$$\frac{\textit{Net profit or EBIT}}{\textit{Assets}}$$

### **ROS**

The following index shows the share of profit in sales for a certain period of time.

Its formula of calculation is:

$$\frac{\textit{Net profit or EBIT}}{\textit{Sales}}$$

When interpreting these indices, several limitations should be considered. Initially, this is a temporary aspect - all profitability coefficients are very static, and not dynamic. That is, they reflect the effectiveness of company's performance for a specific period of the year and do not take into account the perspective at all. Therefore, the firm cannot calculate the

recoverability of its long-term investments or the increase in profits that may occur due to transition to modern technologies. Secondly, all profitability indices are based on the comparison of two values that have distinct characteristics (net profit/ sales/ EBIT etc.) and are company's current indicator. It means, this is the result of company's performance for the year. Equity amount (assets) represents the result of the performance of the firm for a long time and this amount should not coincide with the current valuation. In other words, we are talking about the difference between book value and market value. The value of assets in accounting will not be always equal to the market assets value. Then, when calculating all indices, it is also necessary to take into account the indicators of the company's market value.

The next limitation when applying these indices is the high profitability that can be achieved at the cost of very risky projects. So, when analyzing the profitability of a firm, the financial risks should be considered as well. Furthermore, when analyzing the indicators of profitability, the liquidity indices should be necessarily taken into consideration. The reason is very simple. The firm may have a big investment in fixed assets so that it will have high profitability, but on the other hand it will not have what to pay for its debts.

Also, when calculating these ratios, it is necessary to consider the debt ratio - it is possible the profitability growth was achieved due to high debt. In the future, this factor can greatly affect all company's indicators.

Above all, not to forget about the balance sheet, income statement and rate analysis that are very important business tools. Getting an investment for the company depends directly on these tools, and no matter what it is: leasing, selling shares or a bank loan. Accordingly, a good financial expert should be able to: draw up financial documents and keep company accounts, but also to understand the reports and financial analysis. A competent accountant or financial specialist should give the superiors data about financial risks and possibilities of potential earnings for the company.

### **Dupont formula**

In conclusion, the equation DuPont should be marked. It allows to determine very quickly and effectively, by means of which factors the profitability of the company has changed. This formula was for the first time applied in the 20s of the last century. The basis of the formula is the assumption that ROE and ROA can be divided into separate factors that affect

the profitability to a greater or lesser extent. Then, if the company results with unsatisfactory profitability of the invested funds, the DuPont formula helps very quickly to identify the factor(s) leading to such result. The formula for both profitability indices is the following:

$$\frac{\text{Income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equity}}$$

### **Asset management**

The next group of indicators measures the activity or the intensity of firm's assets utilization. This group is divided into two big subgroups. It measures the total number of turnover per year and the number of turnover per day. For example, assets turnover ratio indicates the number of full cycles of product turnover for the analyzed period. The time of assets turnover, on the contrary, stays how long will be/is the turnover period of the assets of the company. Respectively, the first indicator should be as high as possible and the second as low as possible.

The higher is the turnover ratio of the firm's assets, the more intensively the company uses the assets in the activities of the organization, which leads to higher profits. The same as in the situation with liquidity, it should be taken into account that indicators are highly dependent on industry specific features. The firms activating in the field of trade, where total revenue is large, will have the turnover higher in comparison to the firms activating in the field of industry, where it will be much lower.

This group of indicators is directly related to the sales volume. In other words, with increasing volumes, the value of most indicators of this group will automatically grow. In the modern market, it should be noted, the success of the organization and its solvency is directly dependent on the speed of capital turnover.

#### **Asset turnover ratio**

Assets turnover ratio is an indicator that reflects the efficiency of enterprise assets utilization. This index is used for subsequent analysis of the efficiency of firm's own assets management. Further, the indicator is also used to understand whether the assets in the firm are sufficient in relation to current or forecasted sales volumes (Belbin, 2013, p. 187).

The reason for the study of these indicators consists in the situation when there are too large investments in the assets of the company, the cash flow is being reducing. On the contrary, if there is lack of large assets, the sales are usually reduced. The formula for its calculation is the following:

$$\frac{Sales}{Assets}$$

Conversely, the indicator can be calculated by days. The result will be expressed in number of days (period) needed for one turnover of all assets of the company. Obviously, the lower the indicator is, the better for the company it is; because the capital is turning over faster, that allows the company to make more profit. In this case, the formula of calculation is below:

$$\frac{Assets}{Sales/365}$$

#### Inventory turnover

The next index is inventory turnover. It is based on the comparison of the volume of the company's total turnover for a given period and the number of inventories for the same period. Namely, this coefficient indicates how many times the inventories of a company are sold on average, for a certain period of time. In order to calculate this coefficient, the following formula is used:

$$\frac{Sales}{Inventory}$$

It is obviously that the higher this indicator is - the more efficient is the production and the lower is the necessity in capital for its organization and for the firm, which leads to profitability increase.

