MASTER'S THESIS

Řízení hodnoty společnosti Byte-Transit-Continent s.r.o.

Value management for company Byte-Transit-Continent LLC

STUDY PROGRAMME
Management of Development Projects

FIELD OF STUDY
Project Management of Innovations in a Company

SUPERVISOR
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ZADÁNÍ DIPLOMOVÉ PRÁCE

I. OSOBNÍ A STUDIJNÍ ÚDAJE

Příjmení:	Parnukhaeva	Jméno: Aiana	Osobní číslo: 453603
Fakulta/ústav:	Masarykův ústav vyšších studií (MÚVS)		
Zadávající katedra/ústav:	Oddělení ekonomických studií		
Studijní program:	Řízení rozvojových projektů		
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II. ÚDAJE K DIPLOMOVÉ PRÁCI

Název diplomové práce:

Řízení hodnoty společnosti Byte-Transit-Continent s.r.o.

Název diplomové práce anglicky:

Value management for company Byte-Transit-Continent LCC

Pokyny pro vypracování:

CÍL: Cílem práce je stanovit hodnotu podniku Byte-Transit-Continent a navrhnout strategie, které by mohly vést k jejímu růstu a efekty růstu kvantifikovat.
PŘÍNOS: Přínos práce spočívá v možnosti praktické realizace navrhovaných strategií růstu hodnoty společnosti pro jejího vlastníka.
OSNOVA: 1. Úvod; 2. Teoretická část - koncepce řízení hodnoty podniku, metody ocenění hodnoty podniku, modelování jako nástroj řízení hodnoty; 3. Praktická část - analýza účetních výkazů společnosti, stanovení hodnoty podle metod ocenění podniku, klíčové faktory růstu hodnoty, modelování a rozvoj strategií růstu hodnoty společnosti, analýza citlivosti strategií; 4. Závěr

Seznam doporučené literatury:

DAMODARAN, A. Investment Valuation. Jhon Wiley & Son Inc. New York, 2004.
COPELAND, T. Valuation. Jhon Wiley & Son Inc. New York, 2005.
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BRIGHAM, J. Financial management. Theory and practice. South Western Cengage learning. Mason, 2011.

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III. PŘEVZETÍ ZADÁNÍ

11.04.18	
Datum převzetí zadání	Podpis studenta(ky)

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Declaration

I hereby declare that I have done this thesis independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to citation rules.
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Abstrakt

Cílem diplomové práce je stanovit hodnotu společnosti Byte-Transit-Continent LLC pro potenciálního externího investora a způsoby, které mohou vést ke zvýšení hodnoty společnosti. Práce je rozdělena do teoretické a praktické části. Teoretická část se zabývá základními pojmy oceňování, jako jsou standardy hodnoty, oceňovácí proces, metody oceňování. Praktická část vychází z teoretické části a zahrnuje proces stanovení hodnoty podniku, který předpokládá aplikaci strategických a finančních analýz, prognstických a plánovacích nástrojů.

Klíčová slova

Oceňování podniku, hodnota, DCF metoda, strategická analýza, finanční analýza

Abstract

The goal of the master's thesis is to determine the value of Byte-Transit-Continent LLC for potential external investor and the ways, which can lead to increase in the company's value. The thesis is divided into the theoretical and practical part. The theoretical part considers the basic concepts of business valuation, such as value standards, evaluation process, valuation methods. The practical part is based on theoretical part and includes the process of company value determination, which assumes applying the strategic and financial analysis, forecast and planning tools.

Key words

Business valuation, company value, DCF method, financial analysis, strategic analysis

CONTENTS

INTRODUCTION

The goal of the master's thesis is to determine the market value of Byte-Transit-Continent and the ways, which can lead to increase in the company's value. The relevance of the master's thesis can be explained by the fact that results of the valuation of the company can serve as a basis for making managerial decisions, such as improving the efficiency of current business management, investment decisions, restructuring the company, developing a business plan, determining the creditworthiness of the business. In addition, in modern business realities, the increasing of company value becomes the primary goal of any operating business.

The purpose of estimating the company's value is the purchasing of the business by any external investors. The determination of factors, that influence on company's value and ways, that increase this value, is essential for making strategic decisions both by the company owner and by the investor. The company being evaluated is Byte-Transit-Continent, located in Novosibirsk, Siberian Federal districts and operated on the road freight shipping market.

To fulfill the above-mentioned goal, the thesis is divided into the theoretical and practical part. The theoretical part will deal with the basic concepts of valuation, such as the value of the company and its standards, the company valuation process and the basic valuation methods. The first part is considered as a methodological basis for the practical part.

In the beginning of the practical part, the company Byte-Transit-Continent LCC will be presented, then strategic and financial analyzes will be carried out. Strategic analysis will include PEST analysis, market attractiveness and competitive advantage analysis. Then, company's financial statement will be analyzed. After this, financial plan will be developed, on the basis of which the company's value will be determined by chosen valuation methods.

THEORETICAL PART

1 BASIC CONCEPTS

One of the initial tasks, the fulfillment of which is necessary to achieve the goal set in this paper, is defining the basic valuation concepts. This chapter focuses on defining the concept of an enterprise, company value standards, describing the reasons for the business valuation.

1.1 Concept of company

Currently, there is no single definition of the concept of company or enterprise[1]. Law and economics consider this concept from different angles. According to the Civil Code of the Russian Federation, company is property complex, which is used for carrying out entrepreneurial activities. Also, the company or its part may be objects for transactions like purchase, sale, pledge or rent and other transactions connected with the estab-lishment, modification and termination of property-related rights[2]. European Union Commission defines enterprise as „an entity engaged in an economic activity, irrespec-tive of its legal form. This includes, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations regu-larly engaged in an economic activity."[3] In accordance with the Czech law enterprise is „an organized set of assets which was created by the entrepreneur and which of his will provide the functioning of his business."[4]

From above definitions, it is obvious that in terms of legislation, company, in the first place, is an object of the legal relations. In the second place, it is a property complex which includes all types of property intended for its activities, including land plots, buildings, facilities, equipment, inventory, raw materials, products, claims, debts, com-mercial designation, trademarks, service marks and other exclusive rights.

Economic theory considers the company as a single functional unit. There is a variety of definitions of company in economic theory. One of the most common is that the company is a system of converting the initial resources into finished products. Produc-tion function plays the most important role. The goal of the company is to maximize income (profit)[5]. Valuers consider the company as a property complex. This approach is similar to the legal one. However, from the point of view of business valuation, the

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[1]   In this thesis, the words enterprise and company are considered as synonyms.

[2]   Civil Code of Russian Federation (the first part) of 30.11.1994 N 51-FL (edition of 29.12.2017)].

[3]   Commission Recommendation of 6 May 2003 concerning the definition of micro, small and me-dium-sized enterprises

[4]   Act No. 89/2012 Coll., Civil Code, § 502

[5]   Saakova, L.V. Comparative analysis of the firm theories and the essence of modern corporation. In: Questions of economic theory. Macroeconomic [online]. 2010, p. 80. [vid. 27.04.2018]. Available at: https://cyberleninka.ru/article/v/sravnitelnyy-analiz-teoriy-firmy-i-suschnost-sovremennoy-korporatsii

company is not just a property, but property which generates profit. In this case, this approach to the concept of company is similar to the definition of economic theory. In terms of business valuation, the most accurate definition of company was suggested by Eva Kislingerová: company is an entity which has an ability to provide some benefits and generate a certain profit at present and in the future[6] .

1.2 Standards of company value

Standards of value are divided into international and national ones. International standards were developed by the International Society of Appraisers and contain requirements for the information which is used for valuation. Russian valuation standards are regulated by Federal Law No. 135-FL of July 29, 1998 „On Valuation Activities in the Russian Federation" and by Resolution of the Russian Federation Government of 06.07.2001 „On approval of valuation standards". National standards deal with methodological approaches to the valuation and the requirements for the relevant reporting documentation.

Common standards of value are a set of requirements for valuation. There are six basic valuation standards:

- market value,
- equitable value,
- investment value,
- synergistic value,
- liquidation value,
- intrinsic (fundamental) value.

The main differences between these standards are as follows:
1.The standard of market value assumes that the valuation of the business or investment project is carried out on the basis of information (about property, current and forecast conjuncture in the sales market and purchased resources, etc.), which is equally accessible to any potential buyer and seller of the business, to any investor. According International Standards, market value is „the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion"[7] The market valuation is based on cost accounting associated with the production of goods, the competition level, company's image, macro- and microeconomic conditions which

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[6]   KISLINGEROVÁ, Eva. Oceňování podniku. 2., přeprac. a dopl. vyd. Praha: C.H. Beck, 2001. C.H. Beck pro praxi. ISBN 8071795291, p. 10.
[7]   International Valuation Standards. 2017. p.18

impact on company value. Market value can be determined only if the following conditions of equilibrium transaction exist:

The market is competitive and provides enough assets for the interaction of a large number buyers and sellers;

The buyer and seller are free, independent of each other, are well informed about the subject of the transaction and act only in order to maximize their own interests: to increase the income or better satisfy own needs;

- Exposition period of the evaluated object (period starting from the object presentation on the market to the transaction with him) is sufficient to ensure his availability to all potential buyers;

- Payment of the transaction is made in cash or in cash equivalent, while the buyer and seller use typical financial conditions adopted in the market.

2. In accordance with International Standards equitable value is the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties. Standard of equitable value implies that business valuation should be based on equal information for the buyer and the seller. Their business opportunities are also assumed to be the same. Equitable Value is a broader concept than Market Value. Although in many cases the price that is fair between two parties will equate to that obtainable in the market, there will be cases where the assessment of Equitable Value will involve taking into account matters that have to be disregarded in the assessment of Market Value, such as certain elements of Synergistic Value arising because of the combination of the interests.

3. Investment value is the value of object, which is determined on the basis of object's profitability for a particular person with the specified investment purposes. That is, the investment value standard assumes that the business valuation is carried out based on investor's awareness of evaluated company and its market prospects. The investment value considers the investor's requirements. It is calculated to make an investment decision.

4. Synergistic value is the result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values.

5. If it is intended to liquidate the company and its assets are realized separately, then the difference between the expected proceeds from the sale of the company's assets and the costs of liquidation is defined as the liquidation value. Due to the limitation of the sale time period, which is not enough to get acquainted with the sold assets by all potential buyers, the liquidation value can be significantly lower than the market value. This value is determined, as a rule, when the enterprise is liquidated by the decision of the owner or the judicial authority. Also, it represents the amount of money that can be actually received as a result of the sale of company's assets, regardless of their book value.

6. The standard of intrinsic value implies that the business valuation is provided by an independent valuer on the basis of his own knowledge. Valuer cannot be forced to request information from one of the interested parties (the seller or the buyer of the company), otherwise he might be dependent on this information and on one of the interested parties.

The practical conclusion from the above is that an independent valuer should have his own experience in the industry of the evaluated company and his own independent information about it to fulfill the standard of intrinsic (fundamental) value. The standard of intrinsic (fundamental) value also assumes that the company should be evaluated by all existing business valuation methods. Intrinsic value is defined as weighted average result of different methods.

1.3 Business valuation purposes

In Western countries, and especially in the United States, interest in the business valuation has been growing since the early 1980s. Evaluation and forecasting of the company's value are used not only for determination of company's possible sale price, but also as a criterion for choosing a development strategy. The results of the evaluation affect many company's activities, as well as its financial condition determines the goals and objectives of the evaluation.

Unfortunately, at most domestic companies, managers often underestimate the need to determine the real market value of company and its assets. The business valuation has become especially relevant in the light of the economic crisis in Russia - companies are being transformed, sold, merged. Credit conditions and terms are tightened by financial institutions, insurers are more focused on risk analyzes and insurance fraud disclosure and investors acquiring securities are more cautious. Owners attaches more importance to managers' financial reports. As can be seen from these facts, there are a lot of reason for the business valuation.

The company value is determined in the following cases:
- purchasing or selling the whole business or its part,
- accessing to the stock markets,
- determining the company's securities value in the case of their purchase and sale in the stock market and various kinds of operations with them,
- restructuring the company (liquidation, merger, acquisition, divestiture, etc.),
- improving management efficiency,
- determining company's solvency and the collateral value,
- insuring assets and business risks,
- crisis management, bankruptcy,

• implementing an investment project for business development[8].

When company is being purchased or sold or it is being restructured, the business valuation is required to avoid disputes over the company value or its assets, considering its profitability in the short term and long term. Independent evaluation can be useful in the case of share capital formation. Since the valuer's activities are regulated by law, the evaluation report has legal force and the business valuation results may be used in court in the event of any property disputes (for example: concerning the share capital). The independent evaluation is necessary for financial management. The business valuation is especially effective in case of getting loans. The evaluation report is a necessary document for obtaining secured loans. If the object of the purchase, sale, lending, insurance, leasing is the part of the company's property, then necessary object, for example, real estate, machinery and equipment, intangible assets, is evaluated separately. The approximate classification of business valuation purposes is presented in the Table 1.

Table 1 Approximate classification of business valuation purposes[9]

Interested party	Valuation purposes
Company like legal entity	Developing business plans Issuing shares Evaluating management efficiency Providing economic security
Owner	Choosing the option how to dispose of own property Substantiating the company (or its assets) purchasing or selling prices Determining the amount of proceeds in the case of company liquidation
Bank	Verifying company solvency Determining loan size
Insurance companies	Determining insurance fee and insurance payments
Stock exchange	Verifying quotations of securities
Investors	Checking the feasibility of investment Determining the acceptable purchasing price
Public Authorities	Preparing company for privatization Evaluating company in the case of litigation Determining tax base

Thus, the reliability of the business valuation largely depend on how correctly the valuation purpose is defined: purchase and sale, obtaining a loan, insurance, taxation, etc. In this case, the same object, evaluated at the same time, will have different values because of different valuation purposes, chosen valuation methods, which depend on interested parties.

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[8] Shcherbakov, V.A., Shcherbakova N.A. *Business valuation*. Moscow: Omega L, 2006. ISBN 5-365-00213-X. pp. 23-24
[9] Processed by Esipov, E., Mahovikova G.A., Terehova V.V. *Business valuation*. 2. edition. SPb: Piter, 2006. ISBN 5-469-01014-7. p.19

Also, there is one important premise in the business valuation, such as going concern value, which is „the value of a commercial enterprise's assets or of the enterprise itself as an active business with future earning power as opposed to the liquidation value of the business or of the assets. It is often assumed, that a company will continue functioning as it had been during and after the valuation."[10]

2 VALUATION APPROACHES

Most professionals agree on the existence of three approaches to determine the business value:

- market approach is based on the comparison of the valuation company with similar companies in respect of which there is information on their purchase and sell price,
- asset approach is based on determining the costs which are necessary to restore or replace the object of valuation with its depreciation,
- income approach assumes determining the expected income which are generated by the object of valuation[11].

It should be said that these three approaches had not been developing immediately. It is possible to note a certain evolution of the valuation approaches' formation. First, only one business valuation approach was used – asset approach. It was being widely disseminated in the 50's and 60's of the last century. Later, during a period of intense mergers and acquisitions, market approach was most often used. It was focused on the using of various multipliers. These multipliers represented the ratio of the company value and its economic characteristics -sales, assets, different types of income. This approach was most widely used in the late 1970s. Market approach was also used to justify investment decisions. In the early 80s of the 20th century, the most significant changes in the practice of business valuation in the United States, Great Britain, and other developed countries were associated with the active introduction of the income approach and the discounted cash flow method. The real incentive to expand the methods based on the DCF was the phenomenon of „creating stakeholder value". For almost forty years now, professional communities of investment specialists and companies have been focusing their attention on the income approach.

The business valuation is carried out using the three approaches described above, each of which allows to emphasize certain characteristics of evaluated object. Choosing approaches and methods applied by the valuer depends on the features of the

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[10]   Fishman, E. Jay, Shannon P. Pratt, Morrison J. William. Standards of value. Theory and Applications. 2nd ed. John Wiley & Sons, 2013. ISBN 978-1-118-22540-0. p.28

[11]   Rutgaizer, V.M. Business valuation. Moscow: Maroseika, 2007. ISBN 978-5-903271-02-3. p.109

valuation process, the economic characteristics of the valuated object, the valuation purposes. In practice, the results of each approaches can be quite different. What are the reasons? First, markets are imperfect, supply and demand are not in equilibrium; secondly, potential users may be misinformed, producers may be ineffective, etc.

2.1 Asset approach

The asset approach is based on determining the market value of assets and current value of liabilities. The application of the asset approach in business valuation is the most reasonable in the following cases:

- valuation of a controlling interest, when company possesses significant material assets,
- valuation of new business, when there are no retrospective profit data,
- valuation of business when there are difficulties with a reasonable forecasting of the future income or cash flows,
- lack of market information about analogical companies,
- company liquidation (liquidation value method).