Low coefficient of inventory turnover is a sign the assets of the company are used inefficiently and give low profits. It happens because the company holds too many inventories and does not have time to use them quickly enough, as a result, there is a pressure on the company's efficiency. When the situation is vice versa, the too high inventory turnover can be an indicator that the firm is missing out on the possibility of additional sales, because the buyer wants to purchase goods, but the company does not have enough inventory for its production.

This indicator, as well as the previous one, can be turned over and calculate the average number of days during which the inventory turnover occurs. In this case, the formula is the following:

$$\frac{\text{Inventory}}{\text{Sales}/365}$$

#### Receivable Turnover and Payable Turnover

The next two indicators should always be considered together. Receivable turnover indicates the efficiency of debt management of the company. Short-term debt obligations are taken into account, first of all. The result of the calculations answers how many times a debtor can pay his/her debts. The formula for calculation is below:

$$\frac{\text{Sales}}{\text{Receivables}}$$

Payable turnover presents how fast the firm pays its own debts. It can be calculated with this formula:

$$\frac{\text{Purchases}}{\text{Payables}}$$

When comparing these two indicators, it is possible to receive information about how well the firm manages its cash flow. For example, if receivable turnover is higher than payable turnover, it means that the company gets money from its debtors faster than it pays its debts, which of course demonstrates a very effective management. On the contrary, if receivable turnover is less than payable turnover, this automatically indicates that financial management is not efficient (Lvova, 2017, p. 30).

#### **Debt management**

The next group of indicators measures the debt of the company. These indicators are used in many fields. The first field where these indicators are used by the management is to identify the effectiveness of management decisions. Additionally, this indicator is investigated by creditors to assess the degree of risks. Definitely, potential investors are interested in this indicator in order to get information about the potential profitability and possible dividends.

Two debt indicators are used most often - the ratio of total debt to total capital of the firm and the ratio of debt to equity. The formulas for calculation are as follows:

$$\frac{Debt}{Equity}$$

$$\frac{Debt}{Assets}$$

The value of this coefficient is in the range from 0 to 1 or from 0 to 100%. The result of the ratio means that an enterprise might not have debts generally or it can be fully indebted without its own capital. Evidently, above mentioned are two extremes. In practice it is impossible to find a firm that does not have debts at all or a company does not have own capital. If the indicator approaches to 1 or to 100%, then the debt of the company is higher.

From one point of view, the debts contribute to the development of the company, given that the firm may not have its own funds and uses for this purpose foreign funds. As a result, the profit also increases; it means, the firm is not able to implement profitable projects, without debts. From another point of view, it is important to take into account that too high debts of the company will affect the future negotiations, because the potential investors will be concerned about investing in a company that is too indebted. The reason to worry about is found in the fact that the extreme degree of the subject's dependence can cause delays in the calculations, which will lead to a shortage of working capital and the need to take short-term and quite expensive loans (Morris et al., 2009, p. 13-14).

As with other indicators, there is no universal value. The indicators of the norm can differ substantially for different spheres of the economy. For example, the debt indicator for a bank will be much higher than the value debt for a cosmetics store. Consequently, it is not recommended to compare this indicator within different economic fields, but it can be judged against the competition (Morris et al., 2009, p. 78).

### **3.4.3 Bonity and bankrupt models**

The next chapter of the diploma work will describe bonity and bankrupt models. These models are very widely used in recent times. The first type of models is based on the assessment of company's financial strength, while the second is founded on the assessment of probability of enterprise bankruptcy. In addition, four models will be analysed, which are

most often applied in practice. Separately will be described the model that was invented in the Czech Republic - the IN05 index.

### **Altman Z-score**

The first index appeared in the late 60's and was published by Edward I Altman, who was Assistant Professor of Finance at New York University. The work of the American professor in many respects is based on the researches of William Beaver. The main purpose of calculating this index is to reveal the probability of a firm's failure (bankruptcy). As basis for the calculation are taken the corporate income and the balance sheet values (Wahlen, 2014, p. 374).

Similarly, to all other bankrupt and bonitet indexes, this index is based on the calculation of coefficients. The initial formula for its calculation was the following:

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1.0X5, \text{ where}$$

X1 = working capital / total assets. This indicator measures the liquid assets in relation to the size of the company.

X2 = retained earnings / total assets. In this case, profitability and company's age and earning power are of big interest for calculation.