If the company is in the mode of abridged reproduction or in relation to it, a procedure of supervision or external management is carried out, then the determining value of the operating business can be difficult, since the company is unprofitable. So, it is almost impossible to apply the income approach. In the absence of analogical companies, it is impossible to apply the market approach. Thus, at the disposal of the appraiser there is basically the asset approach.

The basic formula of the asset approach is as follows:

Company value = Assets - Liabilities.

The asset approach is mainly realized by two methods: net assets and liquidation value.

2.1.1 Net asset method

The net assets method is based on adjusting the company's balance sheet, as the book value of assets and liabilities rarely corresponds to their market value. The balance sheet adjustment is carried out in several stages:

- the fair market value of each asset in the balance sheet is determined,
- the current value of the company's liabilities is determined,
- the estimated value of the company's equity is calculated as the difference between the fair market value of assets and the current value of all liabilities.

The net assets method is an indirect method of determining the company value. The company calculated by this does not always objectively reflect its actual value, but

because of the lack of market information, this method is one of the basic methods for determining the company value in Russia.

2.1.2 Liquidation value method

The method of liquidation value is based on the determining difference between the proceeds, from liquidation and the separate sale of company assets on the market, and the liquidation costs. When appraiser determines the company liquidation value, it is necessary to consider all costs associated with the liquidation of company: commission and administrative costs for maintaining the enterprise until its liquidation, and expenses for legal and accounting services. The liquidation value is estimated in the following cases:

- the business is unprofitable, and the company liquidation value may be higher than value of operating company,
- decision has been made on company liquidation,
- company is in bankruptcy proceeding.

The stages of business valuation for determining the liquidation value are as follows:

- development the assets sales schedule (time for the sale of assets: real estate, machinery and equipment),
- calculation of the fair market value of assets,
- calculation of liquidation costs:
    - o direct liquidation costs (commission to appraisal and law firms, taxes and fees which are paid when assets are being sold),
    - o costs associated with owning assets, including the costs for preserving goods and unfinished production, equipment, machinery, real estate, and management costs for maintaining the company until its liquidation is completed;
- the adjusted value of the estimated assets is discounted to the valuation date, considering their sales schedule and the risk associated with this sale,
- the operating profit (loss) of the liquidation period is added (or subtracted),
- calculation of company's liabilities (severance payments and other payments to employees, creditors' claims on collateralized obligations, tax and penalty payments to the state budget and off-budget funds, etc.),
- determination of company liquidation value (company's liabilities and the liquidation costs are deducted from the adjusted fair market value of assets).[12]

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[12]   Shcherbakov, V.A., Shcherbakova N.A. *Business valuation*. Moscow: Omega L, 2006. ISBN 5-365-00213-X. p.151

2.2 Market approach

The business valuation by market approach is based on the comparative principle. Market approach assumes that the value of assets is determined by how much they can be sold in financial market which is sufficiently formed. In other words, the most expected company value can be the real selling price of a similar company, fixed by the market. In the market approach, two methods are distinguished:

- public company method,
- company transactions method.

2.2.1 Public company method

Public company method is based on the public company's real prices of shares on the stock market. The basis for comparison is the single share price of the joint-stock company. This method is used for valuation of minority interests and is applicable only to public companies. Data on comparable companies using appropriate adjustments can serve as benchmarks for determining the company value. The advantage of this method is the using of factual data, rather than forecast data that has a certain uncertainty. Public company method requires reliable and detailed financial and market information on comparable companies.

2.2.2 Company transaction method

Company transaction method is based on data on controlling interests' sales or on the whole company sale (acquisitions or mergers). The method is applied when controlling interests of public company is being purchased. Also, this method is used for estimating value of private limited companies that operate on the same market segment as the public ones, and have similar financial indicators. The method includes multipliers analysis.

Selection of comparable companies plays important role for the correct business valuation by transaction method. The ideal company-analogue operates in the same industry as the company being evaluated, conducts similar business operations, has a comparable product and the similar size. Also, company-analogue is influenced by identical economic factors as the company being evaluated. Searching for similar enterprises should be based on sufficiently stringent selection criteria, the most important of which are:

- the identity of the industry and products,
- comparability by size, consumer networks, product diversification, business maturity, development strategies,
- comparability of financial characteristics,
- geographical proximity.

Multipliers are applied to clarify the results obtained during estimating company's value by comparison with similar companies. Multiplier is the ratio of price to chosen financial indicator. In terms of capital structure, the numerator can be expressed by one of the following two indicators:

- Equity value, which is represented in the stock market in the form of company market capitalization,
- Total invested capital value (EV - Enterprise Value), which represents the amount of the company's market capitalization (MC) and the market value of its long-term debt.

According to James Hitchner, the most appropriate and prevalent multipliers for business valuation are:

- Market value of invested capital/EBIT,
- Market value of invested capital/EBITDA[13]

2.3 Income approach

Income approach is considered the most acceptable from the point of view of investment. Any investor, investing money in an operating enterprise, ultimately purchases not a set of assets consisting of buildings, constructions, machinery, equipment, intangible values, etc., but the flow of future income, which allows him to recoup the investment, get profit and improve his welfare. From this point of view, all companies, no matter what industry they belong to, produce only one type of product - money.

Income approach is a set of methods for estimating the company value, based on the determination of the expected income. This approach does not imply the simple summation of assets' market values, since it does not represent the real company value. Income approach considers the assets interaction, the business economic environment. This approach is applicable when it is necessary to make the financial decision, to develop the feasibility study of investment, to justify decisions on the purchase or sale of the company. The results of the income approach allow business owners to identify problems that hamper business development; make decisions aimed at increasing revenue. Methods of income approach are based on determining the present value of future income. The main methods are:

- capitalization cash flow method,
- discounted cash flow method.

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[13]   Hitchner, James. Financial Valuation. Applications and Models. New Jersey: John Wiley&Sons, Inc. 2006. ISBN 978-5-90327-06-1. p.172

Also, there is income approach method which is based on Economic Value Added concept in the modern literature.

2.3.1 Capitalization Cash Flow method

The method is used for estimating the value of „mature" companies which are stable, have a certain profitable business history and accumulated assets. In comparison with the discounted cash flow method, the capitalization method is simpler, since it does not require the medium- and long-term earnings forecasting. However, this method assumes that company which is being evaluated has stable income, operates on the stable market and no significant changes are expected.

Capitalization cash flow method considers capitalization of income for the first forecast year, if the amount of income will be the same in subsequent forecast years. The method is realized through capitalization of the future normalized cash flow or capitalization of future average profit. The method is used if the company income is stable. If it is assumed that future earnings will change over the years during forecast period, the discounted cash flow method is more applicable. To estimate the company value by capitalization method, it is necessary to determine capitalization rate. Often the capitalization rate is based on the discount rate. The capitalized income (cash flow or profit) growth rate is subtracted from the discount rate. If the growth rate is assumed to be zero, the capitalization rate will be equal to the discount rate.[14]
The company value is determined with the following formula:
<center>Value = Income: The capitalization rate.</center>

In business valuation, the capitalization cash flow method is used quite rarely due to significant fluctuations in the magnitude of profits or cash flows over the years which is typical for most companies being evaluated.

2.3.2 Discounted Cash Flow Method

The discounted cash flow method assumes that the company value is the current worth of a future amount of cash flows. The basic DCF formula is as follows:

$$PV = \sum_{t=1}^{n} \frac{FCFt}{(1+DR)t} + \frac{FV}{(1+DR)t}$$

Where,
PV is the present value,
FCF is the free cash flow for certain year,
DR is the discount rate,

[14] Hitchner, James. Financial Valuation. Applications and Models. New Jersey: John Wiley&Sons, Inc. 2006. ISBN 978-5-90327-06-1. p.69

FV is the future value or terminal value,
n is the year.

The application of this method is most justified for evaluating company with unstable cash flows. The most accurate results are obtained when company which is being evaluated has a certain history of economic activity (preferably profitable) and is at the stage of growth or stable economic development. It is assumed that the potential investor will not pay for this business an amount greater than the current value of future profits from this business, and the owner will not sell his business at a price that is below the present value of the future revenues. As a result of interaction, the parties will come to an agreement on the market price equal to the present value of future revenues. The main stages of business valuation for determining the company value by DCF method are as follows:

- choosing the cash flow model,
- determining the forecast period duration,
- calculating cash flow for each year of the forecast period,
- determining the discount rate,
- calculating the company value beyond the forecast period (terminal value),
- calculating current value of the future cash flows and terminal value,
- making final adjustments.

2.3.2.1 Cash flow models

There are two cash flow models which are applied in business valuation theory:

- cash flow to equity,
- cash flow to firm.

Free cash flow to equity (FCFE) is the amount of cash flow which is expected to be paid to shareholders after all the operating and financial costs of the company have been met. FCFE formula is:

$$FCFE = NI + D\&A - Capex - \Delta WC + Net\ borrowing$$

Where:
NI is company's net income,
D&A is the depreciation and amortization,
Capex is capital expenditure,
ΔWC is the changes in working capital.
Net borrowings are the difference between debt issued and debt repaid.
Free cash flow to the firm (FCFF) is the amount of cash flow which is available to all the investors (shareholders, creditors, bondholders). FCFF formula is:

$$FCFF = NI + D\&A - Capex - \Delta WC$$

2.3.2.2 Forecast period

The length of forecast period depends on management's development plans for the coming years, the dynamics of revenues, cost, profit, prices, trends in demand, production and sales. Due to the complexity of forecasting in the estimating value of Russian companies, the forecast period is usually developed for three or five years. If there are no objective reasons for the company's liquidation, it is assumed that it can exist indefinitely. It is almost impossible to forecast company's cash flow for decades or more. So, the period of further company's existence is divided into two parts:

- the forecast period, for which the appraiser accurately predicts the future cash flows,
- beyond forecast period. In this period, the appraiser calculates the average growth rate of the company's cash flows.

If in the first years of the forecast period the dynamics of cash flows will be very different from the average, the company's value can be highly distorted.

2.3.2.3 Discount rate

Depending on the chosen model of cash flow, various methods are used to determine the discount rate, the most common of which are the following:

- for FCFE – the capital assets pricing model, the build-up method,
- for FCFF - the weighted average cost of capital.

The CAPM model and the build-up method assume that the investor is ready to take risks only if it promises additional benefit in comparison with risk-free investments. The build-up method considers the risk-free rate as a starting point, and then the appraiser adds the different risk premiums. The build-up model is more applicable for valuing private businesses, since such businesses may need some adjustments, which is easily done through adding risk premiums by the build-up model. The method considers all types of investment risks, related to both economic factors and company's specifications. The formula of the build-up method is as follows:

Discount rate = Risk-free rate + other risk premiums

The other risk premiums are shown in the Table 2.

Table 2 Risk premiums[15]

Risk premiums	Range of values
Quality of management	0-5
Company size	0-5
Capital structure	0-5
Product and territorial diversification	0-5
Customer diversification	0-5
Profitability	0-5

In world practice, the long-term government obligations are usually used as the risk-free rate. It is considered that the government is the most reliable guarantor for its obligations, the probability of its bankruptcy is practically excluded[16]. In Russia, the rate of return of Eurobonds with 10 years maturity are used as the risk-free rate. As mentioned earlier, the build-up method is often used in determining the discount rate for private and small companies. However, its popularity does not mean that it is the most preferred method. The method based on information about comparable companies (CAPM) should be used instead of the build-up method whenever reliable data for the calculation can be found. CAPM formula for determining the discount rate is as follows:

$$\text{Discount rate} = R_f + \beta (R_m - R_f) + S1 + S2$$

Where:
R_f is the risk-free rate,
β is the beta or the systematic risk,
$R_m - R_f$ is the market premium,
S1 is the risk premium for company size,
S2 is the other risk premiums.
However, the classic CAPM model does not assume the additional risk premiums. Thus, it can be said, that the formula, presented above, is a „mix'' of build-up and classic CAPM models.

Beta is a systematic risk indicator that reflects the dependence of stock's return fluctuations on the market return. In other words, the beta measures the stock's relative risk. If $\beta > 1$, it means that the company's shares are more sensitive to systematic risk than the stock market on average and, therefore, it is riskier to invest in this enterprise

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[15]   Processed by Kamnev, I., Zhulina A. Methods of justifying the discount rates. *Accounting and Finance problems [online]*. June, 2012, 2(6), p.32 [10th April 2018]. ISSN 330.222.011. Available at: http://sun.tsu.ru/mminfo/2011/000407041/06/image/06-030.pdf

[16]   Damodaran, Aswath. Investment valuation. Tools and Techniques for Determining the Value of Any Assets. 2nd ed. John Wiley & Sons, 2002. ISBN 0-471-41490-3. p.202

than to the average enterprise, operating on the market. If β<1, then the company's share price less depends on general market factors, and therefore, the investing in this company is less risky. The beta is calculated through historical data analysis by the investment and consulting companies and is published in financial reference books and periodicals, analyzing stock markets. To calculate the value of the beta for private held company, Hamada formula is used.

$$\beta_{leveraged} = \beta_{unleveraged} \cdot (1 + (1 - t)\frac{D}{E})$$

Where:
$\beta_{leveraged}$ is the company's beta with debts,
$\beta_{unleveraged}$ is the company's beta without debts,
t is the tax rate,
D is the equity,
E is the company's debts.
Thus, the beta calculated by Hamada formula includes not only systematic risk, but also unsystematic risk (financial risk).

The market premium is the difference between the yield of the average market portfolio and the risk-free rate. Thus, it is compensation for the additional risk associated with investing in market assets, such as shares or short-term deposits. Data on the market premium values is available on public sources, as well as data on beta (for example, on the site damodaran.com)[17].

For the FCFF, the discount rate is defined as the weighted average cost of capital (WACC). WACC model determines the discount rate by summing the weighted cost of equity and cost of debts, where the shares of debts and equity are used as weights.

$$WACC = r_e \cdot E/C + r_d \cdot (1-t) \cdot D/C$$

Where:
r_e cost of equity,
r_d is cost of debts,
E is the equity,
D is debts,
t is the tax rate.
The cost of debts is the interest rate of the bank on loans and it can be calculated as the proportion of interest payments and the amount of bank loans. The cost of equity is calculated by the CAPM model or the build-up model mentioned earlier.

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[17]   Damodaran, Aswath. Investment valuation. Tools and Techniques for Determining the Value of Any Assets. 2nd ed. John Wiley & Sons, 2002. ISBN 0-471-41490-3. P.207

2.3.2.4 Terminal value

In case of effective management, the enterprise can operate infinitely. Forecasting for several decades or hundreds of years in advance is inexpedient, since the longer the forecast period is, the lower the forecast accuracy is. To consider the future cash flow beyond forecast period, terminal value is determined. The main way to determine the terminal value is to apply the Gordon growth model. Calculations are carried out according to the following formula:

$$\text{Terminal value in N-year} = \frac{\textbf{FCF(N+1)}}{\textbf{(DR – g)}}$$

Where:
$FCF_{(N+1)}$ is the free cash flow for the first year beyond the forecast period, $FCF_{(N+1)} = FCF_n * (1+g)$
DR is the discount rate,
g is the growth rate (in perpetuity).
Then, the terminal value should be discounted in the following way:

$$\text{Present terminal value} = \frac{\textbf{Terminal value in N–year}}{\textbf{(DR + 1)N}}$$

The Gordon growth model assumes that income growth rate does not exceed 3-5%, since large growth rates are impossible without additional capital investments, which this model does not consider. In addition, the constant high growth rate for an indefinitely long period of time is hardly realistic. According to Alan Gregory, the growth rate (in perpetuity) does not differ significantly from the GDP growth rate[18].

2.3.2.5 Final adjustment

After determining the present value of cash flows, sometimes it is necessary to make final adjustment, such as adjustment to long-term debt (when FCFF was being calculated). The adjustment is made when FCFF was being used for estimating company's value. The value of the long-term debt is subtracted from the gross value which was being calculated by FCFF model. Obtained company's value without debts is called equity value or net value.

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[18]   Gregory, Alan. Strategic Valuation of Companies. 2nd ed. Prentice Hall, 2001. ISBN 0-273-65331-8. p.121

2.3.3 Economic Value Added

According to EVA method, the company's value is an amount of invested capital and the present value of economic profit for forecast period. „EVA is a measure of economic profit. It estimates operation's true profitability"[19] The basic EVA formula is:

$$EVA = NOPAT - NOA * WACC,$$

Where:
NOPAT is the net operating profit after taxes or EBIT * (1-t), where t is the taxes,
NOA is the net operating assets,
WACC is the weighted average cost of capital.
According to Brigham, the Net operating assets or operating capital is the sum of net operating working capital (NOWC) and operating long-term assets, such as plant and equipment. NOWC is operating current assets minus operating current liabilities. The operating current assets are the current assets, which does not include short-term investments. The operating current liabilities are the current liabilities, which does not include short-term debts[20].

The advantage of the EVA method over the DCF method is that the economic profit is a very convenient and clear indicator of the company's performance for each year. For example, the comparison of actual and forecast cash flows does not provide a clear picture of the company's progress, since the amount of free cash flow is determined by very arbitrary investments in fixed assets and working capital. The management of the company can easily improve the free cash flow indicator, postponing the investment for a while. This negatively affects the company's value in the long term.
The formula for determining company's value by the EVA method is:

$$\text{Value} = \Sigma \frac{EVAt}{(1+WACC)^t} + \frac{EVAt+1}{WACC-g} * \frac{1}{(1+WACC)^T} + NOA_0$$

The calculation of company's value by the EVA method is similar to the calculation by the DCF method, but instead of the cash flows, the economic profit is used. First, the current value of future economic profits is determined. Then, the present terminal value is calculated and is added to the results. Also, it is necessary to make some adjustments to working capital and to long term debt.

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[19]   Shim, Jae K. and Siegel Joel G. Financial Management. 3rd ed. Barron's Educational Series, 2008/ ISBN-13: 978-0-7641-3940-6. p.105
[20]   Brigham, F. Eugene and Ehrhardt C. Michael. Financial Management: Theory & Practice. 13th ed. South-Western College Pub, 2010. ISBN-13: 978-1439078099. pp.1101-1102

3 EVALUATION PROCESS

A business valuation process is a sequence of steps performed by appraiser to determine the company's value. In accordance with the Resolution of the Government of the Russian Federation "On Approval of Evaluation Standards", the business valuation is conducted in several stages:

- concluding an agreement for professional valuation (between appraiser and client),
- determining quantitative and qualitative characteristics of the object being evaluated (financial analysis),
- analyzing the market on which the company has been operating (strategic analysis),
- choosing the valuation method and making the necessary calculations,
- summarizing the obtained results and determining the final company's value,
- making evaluation report and presenting to the client.

The determining the company being evaluated				
Description	Valuation date	Valuation purpose	Chosen valuation standard	Limiting factors

Appraisal agreement

Data collection	
External data	Internal data

Financial analysis	
Financial statement analysis	Financial ratios analysis

Choosing the valuation approache and its method		
Asset	Market	Income

Calculation of company's value

Making evaluation report

Picture 1 Stage of evaluation process[21]

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[21]   Processed by Shcherbakov, V.A., Shcherbakova N.A. *Business valuation*. Moscow: Omega L, 2006. ISBN 5-365-00213-X. P.59

In this Chapter, strategic and financial analysis will be considered in more detail. Approaches to evaluation were discussed in Chapter 2.

3.1 Strategic analysis

The company does not exist in a vacuum. It is affected by economic conditions, industry development trends and other external factors. Similarly, the estimating the company's value is based not only on the analysis of financial documentation. The appraiser should consider the relevant economic, industry and market conditions. The value of the company is ultimately determined by whether the company (and for how long) is able to make a profit that surplus covers the alternative costs of financing. To do this, the company must have a competitive advantage and be able to use it. For lack of such advantages, all companies in the industry, under the pressure of competition, are able to earn only as much as enough to recover capital costs (or even less).

For determining company's advantages and collecting and processing relevant information, the strategic analysis tools are applied. Strategic analysis is extremely important for the business valuation, since a financial forecast is based on the results of this analysis[22] Generally, strategic analysis may be divided into external environment analysis and internal environment analysis.

The external environment analysis deals with factors of company's environment that affect its strategic position and create potential opportunities and threats to its activity. This analysis focuses on the influences of individual factors of macro and micro environment[23]. To determine the factors of macro environmental, PEST analysis may be used. PEST analysis identifies the political, economic, social and technological aspects of the macro external environment that affect the company. The micro environment analysis involves an industry analysis which emphasizes the competitive environment. The aim of this analysis is to identify the forces and factors that make the industry attractive. The important part of the micro environment analysis is a competitive analysis. Business can operate in attractive industry, but still it might get into serious difficulties, caused by company's competitors.

The internal environment analysis identifies the company's resources and capabilities that an enterprise must have to be able to deal with to the threats and the opportunities arising continuously around it. The analysis of resources and capabilities is therefore a very fundamental starting point, it is oriented on the different types of resources

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[22]   Copeland, Tom, Tim Koller and Jack Murrin. Valuation: Measuring & Managing the value of companies. McKinsey & Company, 2000. ISBN 5-901028-98-8. p.266
[23]   SEDLÁČKOVÁ, Helena a Karel BUCHTA. Strategická analýza. 2. přeprac. a dopl. vyd. Praha: C.H. Beck, 2006. ISBN 80-7179-367-1. p.10

and on the ability to use these resources. The internal environment analysis assumes that the company's specific assets is a basis for a competitive advantage. The internal environment analysis's basic method is the SWOT analysis.

3.2 Financial analysis

The financial analysis of the enterprise being evaluated is carried out on the basis of the balance sheet and the income statement. The main objective of the financial analysis is to determine the business's actual financial condition to the valuation date. Financial condition is the company's ability to finance its activities. It is characterized by solvency and financial stability, justified allocation of resources, financial relationships with business partners.
The financial analysis includes two stages:

- financial statements analysis;
- financial ratio analysis.

3.2.1 Financial statement analysis

In the process of company's operating, the size of assets and their structure constantly change. To identify qualitative changes in the structure of funds and their sources, as well as the dynamics of these changes, vertical and horizontal analysis is carried out. The vertical analysis is the analysis of certain line items of the balance sheet and income statement. It shows the structure of company's assets and liabilities with capital. The vertical analysis of company's assets represents the share of fixed assets, intangible assets, inventories, receivables and other types of property in the total assets. Having determined the share of each indicator in the total result, the appraiser can compare the company with other, which is impossible if you operate with absolute values. The vertical analysis of liabilities and equity pays attention to the consideration of the ratio of equity and liabilities, as well as the maturity structure of liabilities. As for the income statement, the vertical analysis is used to identify the structure of expenses and income, to determine the share of net profit in sales.

The horizontal analysis is the analysis of financial statement over a certain period of time. Any time intervals can be taken as periods, but usually quarterly analysis or annual analysis of the financial statement are considered. The horizontal analysis may consider the calculation of item's changes in both absolute and relative values. Appraiser uses this analysis to determine a company's growth over time. Also, the horizontal analysis allows to compare the company's growth in relation to its competitors.

3.2.2 Financial ratio analysis

The financial ratio analysis is an essential part of the financial analysis. The ratios analysis includes two basic types of comparisons. First, appraiser can compare the actual

ratios with forecast ratios. Second, this analysis allows to compare company with industry average ratios or with its competitors' ratios. Such comparison identifies any significant deviation from any comparable average industry value (normative). There are a lot of financial ratios, but appraiser chooses the most important ones considering the business valuation purposes. For adequate comparison, the same calculation ratio methodology must be used. Usually, in the financial analysis the following ratios are used:

- Liquidity ratios,
- Debt ratios,
- Operating performance ratios,
- Profitability ratios.

3.2.2.1 Liquidity ratios

The liquidity ratios are used to measure the company's ability to pay its short-term liabilities with its current assets. These ratios express solvency of the company[24]. There are three commonly used liquidity ratios: current ratio, quick ratio and cash ratio. Their formulas are as follows:

- Current ratio $= \dfrac{Current\ assets}{Current\ liabilities}$
- Quick ratio $= \dfrac{Current\ assets - Inventories}{Current\ liabilities}$
- Cash ratio $= \dfrac{Cash + short-term\ investments}{Current\ liabilities}$

The most accurate estimation of liquidity is given by the cash ratio, since the ratio refers to the most liquid elements of current assets - cash, easily traded securities. It means, that company can meet its liabilities immediately.

3.2.2.2 Debt ratios

According to Brigham, „the extent to which a company uses debt financing has three important implications: By raising funds through debt, stockholders can maintain control of a firm without increasing their investments. If the company earns more on investments financed with borrowed funds than it pays in interest, then its shareholders' returns are magnified, but their risks are also magnified"[25]. Creditors look to the equity to provide a margin of safety. So, the higher the proportion of funding supplied by stockholders, the less risk creditors face. The following ratios examine leverage from a creditor's point of view:

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[24]   Van Horne, James C. and Wachowicz, John M. *Fundamentals of Financial Management.* 12 ed. Prentice Hall, 2004. ISBN 0-2736-8598-8. p.253

[25]   Brigham, F. Eugene and Ehrhardt C. Michael. *Financial Management: Theory & Practice*. 13th ed. South-Western College Pub, 2010. ISBN-13: 978-1439078099. p.95

- Debt to equity ratio $= \dfrac{Total\ liabilities}{Equity}$
- Debt to total assets ratio $= \dfrac{Total\ liabilities}{Total\ assets}$
- Long-term debt to total capitalization $= \dfrac{Long\ term\ debt}{Long\ term\ debt+Equity}$
- Interest coverage ratio $= \dfrac{EBIT}{Interest\ expenses}$

Thus, based on the words of Brigham, „creditors prefer low value of debt ratios, as it reduces their risks. At the same time, shareholders prefer higher debt ratios, since it magnifies their return'[26]'. In other words, on the one hand, the high value of debt ratios threatens the company's financial stability, and on the other hand it contributes to the growth of return. Based on this, the company should find an adequate balance between its equity and liabilities. The most common opinion is that the share of equity should be large enough. The lower limit of this indicator is 0.6 (or 60%). However, the company's capital structure depends on the industry, in which the company has been operating, as well as on the borrowed funds' availability. For example, small and medium-sized businesses in Russia prefer to finance assets using own funds.

3.2.2.3 Operating performance ratios

Operating performance ratios measure how effectively a company is managing its assets and current liabilities. For example, if a company has excessive investments in assets, then its operating capital will be unduly high, which will reduce its free cash flow; excessive liabilities can threaten company's financial stability. Ratios that analyze the different types of assets and current liabilities are as follows:

- Asset turnover $= \dfrac{Sales}{Assets}$
- Inventory turnover $= \dfrac{Sales}{Inventory}$
- Receivable turnover $= \dfrac{Sales}{Receivable}$
- Payable turnover $= \dfrac{Sales}{Payable}$

For more thorough analysis, these turnover ratios can be converted to the turnover ratios in days.

- Inventory turnover in days (days inventory outstanding) $= \dfrac{Sales}{Inventory} \cdot 360$
- Receivable turnover in days (average collection period) $= \dfrac{Sales}{Receivable} \cdot 360$
- Payable turnover in days (payables deferral period) $= \dfrac{Sales}{Payable} \cdot 360$

The turnover ratios in days are used for determining company's cash conversion cycle. The cash conversion cycle (CCC) is a period of time between the actual payment for the

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[26]   Brigham, F. Eugene and Ehrhardt C. Michael. *Financial Management: Theory & Practice*. 13th ed. South-Western College Pub, 2010. ISBN-13: 978-1439078099. p.95

purchase of raw materials required by the firm, and the receipt of cash for the products and goods sold[27]. The formula is as follows:

CCC = Inventory turnover + Receivable turnover - Payable turnover (in days)

3.2.2.4 Profitability ratios

„Profitability is the net result of a number of policies and decisions. The ratios examined thus far provide useful clues as to the effectiveness of a firm's operations, but the profitability ratios go on to show the combined effects of liquidity, asset management, and debt to operating results"[28]. It is possible to distinguish two types of profitability ratios - the ratio of profits and sales and the ratio of profits and investments in assets. The most commonly used profitability ratios are:

- Return on Assets $= \frac{EBIT}{Total\ assets}$
- Return on Equity $= \frac{EAT}{Equity}$
- Return on Sales $= \frac{EAT}{Sales}$
- Return on Capital Employed $= \frac{EBIT}{Equity + Long-term\ liabilities}$

3.2.3 Working capital analysis

There are two basic concepts of working capital - net working capital and gross working capital. Working capital refers to current assets used in operations. Net working capital is defined as current assets minus all current liabilities[29]. Concept of net operating working capital has been distinguished (NOWC). „NOWC is equal to cash required in operations, accounts receivable, and inventories, less accounts payable and accruals"[30]. Short-term investments not used in operations, so they are typically excluded when NOWC is calculated. The company itself determines how much of its cash is required for operations, but all the cash of most company is used in operations. For working capital analysis, the following ratios are used:

- Net working capital to total assets = NWC / Total assets
- Net working capital to sales = NWC / Sales

The first ratio shows the NWC's percentage in total assets. Excessively high percentage of NWC can easily reduce the equity's return. However, companies with too small NWC

[27]   Van Horne, James C. and Wachowicz, John M. Fundamentals of Financial Management. 12 ed. Prentice Hall, 2004. ISBN 0-2736-8598-8. p.260

[28]   Brigham, F. Eugene and Ehrhardt C. Michael. Financial Management: Theory & Practice. 13th ed. South-Western College Pub, 2010. ISBN-13: 978-1439078099. p.98

[29]   Van Horne, James C. and Wachowicz, John M. Fundamentals of Financial Management. 12 ed. Prentice Hall, 2004. ISBN 0-2736-8598-8. p.360

[30]   Brigham, F. Eugene and Daves, R. Phillip. Intermediate Financial Management. 11th ed. South-Western College Pub, 2013. ISBN 13: 978-1-111-53025-9. p. 790

may lack resources and face difficulties with ensuring uninterrupted operation. Within the net working capital analysis, it is necessary to determine the value of NWC needs. For calculation, the cash conversion cycle and average daily costs are used. The CCC formula was presented above. The formula for calculation of the NWC needs is shown below:

$$\text{NWC needs} = \text{Cash conversion cycle} \cdot \frac{Operating\ costs - Amortization}{360}$$

3.2.4 Bankruptcy model

Bankruptcy models provide a comprehensive assessment of the company's financial stability and they are based on the results of financial statement analysis and ratio analysis. The main objective of bankruptcy models is to define company's capability to meet its liabilities. And conclusions of these models are important for creditors. In this chapter, two bankruptcy models will be considered: Altman Z score and Saifullin-Kady-kov models (for Russian market).

3.2.5 Altman Z-score

Altman's bankruptcy model estimates an upcoming bankruptcy with approximately two years in advance, calculating the so-called Z score. This score is a function of some indicators that characterize the business's economic potential and the results of its work over the past period. For developing country, including Russia, the version of the scoring model was called the Emerging Market Scoring (EM Z-score). Altman developed this model in the mid-1990s using data on manufacturers and non-manufacturers from Mexico, Brazil and Argentina. The formula for calculation of EM Z score is as follows:

$$\text{EM Z} = 6.56\ \frac{NWC}{Assets} + 3.26\ \frac{Retained\ earning}{Assets} + 6.72\ \frac{EBIT}{Assets} + 1.05\ \frac{Equity}{Liabilities} + 3.25^{[31]}$$

If EM Z >2.60, then the probability of bankruptcy is insignificant, the company is financially stable. If the value of EM Z is greater than 1.1, but less than 2.6 - the situation is not certain. And if EM Z<1.1, then the situation is critical, with a high probability of bankruptcy in the short term.

3.2.6 Saifuliin-Kadykov model

One of the most famous Russian bankruptcy models is Saifullin – Kadykov model. The model forecasts a possible bankruptcy of an enterprise based on its financial data.

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[31]   Altman, Edward I. *The Use of Credit Scoring Models and the Importance of a Credit Culture* [lecture]. New York: Stern School of Business, 31st December 2003. Available at: http://pages.stern.nyu.edu/~ealtman/3-%20CopCrScoringModels.pdf

Russian economists have tried to adapt the bankruptcy prediction models to the conditions of the domestic economy. Saifullin and Kadykov proposed the following formula:

$$R = 2K1 + 0.1K2 + 0.08K3 + 0.45K4 + K5^{32},$$

Where:
K1 - the working capital financed by equity to current assets ($\frac{Equity - Fixed\ assets}{Current\ assets}$),
K2 - current ratio,
K3- asset turnover ratio,
K4 - return on sales,
K5 - return on equity.
If the value of the final indicator R <1 the probability of bankruptcy is considered high; if R> 1 - low. The disadvantage of this and other simplified bankruptcy models is that such models do not take into account industry specific features and rely solely on the average values of financial ratios.

3.3 Financial plan

The results of the strategic and financial analyzes are used for the preparation of the financial plan. The financial plan is a comprehensive plan for company's development. That is, the main goal of financial planning is to identify the main ways of the company's development and its prospects. However, financial planning for business valuation has different goals. As part of the business valuation, financial planning assumes a simple compilation of forecast financial statements. And, the focus is on items that have a big impact on the company's value. To develop the financial plans, some planning methods are applied. The most commonly used methods are as follows:

- the percentage of revenue method,
- extrapolation of time series data method,
- expert method.