X3 = earnings before interest and taxes / total assets. This index is based on the fact it is important not only considering the net profit, but also the operating efficiency.

X4 = market value of equity / book value of total liabilities. This part of the calculation suggests that market valuation is also important as a possible red flag.

X5 = sales / total assets. This indicator is the standard total asset turnover. By the result of the calculation, if the index falls to -0.25, the enterprise is threatened with bankruptcy. If the index is +4.48 and higher, the company is not threatened with bankruptcy. Everything which is in between the mentioned values, is the so-called gray zone.

The negative side of this indicator is that it is suitable only for non-financial companies. The reason is that these companies utilize very often off-balance sheet items.



## IN05

Index IN – are models that were invented out by Neumeirovi family. A distinctive feature of this indicator is that it is relevant to a little/ non-liquid capital market. The indicator is applicable on the example of Czech companies. For the first time, the indicator was published in 1995, and it was modified several times. The groundwork for the indicator is the activity of 100 Czech firms (Kubeňka, 2016).

Calculation formula is the following:

$$IN05 = 0,13 * A + 0,04 * B + 3,97 * C + 0,21 * D + 0,09 * E$$

A = assets / liabilities,

B = profit before interest and tax / interest expense,

C = profit before interest and tax / assets,

D = total sales/ assets,

E = current assets / (short-term liabilities + short-term bank loans and lending).

After performing the calculation, if the index is higher than 1.6 – it means a good financial position of the firm; if the index is between 0.9 and 1.6 – this is the gray area, as in the case of the Altman Z-score; if the result of the calculations is lower 0.9 – the firm is threatened with bankruptcy.

## Kralicek Quick test

The following index is used primarily in German-speaking countries. The indicator is based on the calculation of four indices, here is the formula for calculating them:

$$R1 = \frac{Equity}{Total\ assets}$$

$$R2 = \frac{Liabilities - Cash}{Cash\ flow}$$

$$R3 = \frac{Cash\ flow}{Sales}$$

$$R4 = \frac{EBIT}{Total\ assets}$$

The next step is to analyse the calculation results for each index separately, using the following table:

**Table 1. Kralicek Qucik test**

	Excellent	Very well	Well	Poor	Dangerous
R1	> 30 %	>20 %	>10 %	>0 %	Negative
R2	<3 years	<5 years	<12 years	<30 years	>30 years
R3	> 10 %	>8 %	>5 %	>0 %	Negative
R4	> 15 %	>12 %	>8 %	>0 %	Negative

Source Antoneta et al., 2014.

The last step is to calculate the indices and their average:

**Table 2. Kralicek Qucik test – points**

Index	Results	Points
R1	0,3 and more	4
	0,2-0,3	3
	0,1-0,2	2
	0,0-0,1	1
	0 and less	0
R2	3 and less	4
	3-5	3
	5-12	2
	12-30	1
	30 and more	0
R3	0,15 and more	4
	0,12-0,15	3
	0,08-0,12	2
	0,00-0,08	1
	0,00 and less	0
R4	0,1 and more	4
	0,08-1	3
	0,05-0,08	2
	0,00-0,05	1
	0,00 and less	0

Source: Source Antoneta et al., 2014.

In the end, if the result is less than 1 it means very bad company, 1-2 point means average company, 2-3 well-run company and everything higher than 3 means perfect company (Rejnuš, 2016, p. 283-284).

#### **3.4.4 Summary of main findings**

Financial analysis is one of the main tools that are applied by financial management. The basis for financial analysis is the results of accountants' work - this is primarily the income statement (or profit and loss statement), balance sheet and sometimes cash flow statement. Other accounting reports can also be applied. Therefore, it is very important that the financial management understands all above mentioned accounting documents and knows the order of their preparation.

The first step in financial analysis is to perform the horizontal and the vertical analysis of the account statement. Thanks to this analysis, the financial expert obtains an initial idea of what the company's financial situation is. The first type of analysis is based on changes in time indicator, while the second is calculated with respect to a certain amount.

The second step in financial analysis is the calculation of financial ratio analysis. In this type of analysis, each group of indicators points out to one particular change. That is why, it is forbidden to study separately each subgroup of the financial ratio analysis. Liquidity indicators analyze the status of the firm in relation to its ability to pay debts.

The next indicators, that were described in this part of the paperwork, are profitability indicators. These indicators are most important for the potential investors, since they demonstrate how profitable the firm is and how much it is able to earn.

Asset management specifies the intensity of company's assets utilization. Certainly, every manager tends to ensure that his/her company uses its assets as actively as possible.

The group of indicators called Debt management analyzes the debts of the firm. On one hand, the company aims to have the least amount of debts, but on the other hand, the debts can perform a useful function. For example, a firm does not have enough own resources; the interest on debts reduces the tax base; whereas dividends have no effect on the tax base.

The last group of indicators is based on the assessment of financial health of the company from the perspective of a bankruptcy or bonites. Specifically, the main answer after calculating this group of indicators is factual finding whether the firm is threatened with bankruptcy or not. Also, the indicators are used to evaluate the financial strength of an enterprise. Four indicators will be applied in the diploma work: Altman Z-score, IN05 and Quick test.

## **4 Practical part**

The analysis of company's operation will be conducted in accordance with the methodology given in the theory of diploma paper. In the first part the horizontal and vertical analysis of the balance sheet and income statement will be performed.

The next step is conduction of the financial analysis that will be performed with the help of a methodical tool used in the financial analysis. The fourth step is the analysis of bonity and bankrupt model. The last step is the comparison of main indexes with the competition, in particular the amount of net profit per passenger, and the comparison of ROE and ROA indicators.

For the analysis, it was selected the hour-angle axis with a period of the last six years - from 2012 to 2016. This period is indisputably sufficient for catching all the important parameters of the firm.

Further, all indexes will be calculated in Euro, because this analysis is written in an European university. The firm certainly publishes the results of its operation in Russian Rubles. It is necessary to underline the main disadvantage of this approach - in 2013 Ruble exchange rate against Euro was 44 Rubles, whereas a year later, due to sanctions against Russia, Ruble exchange rate fell to a level of 70 rubles per Euro.

### **4.1 Horizontal and vertical analysis**

The main part of the firm's assets is Non-Current assets, which have 60% of the total assets (table 3). This is connected primarily to the area in which the company conducts the business - the fundament of its assets represents the aircraft fleet. From Current assets, Receivables should be underlined primarily, which have about 1/3 of the assets. This part of assets is related with the sale of company's services - the firm sells its services mainly via a wide network of agents that are invoiced. Important is the growing amount of cash - from 7% to 10%.

**Table 3. Horizontal analysis – balance sheet**

	2011	2012	2013	2014	2015	2016
Total asset	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Non-Current assets	62.25%	62.66%	61.06%	66.80%	57.71%	56.52%
Property, plant and equipment	36.92%	39.00%	42.44%	41.78%	33.15%	35.05%
Prepayment for aircraft	8.11%	7.13%	5.89%	10.53%	11.20%	9.30%
Long-term financial investments	3.58%	3.21%	2.92%	2.20%	1.94%	1.10%
Current asset	37.53%	37.34%	38.94%	33.20%	42.29%	43.48%
Inventory	2.22%	2.26%	2.36%	2.35%	2.45%	0.38%
Receivables	27.50%	25.97%	26.62%	20.44%	23.26%	26.12%
Cash	7.37%	7.94%	8.92%	9.56%	9.74%	10.52%

Source: Annual report Aeroflot, own calculations

From the horizontal analysis of the firm's assets, it can be observed that there have been no big leaps during the whole period of observation (table 4). The only exception are Non-Current assets in 2012, which increased thanks to the firm's investment in this part of the assets.

**Table 4. Vertical analysis – balance sheet**

	2012	2013	2014	2015	2016
Total assets	17%	8%	17%	-28%	-19%
Non-Current assets	1074%	5%	28%	-38%	-20%
Property, plant and equipment	24%	18%	15%	-43%	-14%
Prepayment for aircraft	3%	-11%	109%	-23%	-32%
Long-term financial investments	5%	-2%	-12%	-36%	-54%
Current assets	16%	13%	0%	-8%	-16%
Inventory	19%	13%	16%	-24%	-87%
Receivables	11%	11%	-10%	-18%	-9%
Cash	26%	21%	25%	-26%	-12%

	2012	2013	2014	2015	2016
Total assets	704.34	395.27	880.20	-1697.08	-821.03
Non-Current assets	2770.92	164.00	888.13	-1534.68	-516.50
Property, plant and equipment	360.45	334.04	333.54	-1090.05	-204.15
Prepayment for aircraft	9.83	-36.94	335.35	-149.23	-160.11
Long-term financial investments	6.97	-2.48	-17.95	-48.88	-45.98
Current assets	255.42	231.27	-7.94	-162.40	-304.53
Inventory	17.65	13.96	20.18	-35.10	-94.57
Receivables	119.82	136.69	-143.36	-222.48	-88.37
Cash	79.80	82.44	117.53	-154.33	-51.99

Source: Annual report Aeroflot, own calculations

From the horizontal analysis of Equity and debts it can be noticed that the debt represents the framework for financing the company's assets (table 5). Explicitly, the firm contracts debts and then invests them in assets and does not attempt to finance its operations with its own resources. The explanation of such a strategy is the very special communication with Sberbank, where the Russian state has a very strong influence.