The principle of the percentage of revenue method consists in the linear dependence of the development of certain items on the movement of sales revenue from operating activities. These items represent a constant share of the value of operating revenues and are also included in the financial plan at this level. The Revenue Percentage method is suited to planning most revenue and cost items and asset items. Some items of financial statements do not depend on sales. In this case, the extrapolation of time series data method is preferable. This method allows to analyze past results and

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32   Kolyshkin, A.V., Gilenko E.V., Dovzhenko S.E., Zhilkin S.A., Choe S.E. Forecasting the Financial Insolvency of Enterprises. In: Vestnik SPbSU [online]. February, 2014, 5(2), p. 132. [15 April 2018]. ISSN 338.27. Available at: https://cyberleninka.ru/article/v/prognozirovanie-finansovoy-nesostoyatelnosti-predpriyatiy

to identify a certain trend. For items showing significant volatility without a noticeable trend, it is best to consider the value of the last year or the average value[33]. The value of some items can not be planned directly. Some calculations need to be made to determine them. Depreciation is determined by the value of the fixed assets and the depreciation policy. Interest expense is determined on the basis of the amount and cost of borrowed funds. Retained earnings and equity funds are determined by the past results and dividend policy. The cash item equalizes the excess of liabilities and the remaining asset items [34]. After the financial plan has been developed, a forecast financial analysis is carried out, which should be based on the financial analysis over the past period. The reason is to verify whether the predicted financial ratios correspond to the current ratios.

3.4 Factors of company's value

The factor of company's value is a kind of variable, on which depends the effectiveness of enterprises (for example, production efficiency or satisfaction consumers). According to Copeland, the correct determination of value factors requires to follow three important principles:

- Value factors should be directly tied to the creation of value for shareholders.
- To set target standards and to evaluate performance, value factors should be expressed by both financial and operational indicators
- Value factors should reflect both current activities and long-term growth prospects[35].

Value factors can be divided into three level: strategic factors, financial, factors and operational factors.

[33] Vochozka, Marek a Petr Mulač. Podniková ekonomika. Praha: Grada, 2012. Finanční řízení. ISBN 978-80-247-4372-1. p.139

[34] Mulačová, Věra a Petr MULAČ. Obchodní podnikání ve 21. století. Praha: Grada, 2013. Finanční řízení. ISBN 978-80-247-4780-4. p.175

[35] Copeland, Tom, Tim Koller and Jack Murrin. Valuation: Measuring & Managing the value of companies. McKinsey & Company, Inc; 2000. ISBN 5-901028-98-8. pp.155-156
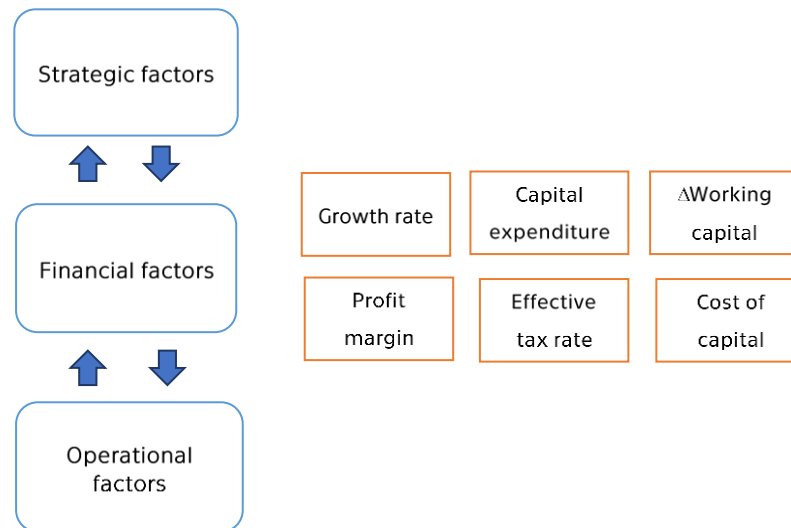
Picture 2 Factors of company's value[36]

The strategic factors reflect company's long-term goals and express the main elements of company's strategic program. These factors are influenced by tasks the company puts on the market. These tasks assume where and how, in which markets and segments it would like to compete.

Operational factors reflect the specific of business model or, in other word, the specific package of measures that the company would like to propose to achieve its strategic goals. These factors are more detailed and are associated with specific products, technologies etc.

Financial value factors are measurable and reflect the interaction of strategic and operational factors. In this paper, the focus will be precisely on these value factors. Financial value factors include factors, which directly impact on volume and dynamics of cash flows, and factors, which determine the discount rate. Growth rate reflects the market prospects, depends on the company price policy. This factor characterizes the dynamics of company viability. It reflects company resource capability and synthesizes its strategic ambitions. Profit margin reflects control over production and non-production costs. to a certain extent, this indicator is specific for a specific industry, it also depends on the strength or weakness of the market position. Capital expenditure reflects intensity of investment programs and fixes the need for additional assets to meet the long-term demand, to ensure sales growth. Changes in net working capital is influenced by company's working capital policy. That is, the factor reflects efficiency of interaction of company's management and debtors and creditors.

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[36]   Processed by Ivashkovskaya, I.V. Factors of company's value [video]. In: *Coursera* [online]. National Research University Highest School of Economics. [vid. 25.04.2018]. Available at: https://ru.coursera.org/learn/osnovy-korporativnykh-finansov/lecture/sOpfY/9-3-faktory-stoimosti-firmy

3.5 Sensitivity analysis

After estimating the company's value, it would be suitable to determine significance of factors of value. Sensitivity analysis is one of the basic tools to identify degree of influence of value factors. The essence of the sensitivity analysis is to determine the sensitivity of the selected criterion (in this case, the company's value) to possible changes in the values of factors, influencing on this criterion. The basic form of sensitivity analysis is a one-factor analysis where the impacts of isolated changes of individual factors on the company's value are determined, when all other factors remain at their expected (planned, most probable) values. Changes in the values of individual factors can be in the following forms:

- pessimistic and optimistic values of these factors,
- deviations of their values in the certain range, for example, from -10% to +10%.[37]

The factors, whose changes only cause minor changes of the company's value, can be considered as insignificant, that is the sensitivity of value to changes in these factors is small. Conversely, the factors, whose changes lead to significant changes in value, will certainly be significant. Sensitivity analysis is used to solve the following tasks:

- Determination of the factors, on the forecast of which it is necessary to pay attention, when evaluating of company is carried out. If the sensitivity to the factor is great, then its forecast should be more accurate and justified. Conversely, if the sensitivity of the factor is low, then it makes no sense to spend a lot of time on its forecast,
- Identification of the prospects for the increasing company's value,
- Evaluation of the management's impact on the company's value.

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[37]   Fotr, Jiří, Lenka Švecová a kolektiv. *Manažerské rozhodování: postupy, metody a nástroje*. vyd. Praha: Ekopress, 2010. ISBN 978-80-86929-59-0, p. 256

PRAKTICKÁ ČÁST

4 COMPANY ANALYSIS

Basic information on Byte-Transit-Continent (BTC) was provided on the web site on date 10.05.2018.[38].

Business legal name: Byte-Transit-Continent LLC
Share capital: 200 037 RUB.
Date of registration: 29.10.2002
Registered office address: Russia, Novosibirsk, Phrunze street, 18/1
Economic activity: freight shipping by trucks and railway,
       warehousing and storage activity,
       renting and management of own
       or leased non-residential real estate/
Shareholders: Shpikelman Alexandr   57,32%
       Gamarnik Lubov   10,67%
       Liphshic Michal   10,67%
       Shustin Alexandr   10,67%
Chief executive officer: Kukushkin Grigoryi

Logo:
Web site: www.sibtrans.ru/

4.1 The company history

LLC "Byte-Transit-Continent" is a transport and logistics company, which operates on the road freight shipping market. It is a part of the Association of Enterprises "BYTE" (Novosibirsk). Since 1991 the primary activity of the enterprise is aimed at the formation of a transport corridor and the organization of freight traffic between the Central and West Siberian regions in both directions, consolidation and transportation of cargos across and beyond Russian Federation. LLC "Byte-Transit-Continent" specializes in cargo transportation by road transport. Also, the company provides freight shipping services by railway transport, sea and air transport.

The company has its own rail and road vehicle fleet with various carrying capacity. In Novosibirsk, the company has its own multifunctional cargo terminals, including a bonded warehouse (for temporary storage of customs cargoes). Multifunctional cargo terminals were set up to ensure uninterrupted freight traffic using road, air and railway

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[38]   *Byte-Transit-Continent* [online]. Catalog of organizations in Russia. [vid. 10.05.2018]. Available at: http://www.list-org.com/company/14697/year/2009

transport in the complex. The enterprise actively participates in the Development Program of the Novosibirsk Multimodal Transport Hub. LLC "Byte-Transit-Continent" has 18 branches in Russia, as well as a branch in Almaty and in Urumqi. In 2017 the company turnover in natural and monetary terms increased by 6,3%. The number of customers has reached 65 000, 20 000 of which use the transport services of LLC "Byte-Transit-Continent" monthly. LLC "Byte-Transit-Continent" currently is the only carrier in the Siberian district, which has won four times the award "For Successful Business Development in Siberia" and has the official status of "RELIABLE PARTNER"[39].

4.2 PEST analysis

The PEST analysis of the company was conducted on the basis of an assessment of selected factors that could affect the company's profit. All factors are divided into political, economic, social and technological. In all, 16 factors were selected. Each factor was described: there are current and forecast data on each factor in this Chapter. Then the influence of each factor was evaluated. The strength of the factor's influence is estimated on a scale of 1-3, where:

1 - the influence of the factor is small, any factor's change has practically no effect on the company's activities,
2 - only a significant factor's change affects the sales and profits of the company,
3 - the influence of the factor is high; any fluctuations cause significant changes in sales and company profits.

Further, the probability of factor's variation in the next year was estimated. The probability of oscillations is estimated on a 5-point scale, where 1 means the minimum probability of changing the environmental factor, and 5 - the maximum probability. The next step is to calculate the real significance of the factor. The real significance allows to assess how much the company should pay attention and control the factor. Factor's significance is calculated as the probability of a factor's variation, multiplied by the impact of this factor on the company's activities. As a result, the most significant factors that could have a direct impact on the company's profit were selected. The results of PEST analysis are shown in the Table 3. The factors' description is presented below.

Table 3. PEST analysis's factors[40]

Factors	Influence	Probability of variation	Factor's significance
POLITICAL FACTORS			

[39]   About Byte-Transit [online]. [vid. 10.05.2018]. Available at: https://www.sibtrans.ru/about/
[40]   Own processed

Corruption level	2	2	0,13
Tax policy (tariffs and benefits)	3	3	0,40
Trade policy	3	3	0,20
Antimonopoly legislation	1	1	0,03
ECONOMIC FACTORS			
Economic growth rates	3	4	0,39
Inflation rate	1	4	0,13
Exchange rate (dollar/ruble)	2	4	0,26
Investments in fixed assets	1	2	0,06
Energy prices	3	3	0,29
Credit sector's development	1	2	0,06
SOCIAL FACTORS			
Consumption level	2	2	0,20
Population growth rate	1	1	0,03
Real disposable income	2	3	0,20
TECHNOLOGICAL FACTORS			
Industry innovation and technological development	3	1	0,10
R & D expenses	2	1	0,07

The external factors with the highest potential influence on the company's activity are presented in Table 4.

Table 4 The most significant factors

Political		Economic	
Factors	Share	Factors	Share
Tax policy (tariffs and benefits)	0,40	Economic growth rates	0,39
Trade policy	0,20	Energy prices	0,29
		Exchange rate (dollar/ruble)	0,26
Social		Technological	
Consumption level	0,20	Industry innovation	0,10
Real disposable income	0,20		

4.2.1 Political

4.2.1.1 Corruption level

One of the features of the Russian freight shipping market is its high level of corruption. In general, the corruption is concentrated on three stages of the transportation process: at the customs, railway and in the port. In addition to damage to the federal

budget, corruption, being a powerful non-market factor in competition, greatly distorts market mechanisms. Most carriers are forced to overcome artificial problems, created, as a rule, by official authorities. Personal ties allow many carriers to offer special services to their customers, such as lower customs payments, carrying the cargo out of turn in the port, getting the rolling stock out of quotas and turn, etc. All this leads to the creation of additional department in transport companies' structure.

As a result, it turns out that it is more profitable to carry the cargo, using "special services", then according to the scheme developed in accordance with the logistics science. As they say, real competitive advantage in the freight shipping market is often determined by the companies' ability to offer customers a higher quality of "special services". Such unfair competition undermines the business of companies that are willing to work openly and honestly.

Thus, companies incur additional corruption costs associated with bribes and so-called "kickbacks" (in the case of kickbacks, the carrier returns a percentage of the payment to the customer, as a reward for using carrier's services). Additional costs increase the freight rates, which can lead to loss of customers and lower profits. To legalize the market, it is expected to tighten weight control on the roads of the Russian Federation, namely the deployment of a dimensional control system: 368 frames will be installed until 2020[41]. A large-scale anti-corruption campaign was launched in Russia in 2008, but its implementation began only in 2013 with the creation of the anti-corruption department in as the part of the presidential administration. To date, despite state efforts to reduce corruption, Russia rank 135s according to corruption perception index[42] The corruption in the country is extremely high and its level remained practically unchanged for several years. Since corruption affects the companies' activities and competition, but not strongly enough, the factor' influence is 2 points; the probability of factor's variation is low and has 2 points.

4.2.1.2 Tax policy

In 2015, the country's leadership introduced the Plato payment system. The Plato system was created to compensate for damage, caused to motorways of federal importance, by vehicles with a maximum permissible weight exceeding 12 tons. According to the decree of the Government of the Russian Federation, since November 15, 2015, the rate was 1,53 rubles. for 1 km. It operated until 15th April 2017, then it has increased to 1,91 rubles[43].

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[41]   Russian freight shipping market in 2018 [online]. [10.05.2018]. Available at: https://groozgo.ru/blog/ryinok-gruzoperevozok-v-2018/

[42]   Corruption Perception Index 2017 [online]. Transparency International. [10.05.2018]. Available at: https://www.transparency.org/news/feature/corruption_perceptions_index_2017

[43]   Rates and conditions [online]. Plato. Charging system. [10.05.2018]. Available at: http://platon.ru/ru/about/procedure-and-conditions/

In addition to Plato's rate, carriers paid transportation tax until June 2016. Then the State Duma of the Russian Federation passed a law that considered tax incentives for owners of heavy duty trucks, registered in the Plato system. From 1st January 2018, excise taxes on petrol of the fifth class and diesel fuel were additionally increased by 50 cents per liter, as a result, the growth of petrol and diesel prices reached 10,7% and 12,7%, respectively[44]. This has led to additional pressure on financial expenses of transport companies. Thus, each carrier pays:

- excise tax on diesel fuel,
- transport tax,
- from 15th of November 2015 - the Plato system payment.

Due to the fact that tax incentives for companies-carriers will last only until 2019, it is expected that changes tax policy will be changed. In addition, from July 2018, Plato payment is expected to increase from 1,9 to 2,15 rubles per km.

4.2.1.3 Trade policy

The sanctions have significantly impacted on the Russian trade policy. The structure and development of the freight shipping market have changed. The key trade trends that determine the development of the market of cargo transportation in Russia in conditions of sanctions are as follows:

- Drop in imports from the EU to Russia and exports from Russia to the EU countries,
- Growth of domestic transportation, especially in the Asian part of Russia (Far Eastern and Siberian Federal Districts),
- Changing the structure and geography of international freight shipping. If the imports from EU countries decreased, then the commodity flow to the countries of the Customs Union and Asia grew. The most demanded directions of cargo transportation were the member countries of the Customs Union - Belarus and Kazakhstan[45].

Due to the sanctions, Russian carriers have been purchasing analogues of Western goods, primarily automobile parts, electrical equipment, which are produced by Chinese manufacturers. In 2018 some legislative changes have been made to simplify international transportations within the Eurasian Economic Union, since the commodity

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[44]   Demchenko, Natalie. Since 1st January, excises on gasoline have risen in Russia. In: *RBC* [online]. [vid. 10.05.2018]. Available at: https://www.rbc.ru/society/01/01/2018/5a4a031c9a7947f34e9aec01

[45]   Bulletin on Current Trends in the Russian Economy. Dynamics of foreign trade. *Analytical Center under the Government of the Russian Federation* [online]. September, 2017, 29. p.3. [vid. 10.05.2018]. Available at: http://ac.gov.ru/files/publication/a/14443.pdf

flow to the countries of the Customs Union and Asia increased. The Customs Code of the Eurasian Economic Union has come into force, which not only unifies the customs legislation of the EAEU member countries, but also greatly simplifies many customs procedures.

At the moment, the international situation is extremely unstable. In March 2018, the EU extended the sanctions for another six months. Will the sanctions continue for the next year, is still unknown? As for cooperation with the EAEU countries, it will remain stable. The trade policy has significant impact on domestic carrier, since it regulates trade relations with other countries and customs legislation. The factor's influence was estimated at 3 points, probability of variation – also, at 3 points.

4.2.1.4 Antimonopoly legislation

The basis of the Russian antimonopoly legislation is Federal Law No. 135-FZ of 26th July 2006 "On Protection of Competition". The law contains restrictions on freedom of entrepreneurial activity and freedom of contract for economic entities that occupy a dominant position in the market. That is, the law allows the formation of enterprises with a monopolistic position, but prohibits the extraction of benefits from this situation.