**Table 5. Vertical analysis – balance sheet**

	2011	2012	2013	2014	2015	2016
Equity	26.32%	26.44%	26.04%	-4.86%	-11.46%	13.62%
Net profit	7.13%	4.72%	3.51%	-6.17%	-7.16%	23.17%
Current liabilities	37.78%	36.52%	32.49%	48.66%	56.50%	40.33%
Payables	19.73%	16.08%	17.33%	17.63%	17.37%	16.66%
Total debts	37.78%	36.52%	41.39%	62.76%	74.15%	48.08%
Loans and borrowings	14.36%	11.48%	6.41%	8.71%	21.72%	6.80%
Finance lease	35.26%	24.38%	34.44%	53.75%	52.20%	41.01%

Source: Annual report Aeroflot, own calculations

The difference between the years suggests that the side of the funding sources of the business depends heavily on the situation in the company's environment (see table 6). It should also be noted that during the period of observation, net profit was negative several times. A more detailed analysis of the causes of this phenomenon will be performed in the analysis of profit and loss account.

**Table 6. Vertical analysis – balance sheet**

	2012	2013	2014	2015	2016
Equity	17.61%	6.55%	-121.82%	70.19%	-196.75%
Net profit	-22.46%	-19.63%	-305.71%	-16.28%	-363.56%
Current liabilities	13.15%	-3.74%	74.96%	-16.14%	-41.89%
Payables	-4.58%	16.57%	18.84%	-28.83%	-21.93%
Total debts	13.15%	22.62%	77.16%	-14.67%	-47.23%
Loans and borrowings	-6.47%	-39.60%	58.87%	80.00%	-74.50%
Finance lease	-19.08%	52.80%	82.36%	-29.86%	-36.06%

	2012	2013	2014	2015	2016
Equity	191.42	83.73	-1659.13	-208.55	994.91
Net profit	-66.10	-44.80	-560.59	61.41	1148.11
Current liabilities	205.20	-66.08	1273.72	-479.86	-1044.43
Payables	-37.36	128.79	170.72	-310.43	-168.10
Total debts	205.20	399.27	1670.17	-562.59	-1545.31
Loans and borrowings	-38.36	-219.77	197.32	425.97	-714.04
Finance lease	-277.83	622.29	1483.22	-980.78	-830.50

Source: Annual report Aeroflot, own calculations

The reason of net profit fluctuations in the firm is found both on the side of income and on the side of expenses (see table 7). It can be unequivocally said that the company's earnings fluctuate very much and cannot be predicted - in 2012 there was an increase of 53.67%, while in 2015 there was a drop of 17.38%. Among the company's expenses, it should be noted first of all Aircraft, traffic and passenger servicing, the following are the costs associated with personnel and, of course, Aircraft maintenance. In other words, the main expenses of the company have increased dramatically.

**Table 7. Vertical analysis – income statement**

	2012	2013	2014	2015	2016
Total revenue	53.67%	13.72%	-3.28%	-17.38%	2.38%
EBIT	-37.94%	76.02%	-49.91%	149.10%	22.92%
Purchases	32.36%	-16.06%	22.92%	-93.77%	831.77%
Interest expenses	-14.42%	-3.39%	30.78%	268.30%	-71.66%
Aircraft, traffic and passenger servicing	71.66%	31.87%	1.73%	-21.65%	-0.56%
Staff	44.93%	16.15%	1.19%	-32.13%	-0.32%
Aircraft maintenance	81.58%	7.70%	-16.97%	6.07%	2.28%
Total operating costs excluding aircraft fuel	61.50%	95.91%	1.41%	-20.44%	2.55%
Aircraft fuel	57.79%	10.02%	-3.02%	-31.12%	-7.75%

	2012	2013	2014	2015	2016
Total revenue	2234.05	877.35	-238.94	-1222.54	138.14
EBIT	-171.87	213.72	-246.98	369.60	141.55
Purchases	32.11	-21.09	25.27	-127.08	70.22
Interest expenses	-14.48	-2.91	25.55	291.24	-286.47
Aircraft, traffic and passenger servicing	418.08	319.23	22.79	-290.94	-5.88
Staff	302.60	157.67	13.53	-368.59	-2.48
Aircraft maintenance	212.49	36.41	-86.42	25.66	10.24
Total operating costs excluding aircraft fuel	933.16	2350.31	67.86	-995.11	98.95
Aircraft fuel	658.49	180.23	-59.82	-597.03	-102.36

Source: Annual report Aeroflot, own calculations

Among the revenue sources of the company, underlined should be the growing demand for flights in Russia and Asia (chart 11). The numbers of flights show that even considering the crisis in Russia, the demand for flights with Aeroflot company is very high. Conversely, the situation in Syria clearly meant a drop-in interest for the Middle East region.



Chart 11. Operational performance by region in %

**Aeroflot Group's operational performance by region (scheduled and charter flights)**

Region	Passenger traffic, million PAX			Passenger turnover, billion RPK			Available seat-kilometres, billion ASK			Passenger load factor, %		
	2015	2016	change, %	2015	2016	change, %	2015	2016	change, %	2015	2016	change, p.p.
Russia	23.3	24.7	6.0	44.6	47.9	7.4	56.1	57.5	2.4	79.5	83.4	3.9
Europe	7.9	9.0	13.9	17.5	20.1	14.9	23.6	26.5	12.4	74.0	75.6	1.6
Asia	2.7	3.1	14.5	17.5	19.8	13.1	22.3	24.8	11.4	78.7	79.9	1.2
CIS	2.5	2.4	(4.4)	4.7	5.4	14.6	6.1	6.6	8.2	77.7	82.2	4.5
Middle East	1.6	1.5	(7.7)	4.7	4.6	(2.4)	6.2	6.0	(4.5)	76.0	77.7	1.7
Americas	0.8	0.9	15.2	6.8	7.9	16.0	8.2	9.3	12.7	82.5	84.9	2.4
<b>Scheduled flights</b>	<b>38.9</b>	<b>41.7</b>	<b>7.1</b>	<b>95.9</b>	<b>105.7</b>	<b>10.3</b>	<b>122.6</b>	<b>130.6</b>	<b>6.6</b>	<b>78.2</b>	<b>80.9</b>	<b>2.7</b>
Charter flights	0.5	1.8	245.2	1.7	6.4	265.1	2.2	7.0	223.8	80.8	91.1	10.3
<b>Total flights</b>	<b>39.4</b>	<b>43.4</b>	<b>10.3</b>	<b>97.6</b>	<b>112.1</b>	<b>14.8</b>	<b>124.7</b>	<b>137.7</b>	<b>10.4</b>	<b>78.3</b>	<b>81.4</b>	<b>3.1</b>

Source: Annual report Aeroflot

Cash flow (table 8), as well as net profit, cannot be predicted because it fluctuates very much. This is certainly a very negative finding, because the high dispersion in the values does not give strong creditability to the management of the firm.

Table 8. Vertical analysis – cash flow statement in eur

	2011	2012	2013	2014	2015	2016
Cash flow	83.59	81.04	89.75	197.18	-701.88	19.58
		-3.06%	10.75%	119.69%	-455.97%	-102.79%
		-2.56	8.71	107.43	-899.05	721.45

Source: Annual report Aeroflot, own calculations

## 4.2 Financial ratio analysis

The liquidity of the company is at a very good level (table 9). In addition, to be noted that this financial index is not very much changing and remains at the same level, which of course is very good for the financial evaluation of the company.

**Table 9. Liquidity ratios**

	2011	2012	2013	2014	2015	2016
Liq 1	1.07	1.25	1.41	1.40	1.29	1.08
Liq 2	1.01	1.17	1.32	1.30	1.21	1.07
Liq 3	0.21	0.27	0.32	0.40	0.30	0.26

Source: Annual report Aeroflot, own calculations

Because of the large variance in net profit, it is impossible to give an explicit answer on the efficiency indicators (table 10). This is especially evident in case of 2014 and 2015, when net profit and equity are negative, while the common indicator resulted positive, whereas in case of ROA and ROS, that has only one negative indicator, the result is completely different.

**Table 10. Efficiency ratios**

	2011	2012	2013	2014	2015	2016
ROE	27.08%	17.85%	13.46%	126.95%	62.45%	170.13%
ROA	7.13%	4.72%	3.51%	-6.17%	-7.16%	23.17%
ROS	7.07%	3.57%	2.52%	-5.36%	-5.43%	13.99%

Source: Annual report Aeroflot, own calculations

The above given finding is very clearly visible on the DuPont index (table 11). The last part of DuPont index changes very much. This last part is based on equity calculation.

**Table 11. DuPont index**

	2011	2012	2013	2014	2015	2016
Income/Rev	0.07	0.04	0.03	-0.05	-0.05	0.14
Rev/Ass	0.07	0.05	0.04	-0.06	-0.07	0.23
Ass/Equi	3.80	3.78	3.84	-20.56	-8.73	7.34

Source: Annual report Aeroflot, own calculations

Definitely, we should positively mention the assets turnover indicators, their turnover speed is constantly increasing (table 12). The assets turn over 1.5 times a year, whereas in 2012 it was only 1 time. In this case, inventory turnover of the company does not play a big role, because inventory is not so important for this enterprise.