Today, the Russian railways are the monopoly on the Russian market of cargo transportation, namely in the sphere of rail transportation. Since road networks do not cover the whole territory and have low quality, and air freight shipping is undeveloped, most of the goods are transported by railways that have limited capacity. The sea freight shipping is not always expedient for geographical reasons.
Since the competition in the sphere of railway freight shipping does not exist, Russian railway has corruption opportunities, which allow to manipulate the freight rates.

4.2.2 Economic

4.2.2.1 Economic growth rate

The growth of Russia's real gross domestic product in 2017 was 1,5%, according to Rosstat. At the same time, the Ministry of Economic Development expected GDP growth in the range of 1,4-1,8% in 2017. The volume of GDP in 2017 amounted to 92 trillion rubles. After the imposition of sanctions in 2014, Russia's GDP declined by 2,8%. The GDP's growth is shown on Chart 1.
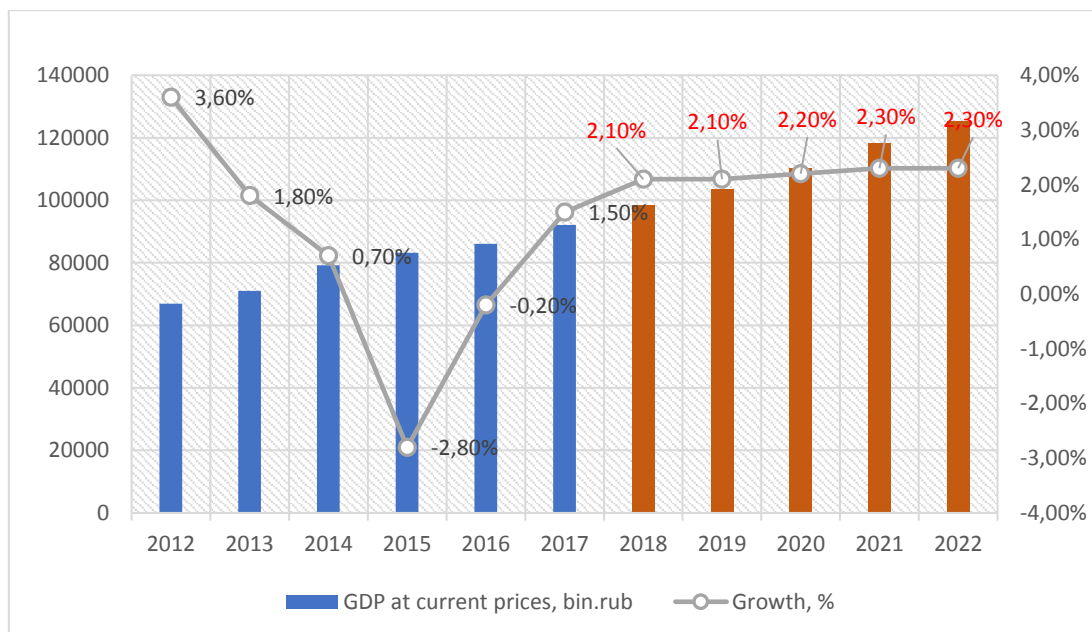
Chart 1. GDP's growth rate for 2012-2022[46]

The main cause of drop in GDP is the low oil prices. During the second half of 2014, oil prices fell more than twofold, from $ 112 per barrel to $ 52, as shown in the chart 3. GDP also reacted with a rapid decline. Since 2017, the stabilization of the economic situation has been expected. The Ministry of Economic Development forecasts GDP's growth at the level of 2% until 2022[47].

The oil price is one of the key factors influencing the development of the Russian economy. In 2017, Russia's economic growth was largely supported by an increase of oil prices due to the OPEC agreement signed in November 2016. In 2018, the prolongation of this agreement has been expected, and then oil prices will stay at about $ 60 per barrel. Experts Bloomberg and EIA assume a price level slightly above $ 55 per barrel due to the increasing production of shale oil in the US.[48]

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[46]   Processed by Forecast of socio-economic development until 2020. Ministry of economic development [online]. 30th August, 2017. p.18. Available at: http://economy.gov.ru/wps/wcm/connect/54b630f2-8bff-4b50-8e28-342199e57eea/170830.pdf?MOD=AJPERES&CACHEID=54b630f2-8bff-4b50-8e28-342199e57eea

[47]   Forecast of long-term social and economic development of the Russian Federation for the period up to 2030. Ministry of economic development [online]. March, 2013. p. 51. [vid. 27.04.2018]. Available at: http://static.government.ru/media/files/41d457592e04b76338b7.pdf

[48]   The price of oil in 2018: will we be over $ 70? In: *RIA* [online]. [vid. 27.04.2018]. Available at: https://ria.ru/ny2018_resume/20180103/1512105092.html

Graph 1 Oil prices 2012-2017, $ per barrel[49]

Since the economic development has significant influence on the freight shipping market and the economic growth is expected, the factor is estimated at 3 points and probability of variation is estimated at 4 points.

4.2.2.2 Inflation rate

In 2017, price growth slowed to 2,5% - a record low in the history of Russia. The previous minimum was reached in 2016, when inflation fell from 12,91% to 5,39%.

Table 5. Inflation rate, %, 2012-2022[50]

Inflation, %	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	6,57	6,47	11,35	12,91	5,39	2,51	5,0	3,5	3,6	4,4	4,4

According to the basic forecast of the Ministry of Economic Development, inflation in 2018 will grow to 5%, and the next 4 years will be at the level of 4%[51]. Inflation indirectly affects the development of the freight shipping market through the price of fuel and investment in the industry. Factor's influence was estimated at 1 points, probability of variation is quite high and was estimated at 4 points.

4.2.2.3 Exchange rate

The exchange rate is one of the items of expenses for international freight shipping. Also, it affects the prices of imported goods: on the freight shipping market, the prices for vehicles spare parts which are mostly produced abroad, are especially critical.

[49]   Processed by Brent Oil Futures. Investing.com [online]. [vid. 22.01.2017]. Available at: https://www.investing.com/commodities/brent-oil-historical-data

[50]   Processed by Consumer Price Index. Federal State Statistics Service [online]. [vid. 10.05.2018]. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/tariffs/

[51]   Forecast of socio-economic development until 2020. Ministry of economic development [online]. 30th August, 2017. p.18. Available at: http://economy.gov.ru/wps/wcm/connect/54b630f2-8bff-4b50-8e28-342199e57eea/170830.pdf?MOD=AJPERES&CACHEID=54b630f2-8bff-4b50-8e28-342199e57eea

As is shown on the Picture 3, for 2014-2015 USD/RUB exchange rate sharply increased from 48,28 to 72,88 RUB for 1 USD. On 10th May 2018 exchange rate is 62 RUB/USD.
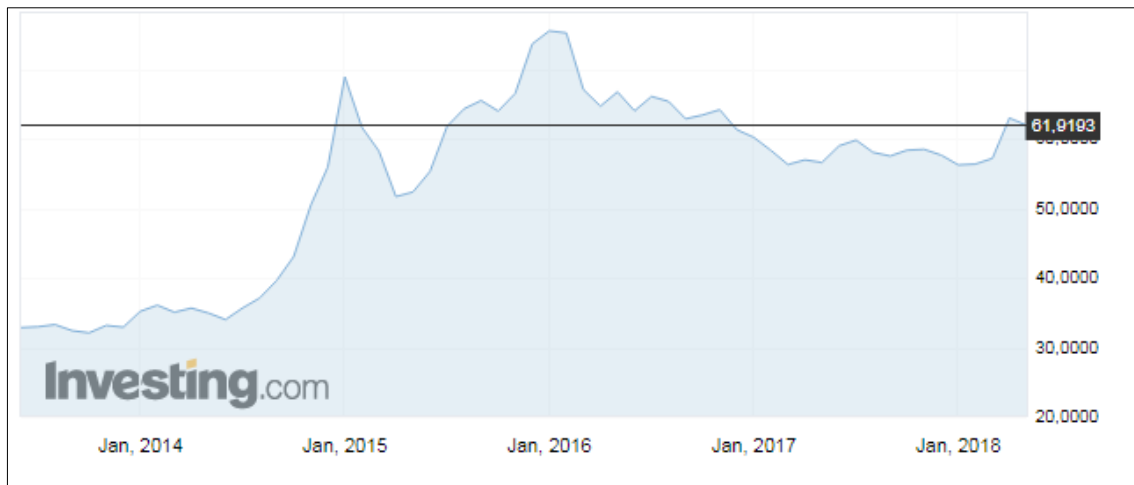
Picture 3 The exchange rate RUB/USD for 2014-2018[52]

In addition, the exchange rate affects international trade. With the strengthening of the national currency, imports are growing. If the currency falls, then goods are more profitable to export. Thus, the factor's influence is estimated at 2 points. Since, the exchange rate depends on oil prices, which are subject to constant fluctuations, it assumes that probability of variation of the exchange rate is a quite high and it is estimated at 4 points.

4.2.2.4 Investments in fixed assets

Investments in fixed assets, as is known, influence on the development of expanded reproduction and on innovative development of the economy. At the present stage of country's economy development, investments play a significant role, since they are a prerequisite for ensuring the effective development of the economy, stable functioning of the basic infrastructure, and achieving sustainable economic growth.

As is shown on the Chart 2, investments in fixed capital in transportation industry fell during the economic recession for 2013-2015. For forecast period from 2018, according to Ministry of Economic Development the stable growth of investments in transportation industry is expected. However, the value of growth rate will be insignificant at the 1,3% level annually. So, probability of variation is estimated at 2 points.

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[52]   Processed by USD/RUB. Investing.com [online]. [vid. 10.05.2018]. Available at: https://ru.investing.com/currencies/usd-rub
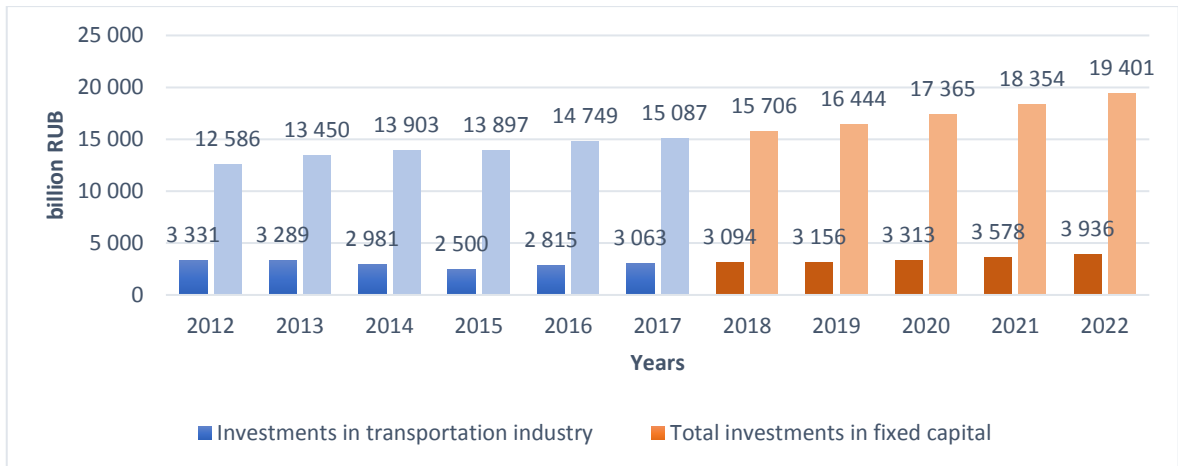
Chart 2 Investments in fixed assets for 2012 -2022[53]

4.2.2.5 Energy prices

In Russia, the price of diesel fuel has been constantly growing due to the increase in excises. On average, fuel prices from 2012 to 2018 have been increasing by 0,5% each month. In 2017, diesel prices increased by 8,2% compared to 2016. Fuel prices are one of the most important factors having a direct impact on the freight shipping market. The share of fuel expenses in the company's total costs can reach 30%. So, the factor's influence was estimated at 3 points. Fuel prices in the Russian market fluctuated constantly, due to unstable export oil prices. Probability of factor's variation was estimated at 3 points.
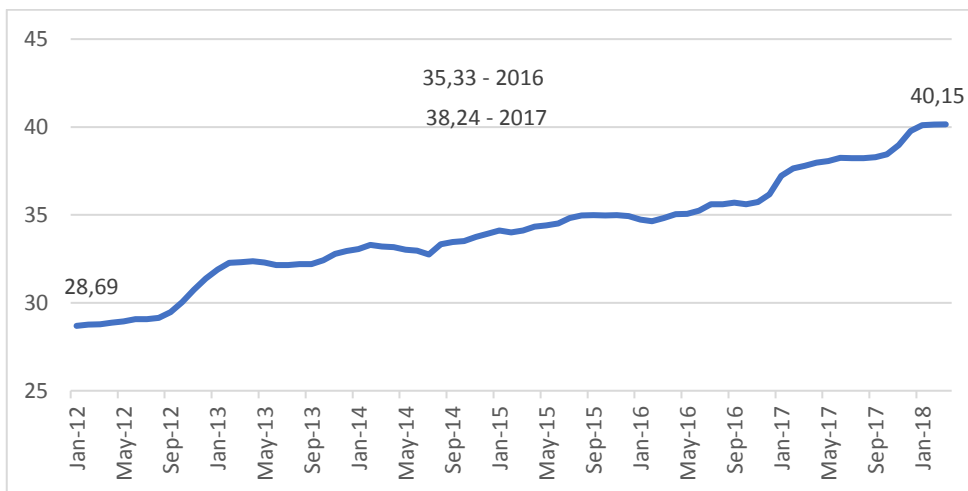
Graph 2 Fuel prices for 2012-2018[54]

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[53]   Processed by Transport and Communications in Russia [online]. Moscow: Federal State Statistics Service, 2016. [vid. 27.04.2018]. p.19. ISBN 978-5-89476-419-1. Available at: http://www.gks.ru/free_doc/doc_2016/transp-sv16.pdf

[54]   Processed by the dynamics of changes in fuel prices in Russia [online]. [vid. 27.04.2018]. Available at: https://autotraveler.ru/russia/dinamika-izmenenija-cen-na-benzin-v-rossii.html#.WvzUDu6FPIU

4.2.2.6 Credit sector's development

For transport companies, there are three possibilities for purchasing vehicles: own funds, credit and leasing. The most popular is leasing, since most small and medium-sized enterprises do not have a large amount of their own funds, and interest rates on loans to legal entities in Russia are quite high and reach 11%[55].

The leasing market and the freight shipping market affect each other. Increasing the rates of advance payments and leasing payments leads to a reduction in demand from carriers, which leads to a slowdown in the renewal of their fixed assets. The economic crisis in Russia also influenced the leasing market. Demand for leasing services decreased, and payment discipline and credit quality of clients deteriorated.

Thus, the most common way for small and medium enterprise to expand business activity and purchase fixed assets is to use leasing services. Since the leasing and freight shipping market are closely interrelated, the factor's impact is hardly determined. The factor is estimated at 1 point. Significant changes in credit sector are not expected, so probability of variation has 2 points.

4.2.3 Social factors

Sociocultural factors form the consumers' attitude to the products and services of transport companies. They also have a significant influence on the ways of providing services by carriers and on the interaction of company employees, their attitude to the results of their work. There are three social factors, that have the greatest influence on the freight shipping market: consumption of households, real income of population, and population size. These factors affect the demand in the freight shipping market. According to the Federal State Statistics Service, in 2015 and 2016 there was a drop in the consumption of households to 8,8% and to 4,1%, respectively. Only in 2017 consumption increased by 3,4%. Over the past four years, there has also been a decline in real income of population. The greatest decrease was observed in 2016 - incomes decreased by 5,8%. Despite the increase in wages, real income has been decreasing, due to a decrease in social payments, income from business activities and property, as well as an increase in the compulsory payments.

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[55]   Interest rates and Structure of loans and deposits by maturity. The Central Bank of the Russian Federation [online]. [vid. 10.05.2018]. Available at: http://www.cbr.ru/statistics/?PrtId=int_rat
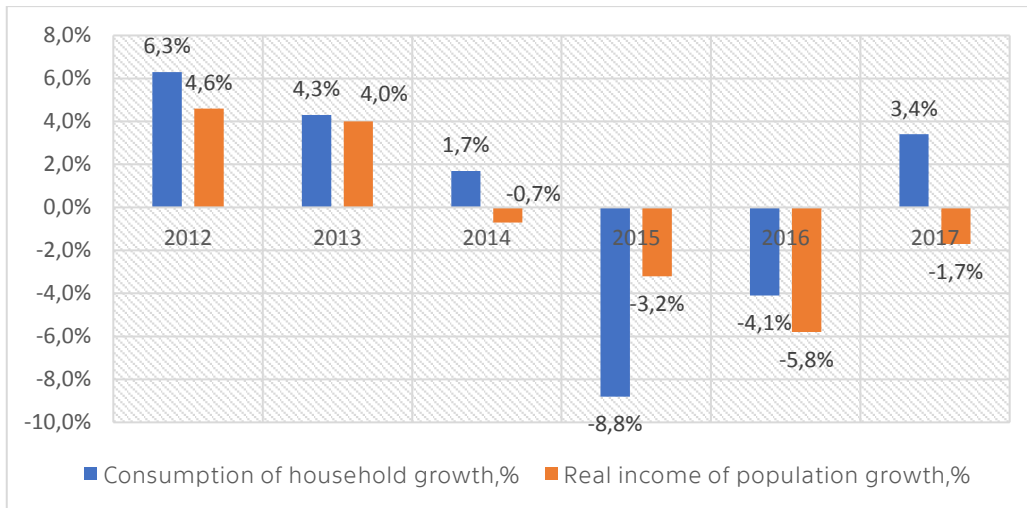
Chart 3 Indicators of population's living standards[56]

Over the period 2012-2017, the population of Russia have constantly grown. However, the growth was extremely low and did not exceed 1%. Only in 2015 the population increased by 1,81% compared to 2014. In general, population's growth is ensured by migration. Population size and its growth are shown on the Chart below.
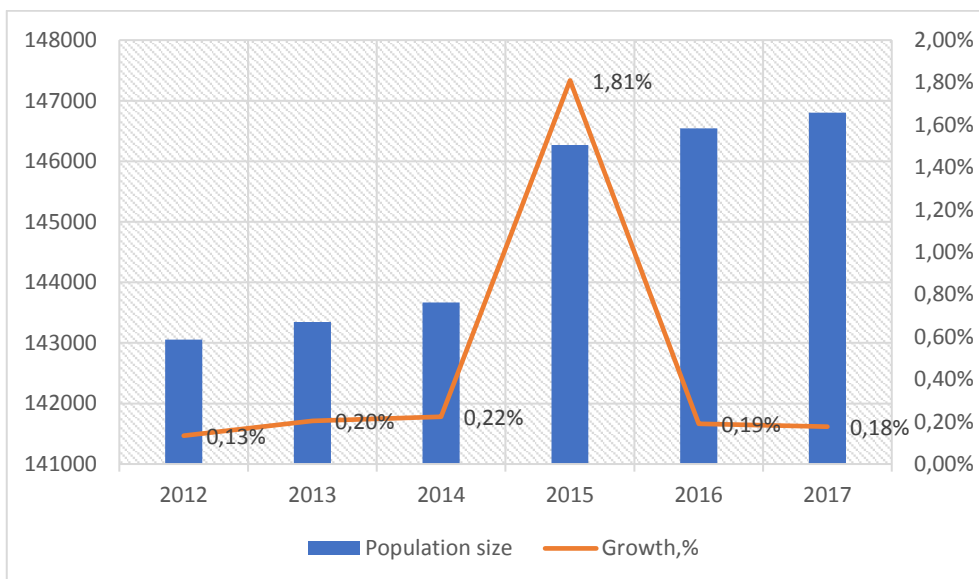
Chart 4 Population size and its growth[57]

Consumption of households and real income affect consumer demand. The more demand, the higher the supply. Producers try to meet the increasing demand, moving

[56]   Processed by Russian Statistical Yearbook [online]. Moscow: Federal State Statistic Service,2017. [vid. 10.05.2018]. pp.140-144. ISBN 978-5-89476-440-5. Available at: http://www.gks.ru/free_doc/doc_2017/year/year17.pdf
[57]   lbid. p.87

the necessary goods throughout Russia and using the services of carriers, if it is necessary. These social factors indirectly affect the freight shipping market, so they are estimated at two points. A slight increase in consumption and real income will be expected in 2018. So, probability of variation is not too high and has 2 points. As for the population's size, there are not expected significant changes. The population size also has an impact on demand, but the degree of influence is extremely small.

4.2.4 Technological factors

The scientific and technological factors simultaneously refer to the internal and external environment. Scientific and technological innovations in the freight shipping market affect the efficiency of carriers, and its services and products. The scientific and technological factors, affecting the freight shipping market, include: the development of a transnational logistics system, new technologies on the market, as well as the level of state and industry financing of scientific and technical research and development, which are aimed at improving technology of freight shipping.

So, for example, in the market of freight shipping there are automated services that allow customers to find the carrier directly, and vice versa. The company Delovii linii launched the project of technological aggregator GetGargo. It considers the parameters and conditions of transportation: the guarantee of delivery time, legal purity of carriers and cars, cargo insurance, a clear shipping system. Ultimately, the program allows to optimize the management of own vehicle fleet, increases the conversion of sales and attracts new customers.

Technologies play a significant role in the development of any industry. The appearance of a new technology can radically change the rules of the industry's functioning. The development of technologies largely depends on the amount of financing, both from the state and private business. The increase in R&D expenses can ensure the growth of development of innovation in the industry. Industry innovation and R&D factors were estimated at 3 and 2 points, respectively. Probability of variation is extremely low and is estimated at 1 point for both factors.

4.3 Road freight shipping market

Freight shipping in Russia is carried out by five types of transport: pipeline, railway, road, sea and air. However, in terms of commercial freight shipping service analysis, pipeline transport will not be considered, due to its narrow specialization. In Russia, due to the specifics of the economy, 87,1% of all cargo is transported by railway. For comparison, as is shown on the Chart 5, in the US railway freight shipping amounts to 40,8% of all freight shipping, in Europe and China – 11,5% and 13,7%, respectively. The share of road freight shipping is only about 8,8%. In the rest of the countries, road freight shipping has a large share. In the United States – 44%, in Europe – 45,7% and in China – 33,4%. Air and sea transport have share about 4%.
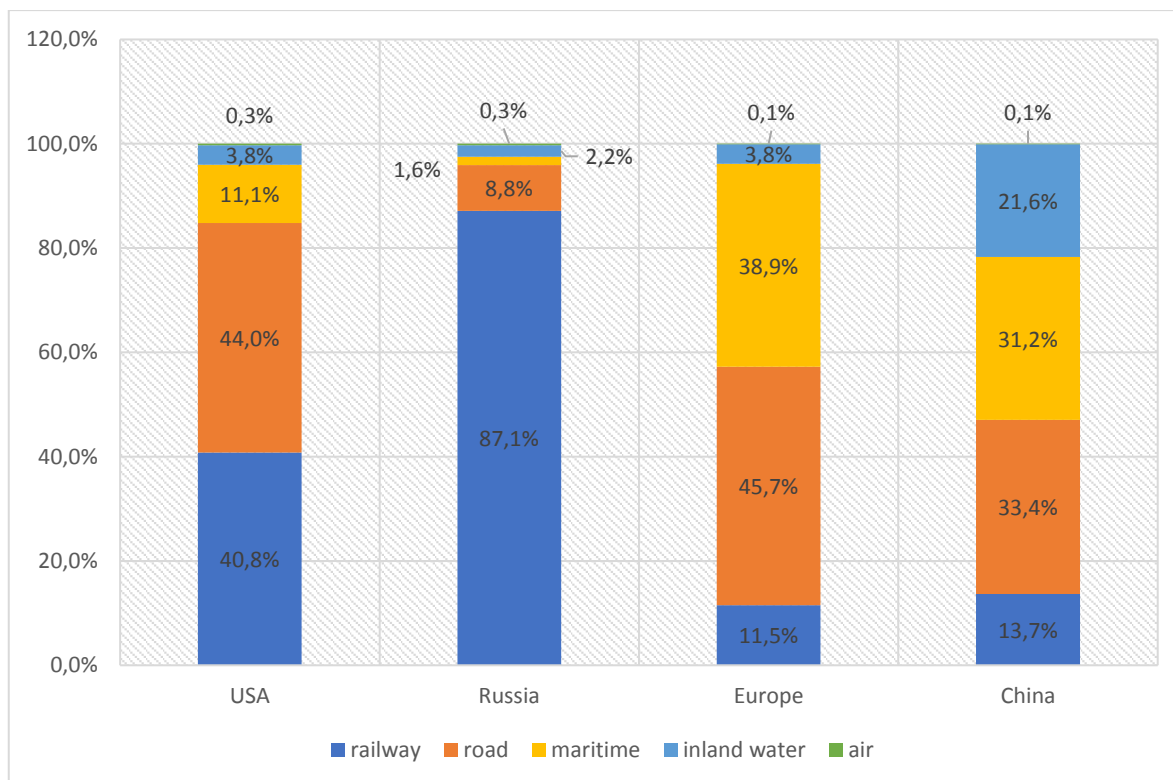
Chart 5 Freight turnover structure by transport modes and countries for 2017[58 59 60 61]

During the period from 2013 to 2015, there was a drop in the freight shipments, as the economy and industrial production slowed down. The strongest decline was observed in 2015 (94,7% against the level of 2014). And the freight turnover, although not significantly, but increased by 0,28%, which was due to the increase in distance. According to the Federal State Statistics Service in 2017, freight shipment by all types of transport amounted to 7 985 million tons (103,77% against the level of 2016), freight turnover amounted to 5 476 billion tons / km. (105,61% against the level of 2016). After 2015, the economy has been recovering and the freight market has been growing at a slow pace.

[58]   Freight Facts & Figures 2017. Bureau of Transportation Statistics [online]. [vid. 10.05.2018]. Available at: https://www.bts.gov/bts-publications/freight-facts-and-figures/freight-facts-figures-2017-chapter-2-freight-moved

[59]   EU Transport in figures. Statistical Pocketbook [online]. Luxembourg: Publications Office of the European Union, 2017. [vid. 10.05.2018]. p. 26 ISBN 978-92-79-62312-7. Available at: https://ec.europa.eu/transport/sites/transport/files/pocketbook2017.pdf

[60]   Freight Ton-kilometers. National Bureau of Statistics of China [online]. [vid. 10.05.2018]. Available at: http://www.stats.gov.cn/tjsj/ndsj/2016/indexeh.htm

[61]   Russian Statistical Yearbook [online]. Moscow: Federal State Statistic Service,2017. [vid. 10.05.2018]. p.439. ISBN 978-5-89476-440-5. Available at: http://www.gks.ru/free_doc/doc_2017/year/year17.pdf
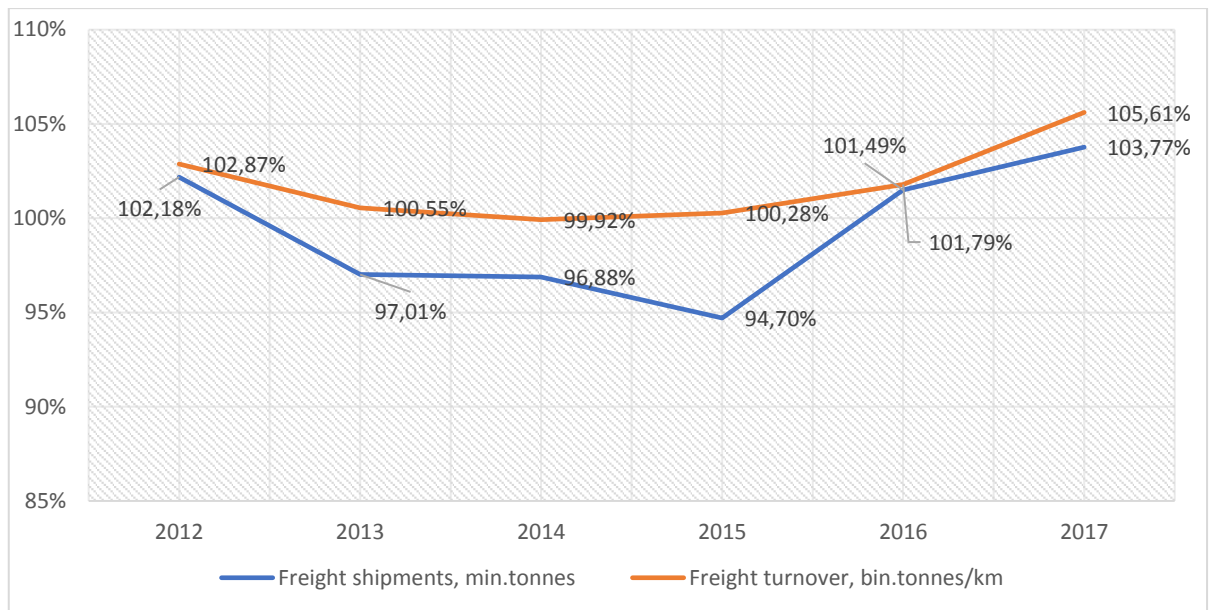
Graph 3 Changes in freight shipments and freight turnover (all type of transport) for 2012-2017[62]

The Russian freight shipping market is characterized by a high share of outsourcing. The reasons for this are as follows:

- The prevalence of rail freight shipping in the total freight turnover and the monopoly position in the market of Russian Railways, which provides (including through subsidiaries) commercial freight shipping services. Industrial enterprises that have their own railway infrastructure and rolling stock, in most cases, carry bulk cargo for short distances. It is reflected in their low freight turnover.
- Sea, air and inland water freight shipping are carried out by specialized transport companies.

The exception is road transport. Many production companies, distributors and retail chains have their own vehicle fleet, which is reflected in the high share of freight shipping by non-transportation organizations. In 2014, more than 70% of freight shipping and about 51% of the freight turnover were carried out by the trucks of enterprises for their own needs[63]. The main event on the Russian road freight shipping market in 2015 was the launch of the "Plato" system. As a result, freight rates have increased and the number of small carriers have decreased. Due to the freight rates increase, some cargoes (primarily inert building materials and other low-yielding cargo) were transferred to the railway. Nevertheless, road transport remains more attractive for freight shipping of high-yield cargoes due to higher customer orientation, simplified registration

[62]   Russian Statistical Yearbook [online]. Moscow: Federal State Statistic Service,2017. [vid. 10.05.2018]. p.437. ISBN 978-5-89476-440-5. Available at: http://www.gks.ru/free_doc/doc_2017/year/year17.pdf
[63]   Road freight shipping market in 2014-2015 and forecast to 2018. RBC Research [online]. [vid. 10.05.2018]. p.9 Available at: http://alfabank.rbc.ru/media/research/file/7.pdf

of documents (compared, for example, with railway transport), high speed of delivery and a more flexible freight rate system. Road freight shipping market was negatively influenced by a drop in imports and a decline in retail trade turnover, caused by a decline in household incomes[64].

The road freight shipping market is characterized by a high percentage of old trucks, which, according to statistics, increases from year to year. As chart below shows, in 2017, percentage of trucks, that have been in operation for more than 10 years, amounted to 61,3%.
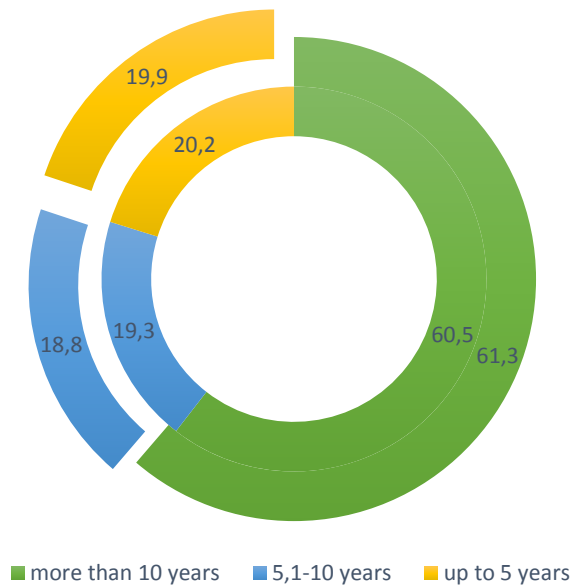
Chart 6 Trucks age composition for 2017[65][66]

Bulk cargoes dominate (in tons) in the structure of cargoes transported by road. Percentage of bulk cargoes amounts to about 75%. Shipping of bulk cargoes in large quantities is carried out in construction industry (clay, gravel, sand, coal, slag, crushed stone), mining industry and agriculture (grain, potatoes). Most of bulk cargo is transported by own transport of enterprises of all sectors of the economy, while the percentage of commercial freight shipping does not exceed 5%. The percentage of foodstuffs freight shipping account for 9% of all freight shipping, timber and consumer goods account for 3%. The percentage of oversized cargo, which includes various types

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[64]   Butov, A.M. Railway freight shipping market. National Research University Highest School of Economics,2016. [vid. 25.04.2018]. pp. 23-24. Available at:
https://dcenter.hse.ru/data/2017/01/13/1115379723202016.pdf
[65]   Own processed by Transport and Communications in Russia [online]. Moscow: Federal State Statistics Service, 2016. [vid. 27.04.2018]. p.47. ISBN 978-5-89476-419-1. Available at:
http://www.gks.ru/free_doc/doc_2016/transp-sv16.pdf
[66]   Truck fleet age composition. In: Russian automotive market research [online]. Russian automotive market research, 2017. [vid. 10.05.2018]. Available at: http://www.napinfo.ru/en/infographics/infographics-automotive-market-segments/truck-fleet-age-composition

of equipment (so-called project cargoes), lifting and moving mechanisms, forklifts, account for 4%[67].