**Table 12. Assets turnover ratios**

	2011	2012	2013	2014	2015	2016
Asset turnover	1.01	1.32	1.39	1.15	1.32	1.66
Asset turnover in days	362.15	275.86	262.42	317.00	277.10	220.31
Inv turnover	45.46	58.57	59.05	49.07	53.70	434.98
Inv turnover in days	8.03	6.23	6.18	7.44	6.80	0.84

Source: Annual report Aeroflot, own calculations

When comparing Receivable Turnover and Payable Turnover, it can be affirmed the firm is not in a good situation; because the company pays its debts faster than it receives money from its consumers (table 13). On the other hand, this is balanced by the money received from Sberbank, with which the firm has very special communication and due to this communication, it does not have lack of operating capital.

**Table 13. Receivables and payables turnover ratios**

	2011	2012	2013	2014	2015	2016
Receivable Turnover	3.66	5.09	5.22	5.63	5.66	6.34
Payable Turnover	0.12	0.17	0.12	0.13	0.01	0.13

Source: Annual report Aeroflot, own calculations

As already mentioned above, the firm finances its activity with the help of debts, which is proved in the indices of debt (table 14). The situation, so far, demonstrates that the company is developing quite successfully and succeeds to pay its debts. In addition, after studying in detail the annual report, it is seen that the firm pays loans at around 7-10% per annum, whereas its ROE is much higher. Therefore, Aeroflot company is a good example to show how the firm uses the finance leverage to achieve its efficiency growth.

**Table 14. Debt ratios**

	2011	2012	2013	2014	2015	2016
Debt/equity	1.44	1.38	1.59	-12.91	-6.47	3.53
Debt/assets	0.38	0.37	0.41	0.63	0.74	0.48

Source: Annual report Aeroflot, own calculations

### 4.3 Bonity and bankrupt models

In the following subchapter Bonity and Bankrupt models will be calculated. As in the previous chapters, as a fundament will be taken the methodology given in the theoretical part of the paper work and the data available on the official web pages of the firm.

#### 4.3.1 Altman Z-score

According to the first indicator, the firm is not threatened with bankruptcy. On average, this indicator has an average value of 4.39, for the whole period of analysis – see table 15. Therefore, according to this indicator, shareholders should not be afraid for their savings invested into the company.

**Table 15. Results – Z-score**

	2011	2012	2013	2014	2015	2016	AVG
Z	4.70	4.88	4.73	3.25	3.59	5.15	4.39

Source: Annual report Aeroflot, own calculations

#### 4.3.2 IN05

The average annual value of this indicator is 1.3, which according to the calculations corresponds to the gray area, unfortunately. The worst situation was in 2014 – see table 16. On the other hand, it should be mentioned that this index was projected specifically for the Czech Republic, and it should not meet the needs of other countries.

**Table 16. Results – IN05**

	2011	2012	2013	2014	2015	2016	AVG
IN05	1.53	1.13	1.35	0.78	1.18	1.84	1.30

Source: Annual report Aeroflot, own calculations

### 4.3.3 Quick test

The first pointer indicates that the situation of the company is Very well or Well – see table 17. The second and third indicators show that the firm is in danger. The results of the fourth indicator are similar to the first one. That is, there is no unambiguous answer about the dangerous state of the firm, on this indicator.

**Table 17. Results – quick test**

	2011	2012	2013	2014	2015	2016	AVG
R1	0.26	0.26	0.26	-0.05	-0.11	0.14	0.13
R2	45.77	54.92	53.07	28.02	-5.67	164.19	56.72
R3	0.02	0.01	0.01	0.03	-0.12	0.00	-0.01
R4	0.11	0.06	0.09	0.04	0.14	0.21	0.11

Source: Annual report Aeroflot, own calculations

It is necessary to calculate how many points each indicator will receive. The first indicator gets – 2 points, the second and third indicators receive – 0 points, and the fourth – 3 points. It results, the arithmetic mean of this indicator is 1.75. In other words, the company can be unequivocally attributed to the list of average companies. On the other hand, it should be recalled that this indicator is used mainly in German-speaking countries. In addition, the variance between the quantities themselves is very big, which reduces the reliability of this indicator.

## 4.4 Review

In this chapter, a detailed analysis of Aeroflot company state was performed. The company occupies an indisputably key position not only in the Russian, but also in the international market.

Unfortunately, there is a list of problems in the firm, that have arisen from inside and have their own reasons, and from outside having external factors. Firstly, behaving as a monopolist in the market, the company lowers the services quality and does not care effectively for the pilots. Secondly, the firm has big difficulties in its domestic market, because the country is in crisis now, and people are limiting their flights. Thirdly, some indicators in the financial analysis speak about possible problems in the financial area.