The road freight shipping can be divided into the following segments: FTL, LTL, oversized and hazardous cargoes. According to RBC, FTL (full truck loaded) segment prevailed on the market (73,2% in 2017). The percentage of LTL (less than full truck loaded) was about 17%. Oversized and hazardous cargoes accounted for 7% and 3% respectively.
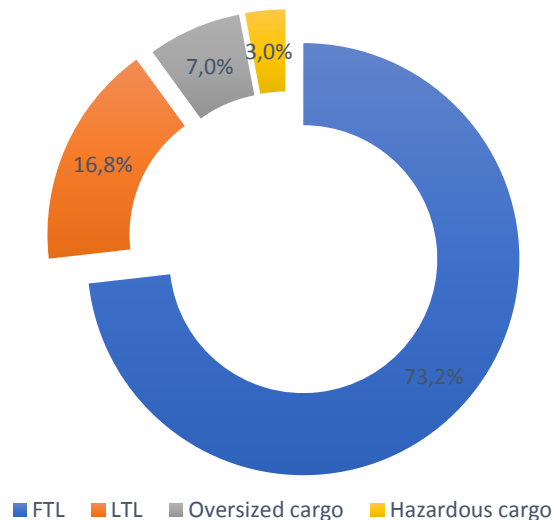
Chart 7 Market segmentation by types of cargo (in monetary terms) [68] [69]

The highest growth rate in recent years has been demonstrated by the LTL segment. Transport and logistics companies operating in this segment provide services for the delivery of relatively small cargoes over long distance. It allows shippers to avoid unnecessary transport costs. On transport terminals, carriers consolidate cargoes from various clients and transport cargoes to the delivery destination, where the cargo is separated and delivered to the recipients. Due to the uneven development of the road infrastructure, freight shipping is concentrated in the European part of the country, as can be seen on Picture 4. In 2017, there was a trend of further development of road infrastructure in regions with high road density, in particular, in the North Caucasus and Volga federal districts. The infrastructure problem is exacerbated by a limited number of service centers. This increases risks of the freight shipping over long distances.

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[67]   Road freight shipping market in 2014-2015 and forecast to 2018. RBC Research [online]. [vid. 10.05.2018]. p.23 Available at: http://alfabank.rbc.ru/media/research/file/7.pdf
[68]   lbid. p.24
[69]   Processed by Overview of the Russian Transport Sector [online]. KMPG,2017. [vid. 10.05.2018]. Available at: https://assets.kpmg.com/content/dam/kpmg/ru/pdf/2017/04/ru-ru-transport-survey.pdf
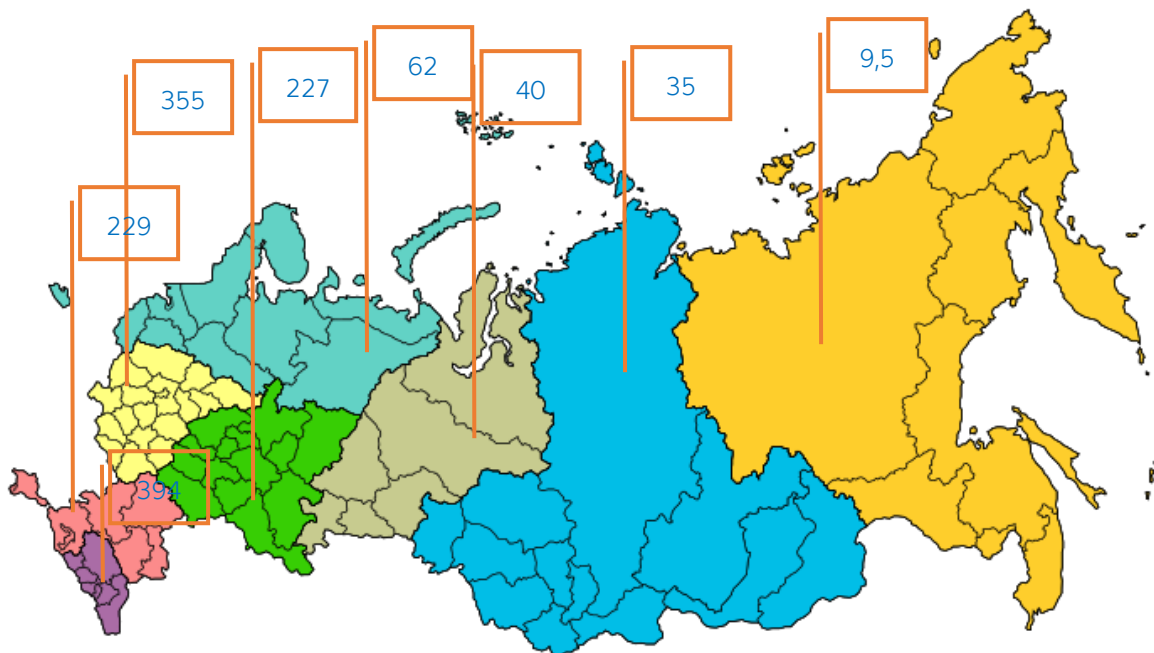
Picture 4. Density of public roads by federal districts in Russia, km of roads per 1,000 square meters. km of territory[70]

4.3.1 Market attractiveness

Market attractiveness is carried out to estimate industry and the company prospects. Analysis consider the evaluation of nine different criteria. The criteria of market attractiveness are scored on a 6-point scale (0 - negative, 6 - positive). Also, each criterion has its own weight significance, which is determined by an expert way. Criterion's significance is estimated on the scale from 1 to 3 (1 - lower importance, 3 - higher importance). The attractiveness of the market is determined based on the final score, which is calculated by the ratio of the achieved score and the maximum score. The more score is achieved, the more attractive the market is. The results of market attractiveness analysis are summarized in the Table 7.

Table 7 Market attractiveness analysis[71]

Criterion	Weight	Evaluation of the criterion							Score	Weight × Score
		Negative			Medium	Positive				
		0	1	2	3	4	5	6		
Market growth	3					x			4	12
Market size	2					x			4	8

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[70] Own processed by Density of public roads by federal districts in Russia, km of roads per 1,000 square meters: Federal State Statistic Service [online]. [vid. 10.05.2018]. Available at: www.gks.ru/free_doc/new_site/business/trans-sv/t2-2.xls

[71] Own processed by MAŘÍK, Miloš. Metody oceňování podniku: proces ocenění - základní metody a postupy. 3., upr. a rozš. vyd. Praha: Ekopress, 2011. ISBN 978-80-86929-67-5.

Level of competition	3			x					2	6
Industry profitability	2					x			4	8
Barriers to entry	1				x				3	3
Substitutes	1			x					2	2
Sensitivity to conjuncture	1			x					2	2
Customer segmentation	2						x		5	10
External impacts	1						x		5	5
Total	16									56

Maximum score	96
Earned score	56
Rating	58%

Within the framework of the analysis, the road freight shipping market attractiveness was estimated at 56 points out of a total of 96 points. According to this result, the attractiveness of the road freight shipping market is slightly above average. Market growth and its size, industry profitability, customer segmentation and external impacts were positively evaluated. Due to the high level of competition, variety of substitutes and strong dependence on conjuncture, these criteria were considered as negative.

4.3.1.1 Market growth

In 2017, the growth of the road freight shipping market in monetary terms was 6,3%. According to researched agency M.A. Research, on domestic routes, the maximum growth was provided by construction, general and packaged cargos. The growth of LTL freight shipping was associated with an increase in the consolidation of cargos of different shippers, aggressive territorial expansion of trade networks and an increase in the demand for Internet commerce.
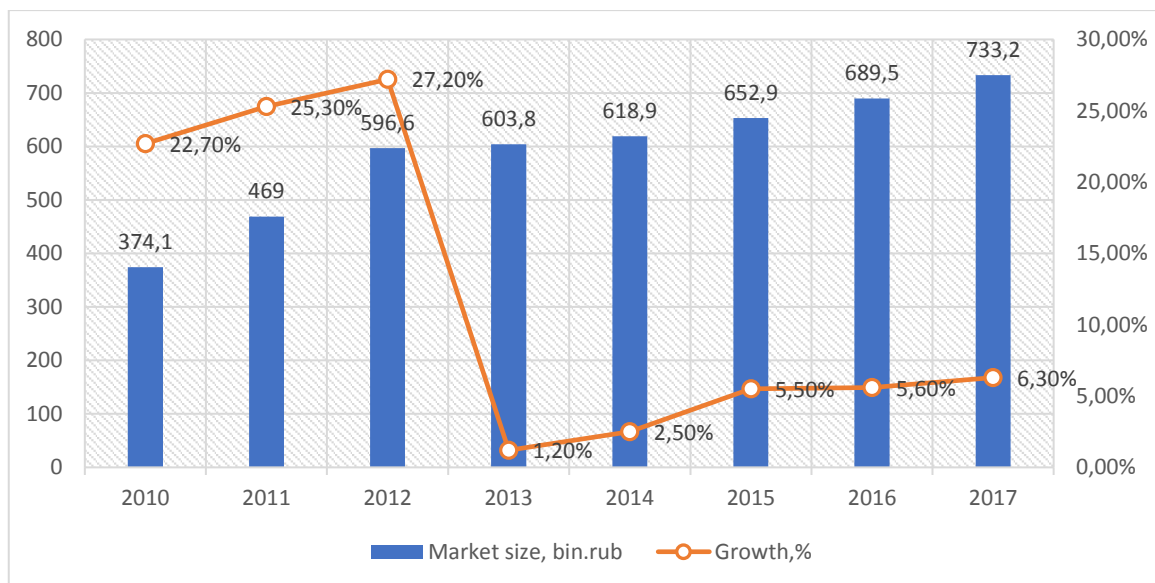
Chart 8 Growth of road freight shipping market for 2010-2017[72] [73]

The road freight shipping market was growing during 2013-2017, although at a slower pace than in the pre-crisis years, when growth rate was more than 20%, as is shown on Chart 8. The market growth criterion is rated as a slightly positive, and is estimated at 4 points.

4.3.1.2 Market size

Among other transport mode, road freight shipping is on the second place in terms of market size. The freight shipping market is dominated by rail transport. The size of the railway freight shipping market amounts to approximately 2 000 billion rubles. Also, road freight shipping market is on the second place in terms of freight turnover, as can be seen from the previously mentioned Chart 5. However, this market is larger in size than the air and sea freight shipping market. Thus, the market size can be estimated as an average, that is, at 4 points.

Table 8 Market size by transport mode[74]

Market size	2012	2013	2014	2015	2016	2017
Road freight shipping	596,6	603,8	618,9	652,9	689,5	733,2
Rail freight shipping	1904	1940	1919	2034	2090	2182
Air freight shipping	90	103,7	116,7	132	129,3	134,1
Sea and inland water freight shipping	36,1	39,1	68,1	73,6	88,7	90,2

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[72]   Own processed by Road freight shipping market in 2014-2015 and forecast to 2018. RBC Research [online]. [vid. 10.05.2018]. p.37 Available at: http://alfabank.rbc.ru/media/research/file/7.pdf
[73]   Own processed by Road freight shipping market analysis in 2013-2017 and forecast to 2018-2022 [online]. In: RBC, 2018. [vid. 10.05.2018]. Available at: https://marketing.rbc.ru/research/27086/
[74]   Own processed by Revenue from the sale of goods, products, works, services according to the financial statements. Unified Interdepartmental Information and Statistical System [online]. [vid. 10.05.2018]. Available at: https://fedstat.ru/indicator/58235

4.3.1.2 Level of competition

In recent years, competition in the freight shipping market has been growing, especially among small businesses. In terms of total freight shipping, small enterprises and individual entrepreneurs predominate. Percentage of small enterprises amounts to more than 70% of total freight shipping. For freight turnover, percentage is slightly lower – 50,7%. In 2017, according to the Federal State Statistics Service, the percentage of large and medium-sized enterprises was 41,1% of freight turnover[75]. The competition will be considered in more detail in the following Chapter. Due to the high level of competition, this criterion is rated at 2 points.

4.3.1.3 Industry profitability

In 2017, the average profitability of companies in the road freight shipping market was 3,6% and was lower than the profitability of freight transportation by sea and railway. The profitability of air freight transportation was negative. In general, the profitability of road freight shipping during 2013-2017 was stable and was at the level of railway freight shipping. Thus, the average profitability can be estimated as higher than the average, at 4 points.
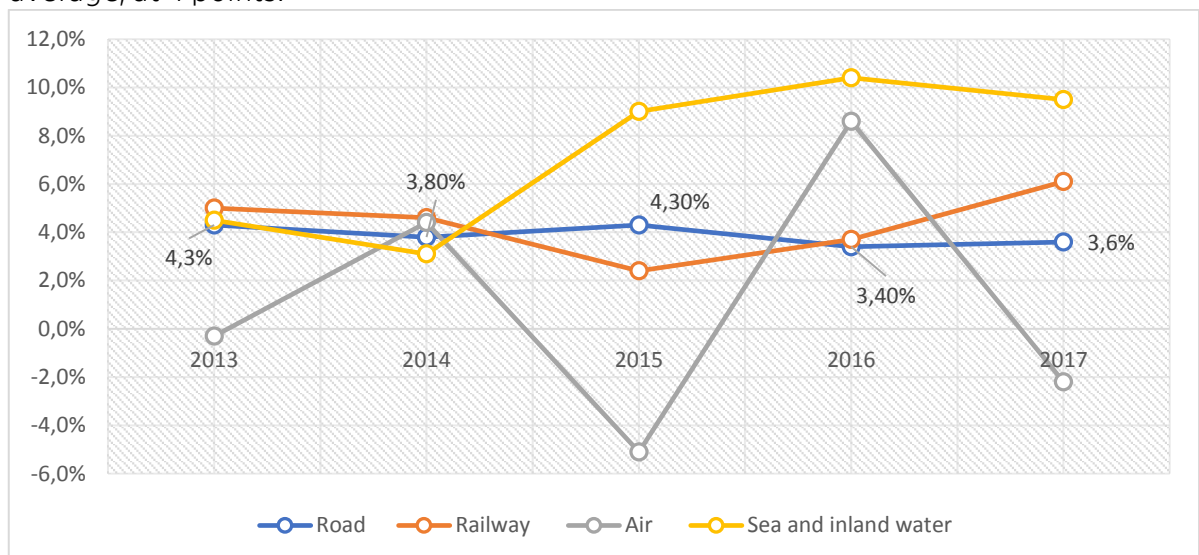
Graph 4 Profitability by transport mode for 2013-2017[76]

4.3.1.4 Barriers to entry

The road freight shipping market is characterized by relatively low economic barriers to entry: new players will not require high initial investment to start own business. Also,

[75]   Transport and Communications in Russia [online]. Moscow: Federal State Statistics Service, 2016. [vid. 27.04.2018]. p.50. ISBN 978-5-89476-419-1. Available at: http://www.gks.ru/free_doc/doc_2016/transp-sv16.pdf

[76]   Own processed by Profitability of goods sold, services. Unified Interdepartmental Information and Statistical System [online]. [vid. 10.05.2018]. Available at: https://fedstat.ru/indicator/43218

as regards administrative barriers, individual entrepreneurs and small business have tax benefits. Due to tax preferences and mechanisms of "black" and "gray" tax optimization, they can offer more competitive freight rates. However, high competition in the market is a serious barrier for new players. Due to low economic and administrative barriers, but high competition, "the barriers to entry" criterion is estimated at 3 points.

4.3.1.5 Substitutes

When there is a need for carriers' services, the customers are given a wide choice: they can use road, railway, sea and air transport. The choice depends on the specificity of the cargo and the delivery time. Bulk cargo (oil, gas) and container cargo are transported by sea. Air transport carries especially valuable cargo, perishable goods and mail. However, in Russia the demand for freight shipping by sea is extremely low, and air freight shipping is expensive. The main substitute for road freight shipping is a shipping by railway. In general, shipping by road is limited by the length of road network. The average distance of a railway freight shipping is much longer than for road transport. However, the growth in the average distance of road freight shipping becomes an increasingly noticeable trend. Thus, we can observe the growing competitive advantage of road freight shipping for short (100-200 km) and medium (up to 1500 km) distances. In addition, road transport is more mobile and has a more flexible pricing system. However, some types of cargo can not be shipped by road transport, such as energy coal and ore cargo[77]. Thus, certain types of cargo can only be transported by one mode of transport. That is, the possibilities of substitution are not fully realized. The criterion is estimated at 2 points.

4.3.1.6 Sensitivity to conjuncture

Road freight shipping is the most affected segment of the freight shipping market due to economic sanctions and recession. The trucking's freight turnover in 2015 was 94,33% compared to the level of 2014, and freight shipments decreased by 7% (93,06% compared to the level of 2014). Then the trucking market adapted to work in the post-crisis period, and increased competition led to a reduction in tariffs. The growth of freight turnover in 2017 was 7,26%, the freight shipments increased by 5,96%.