On the other hand, the firm has big chances for success. It consists in the rapidly growing countries of Southeast Asia region - above all in the region is China. Further, the company

has very good relations with the bank and effectively uses bank loans for its financing. All the other indicators speak about the very strong firm's position in the market.

#### **4.5 Suggestions for improvement**

Based on the research conducted, it is possible to start with suggestions for the company, that can improve the situation on the market. Recommendations and their justification will be given below:

- Finding solutions for meal options and accommodation of passengers, with delays on domestic Russian flights;
- Selling the unprofitable subsidiaries;
- Stop decreasing the quality of service on domestic flights;
- Reviewing the system of pilots' motivation;
- Increasing the activity in flights to Southeast Asia region.

Recently, a decreasing trend can be seen in the company's turnover, on the domestic market of Russia. This is undoubtedly connected with economic difficulties in Russia, due to international sanctions. But, there is a problem of a different nature, as well. In the last period, the firm has completely stopped caring about the quality of passengers' transportation over Russia. For example, it does not provide the passengers with the possibility of meal, in the case of a short delay, or accommodation in a hotel, in the case of a longer delay in the flight. Last time, even the president Putin intervened, when there was a large number of delays in departing flights (Rusbase. V probleme "Ajeroflota" i ajeroportov vmeshalsja Putin).

According to the author of this paper work, the company should slightly modify its strategy and stop trying to cover all segments of the market, at once. The times of mass marketing are not actual, any more. The firm, per author's opinion, should have one clear strategy - for premium passengers to provide services under the brand called – Aeroflot, for the segment low cost – it should activate through one of its companies. Unfortunately, the current situation in Russia and its international situation are not very good, therefore, the progress should not be expected just on the internal Russian market. The firm should clearly identify the two above mentioned strategies and all other subsidiaries of the airline should be sold.

The company has a de facto monopoly position in the Russian transportation market. The nearest competitor of the firm is very far away. This position in the market leads to the fact that Aeroflot starts behaving exactly as a monopolist described in the books. For example: installs additional seats in the salon, lowers the quality of food, worsens the service in the waiting rooms, etc. Perhaps the reason of such a behavior is in the fact that many domestic flights in Russia are operated only by Aeroflot. A consequence of such a strategy could be described by that its customers stop flying by air and start using the railways, which means travel by train.

Aeroflot is the main employer in the Russian pilots' market, but it should be underlined that in recent years it was observed the mass movement of pilots for work in China. Over the last 2 years, 300 pilots moved for work in China, for example. Accordingly, the company may be faced with the problem that there are no experienced employees (pilots), which will ultimately affect its financial indicators. The reason for pilots' movement is the motivational program in China, which is much better than in the Russian firm (BBC. "Oni tol'ko zljat": pochemu piloty massovo uezzhajut iz Rossii).

In this thesis, we have several times pointed on the growing Chinese market. The company could further increase its activity in this direction. Moscow could connect Europe and China and become one of the biggest hubs in the world.

## **5 Conclusion**

This diploma thesis was oriented on the performance of enterprise financial analysis. The firm selected for analysis is undisputedly a big leader in Russia, also one of big companies on the world market.

In the first part of the bachelor's work, the literature review on the problem under discussion, was carried out. There was very carefully examined the area of aviation industry and Aeroflot company was represented and described. The methodology for subsequent analysis was done, as well. Therefore, the first sub-goal, the realization of the literature in the field of study of Czech and foreign authors, can be considered fulfilled.

In the second part of the thesis, based on the data available in the public domain, a financial analysis of the enterprise was carried out. It was the analysis of the whole company, not only a part of it.

Analysis was carried out in accordance with the methodical plan described in the first part of the paper work. It can be affirmed that the second sub-goal of the diploma is considered fulfilled – the performance of financial analysis of the enterprise.

Based on the analysis given at the end of the firm's activity, the following was suggested: Offering meals and accommodation for passengers travelling on domestic Russian flights, in case of delays; unprofitable subsidiaries selling, keeping the good quality level for service on domestic flights; revising the motivation system for pilots; increase the flights activity to Southeast Asia.

All suggestions are real for the implementation in practice and may improve the company's status in the market. Based on this, it can be affirmed that the purpose of this bachelor thesis – To formulate recommendations for the company which will be based on the performed financial analysis of Aeroflot enterprise – may be considered fulfilled.

This diploma can be extended into other areas, such as the comparison of company's financial analysis with its direct competitors, both in Russia and abroad.



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## 7 Appendix

### Aeroflot Airlines network