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[77] Butov, A.M. Railway freight shipping market. National Research University Highest School of Economics,2016. [vid. 25.04.2018]. pp. 23-24. Available at: https://dcenter.hse.ru/data/2017/01/13/1115379723202016.pdf
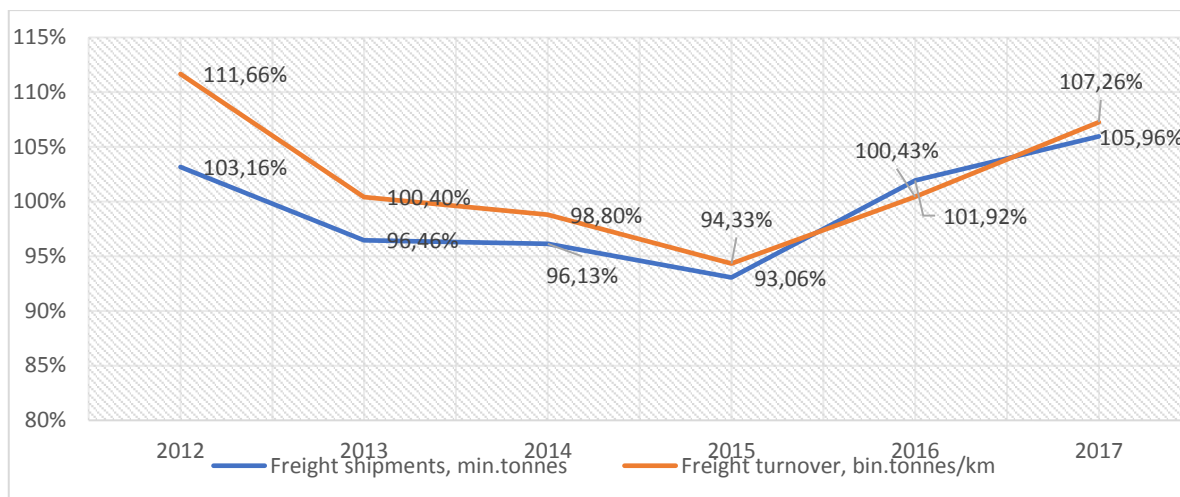
Graph 5 Changes in freight shipments and freight turnover (road transport) for 2012-2017[78]

It follows from the foregoing that freight shipping market strongly depends on the economic conjuncture. According to the Graph 3, During 2013-2015, the freight turnover and freight shipments on the freight shipping market were decreasing. Fall in indicators of road freight shipping was more significant, as can be seen from the Graph 5. Thus, dependence on the GDP of road freight shipping is a quite high, so sensitivity to conjuncture was estimated at 2 points.

4.3.1.7 Customer segmentation

Customer segmentation of road freight shipping is very diverse. Carriers operate on the B2C and B2B markets. Freight shipping services are used by completely different enterprises. They can differ in the industry, be public or private, be small, medium or large business. A consumer can be any person who needs to use freight shipping services. Due to wide customer segmentation, this criterion was estimated at 5 points.

4.3.1.8 External impact

According to PEST analysis's results, the freight shipping market is most influenced by government's tax and trade policy, energy price fluctuations, consumption level and level of population's real income, industry technological development. Currently, the following situation, which is influenced by these external factors, is being observed in the market. Market players are restraining the growth of freight rates due to increasing competition, while the cost is constantly growing. Direct and indirect taxes are increasing, the cost of electricity, rent payments, maintenance and operation of vehicle fleet are also growing. These leads to reducing the company's profit by 30-45%. Due to the

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[78]   Russian Statistical Yearbook [online]. Moscow: Federal State Statistic Service,2017. [vid. 10.05.2018].   pp.437-439.   ISBN   978-5-89476-440-5.   Available   at: http://www.gks.ru/free_doc/doc_2017/year/year17.pdf

depreciation of the ruble, the cost of components and spare parts, which are supplied from abroad, is increasing 1,5-2 times. The general increase in interest rates on loans leads to a rise in price of the cost of working capital. It deprives carriers of available loans, leasing and factoring schemes. Due to the fact that external environment has a significant impact on the market, factor is estimated at 5 points.

4.3.2 Market forecast

Forecast of road freight shipping market is necessary for predicting future earning of the company. Forecasting the development of the road freight shipping market is based on the development of the factors that have a direct impact on this market. According to external analysis, it was revealed that the GDP has the greatest impact on the road freight shipping market. In addition, the correlation coefficient was calculated to determine the relationship between two variables: the GDP and the road freight shipping market. The value of the coefficient was 0,97, which indicates an almost absolute positive correlation. Regression analysis was used to forecast the development of the selected market. It also establishes the relationship between the two variables, which is expressed by a mathematical equation. The analysis was carried out using Excel. The highest and reliable results were shown by the logarithmic function. The coefficient of determination (which is similar to the correlation coefficient) amounted to 0,961. In the linear models, the coefficient was 0,951. As a result, forecast values of the relevant market were determined by the following equation:

$$Y = 509,81 * \ln(x) - 5106,4$$

Table 9 The road freight shipping market forecast by regression analysis[79]

Year	GDP (bin. RUB)	Growth rate	Relevant market (bin. RUB)	Market growth rate
2010	46 309	4,50%	374,1	22,70%
2011	59 698	4,30%	469	18,16%
2012	66 927	3,60%	596,6	19,36%
2013	71 017	1,80%	603,8	-5,06%
2014	79 199	0,70%	618,9	-7,90%
2015	83 232	-2,80%	652,9	-6,60%
2016	86 043	-0,20%	689,5	0,20%
2017	92 081	1,50%	733,2	3,70%
2018	98 224	2,10%	753,9	2,82%
2019	103 462	2,10%	780,4	3,51%
2020	110 237	2,20%	812,7	4,14%

[79]   Own processed by MAŘÍK, Miloš. Metody oceňování podniku: proces ocenění - základní metody a postupy. 3., upr. a rozš. vyd. Praha: Ekopress, 2011. ISBN 978-80-86929-67-5.

2021	118 246	2,30%	848,4	4,40%
2022	125 245	2,30%	877,8	3,46%
The average market growth rate				3,67%

In addition, there is an additional method for determining the market development and its growth rate, such as the time series analysis. The analysis was carried out using Excel tools, such as exponential smoothing. The highest and reliable results were shown by the logarithmic function. The coefficient of determination amounted to 0,968. So, the market growth rate was calculated by the following equation:

$$Y = 164{,}37 * \ln(x) + 374{,}37$$

Table 10 The road freight shipping market forecast by the time series analysis[80]

Year	Relevant market (bin. RUB)	Exponential smoothing	Market growth rate
2010	374,1	#Н/Д	
2011	469	374,1	
2012	596,6	440,5	
2013	603,8	549,8	
2014	618,9	587,6	
2015	652,9	609,5	
2016	689,5	639,9	
2017	733,2	674,6	
2018	735,5		0,32%
2019	752,8		2,35%
2020	768,5		2,08%
2021	782,8		1,86%
2022	796,0		1,68%
The average market growth rate			1,7%

Thus, the market growth rate determined by regression analysis is higher than growth rate determined by time series analysis. Also, the first mentioned rate more fully correlates with the development of GDP and of relevant market. So, the growth rate calculated by regression analysis will be basis for determining BTC company's sales growth rate. The average market growth rate (1,7%) calculated by time series analysis will be constant company's sales growth rate. Since, unlike the market growth rate determined by regression analysis, this rate is lower than GDP's growth rate, which is the main prerequisite for the calculation of terminal value by Gordon model.

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[80]   Own processed by Excel

4.4 Competitive analysis

The road freight shipping market is characterized by an unsettled terminological base and a lack of a clear division of the market structure. As a result, own company's classification was created and their specialization was determined according to certain criteria. To classify competitors, the following characteristics were considered:

- forwarding, warehousing and transportation services,
- freight shipping by road / several transport modes,
- functions in the market,
- geographic presence,
- amount of revenue.

Companies, which provide freight shipping services only by road transport, are called specialized ones. In turn, universal companies are distinguished by the fact that they carry out delivery by various modes of transport. Market players can perform various functions, acting as a carrier, forwarder and forwarder-carrier. Moreover, the market may be segmented by geography presence into global (represented in more than 2 countries), regional (1-2 regions) and national (only in one country) segments. According to the regional coverage of the branch network in the Russian Federation, companies are divided into federal (represented in 5 or more districts), regional (in 2-4 districts) and local (in 1 district). The amount of revenue also allows to classify the companies into:

- large - over 1 billion rubles;
- medium - 300 million rubles. - 1 billion rubles.
- small - up to 300 million rubles.

4.4.1 Market key players

According to RBC market research agency, in 2014 the number of registered companies with revenues of more than 1 million rubles, the main activity of which is road freight shipping, amounted to 14,8 thousand. Number of companies providing forwarding services amounted to 17,5 thousand. At the same time, the percentage of large and medium-sized companies was approximately 1,75% and 2,5%, respectively. In general, microenterprises, whose revenues do not exceed 60 million rubles, predominate in the market, that is, as mentioned earlier, the main share of the market is occupied by individual entrepreneurs[81]. There is a variety of types of companies in the road freight shipping market - from global transport and logistics holdings to local carriers. Among large and medium-sized outsourcing companies, most are universal /

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[81]   Road freight shipping market in 2014-2015 and forecast to 2018. RBC Research [online]. [vid. 10.05.2018]. p.40 Available at: http://alfabank.rbc.ru/media/research/file/7.pdf

specialized freight forwarding companies, the number of "clean" carriers or forwarders is insignificant.

In 2017 the growth rate of turnover (in RUB) of the leading 15 road freight carriers amounted to 22,6%. Total revenue of companies in 2017 amounted to 71,8 million rubles - almost 10% of whole market. The largest share (in rubles) in the Russian road freight shipping market is occupied by Russian freight forwarding companies Deloviie Linii (2,95%), PEK (1,18%), ZhelDorExpedition (0,81%), GlobalTruck (0,77%).
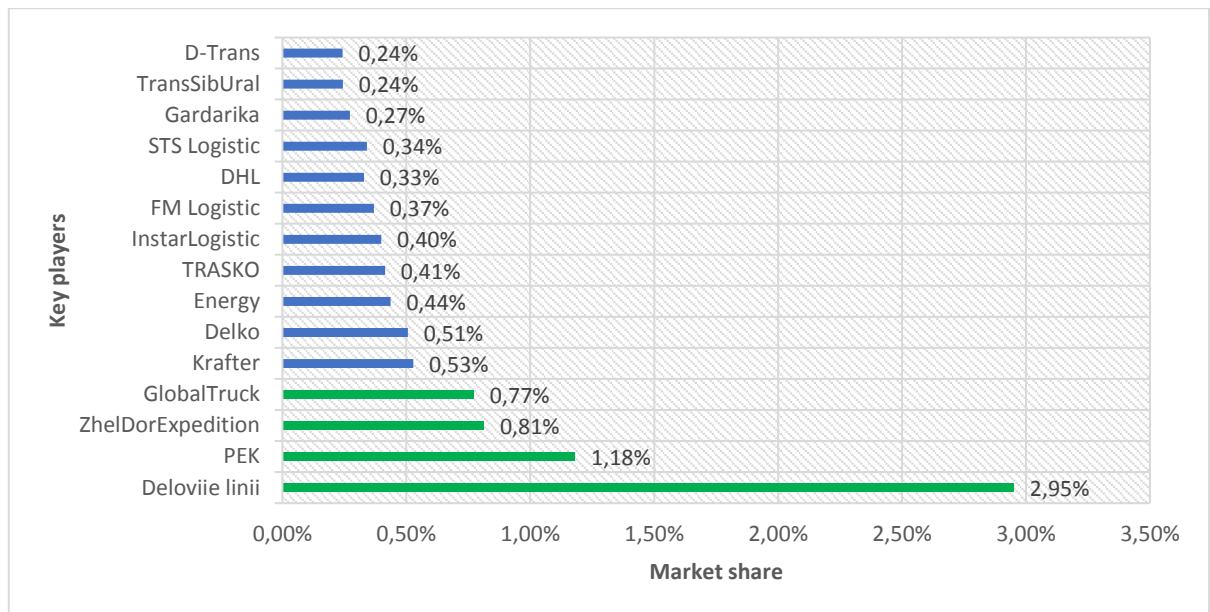
Chart 9 Market shares of key players for 2017[82]

Leading position in the market belongs to the Holding "Deloviie Linii", which has the largest fleet of trucks and is represented in the segments of tilted, isothermal freight shipping of FTL and LTL cargoes. The second place is occupied by PEK, which carries out tilt freight shipping of LTL cargoes. The third position belongs to ZhelDorExpedition, which provides freight shipping services for LTL, oversized and container cargoes by rail and tilt, refrigerator, isothermal road transport. All three companies are national carriers of delivery of LTL cargoes by various transport modes. Deloviie Linii and PEK also provide air freight shipping service. ZhelDorExpedition pays special attention to railway transportation. The fourth place is occupied by the Group of Companies GlobalTruck, which includes Lorry, Magna LLC, Longran Logistic LLC, Challenger LLC, GlobalTruck Logistics LLC. The company mainly provide tilt and refrigerator FTL freight shipping.

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[82]   Own processed using public data on companies

4.4.2 Competitive strength analysis

Company's competitive strength analysis is conducted by valuation of the various factors, which impact on company's market position. These factors are divided into direct and indirect. Direct factors are factors directly perceived by the customer. These are a price, delivery terms, range of services, geographic presence and firm's image. Indirect factors are factors that are not usually perceived by the customer but create a certain background for the business. Such factors include quality of management, staff performance, investment in innovation. The factors are estimated on scale of 0 to 6 (0 – the competitors have advantages, 6 – the company has the advantage). The weight of each factors is estimated on scale of 1 to 3 (1 - lower importance, 3 - higher importance). The company's competitive strength is determined by the ratio of achieved points and maximum points. The results of the company's competitive strength analysis are summarized in Table 10. Each factor is described in the text below.

Table 11 Competitive strength analysis[83]

Factors		Weight	Evaluation of the factor							Scores	Weight ×Scores
			Negative			Medium	Positive				
			0	1	2	3	4	5	6		
Direct factors	Price	3				x				3	9
	Delivery terms	2				x				3	6
	Range of services	2						x		5	10
	Geographic presence	1			x					2	2
	Company image	1						x		5	5
Indirect factors	Management	3				x				3	9
	Staff	2				x				3	4
	Innovation	2				x				3	6
Total		16									53

Maximum score	96
Earned score	53
Rating	55%

[83]   Own processed by MAŘÍK, Miloš. Metody oceňování podniku: proces ocenění - základní metody a postupy. 3., upr. a rozš. vyd. Praha: Ekopress, 2011. ISBN 978-80-86929-67-5.

Within the framework of the analysis, the company's competitive strength was estimated at 55 points out of a total of 96 points. According to this result, the BTC competitive strength is slightly above average. Range of service company image were positively evaluated. Geographic presence was considered as negative. The other factors had the average scores. For analysis 8 companies were selected. The selected companies specialize in the LTL freight shipping, as well as, Byte-Transit-Continent, and provide a service for calculating the price and delivery time online. In addition, all the companies operate and have branches in Siberian Federal district.

4.4.2.1 Freight rates and delivery time of freight shipping

Rates and delivery time of freight shipping are one of the main competitive parameters in the road freight shipping market. Demand for road freight shipping in Russia is traditionally less elastic to the terms of transportation than to its rates. In analysis, freight shipping between two transport terminals is considered for 4 directions: Novosibirsk - Moscow, Novosibirsk - Rostov-on-Don, Novosibirsk- Ekaterinburg, Novosibirsk - Vladivostok. In calculations, the weight of cargo was 1 kg, dimensions − 0,01 m3. Companies are presented in the tables in the appropriate order: from the lowest rates to the highest; from the shortest shipping terms to the longest.

The rate analysis shows that KIT company has the lowest rates, RATEK company has the highest. Byte-Transit-Continent gets the fourth place, exactly on the middle. Company's rates are neither high nor low. For the distances Novosibirsk − Moscow and Novosibirsk − Ekaterinburg, the company has the second-lowest shipping rate after KIT company. However, as regards shipping from Novosibirsk to Vladivostok, company's rate is almost the highest after rate of RATEK company. Since the company has average rates of 1 kg of LTL cargo, this factor is rated at 3 points.

Table 12 The shipping rate of 1 kg of LTL cargo on May 2018, in RUB[84]

	Novosibirsk - Moscow	Novosibirsk-Rostov-on-Don	Novosibirsk-Ekaterinburg	Novosibirsk-Vladivostok
KIT	180	250	220	300
ZhelDorExpedition	300	300	300	500
Energiia	390	450	420	300
Byte-Transit-Continent	290	450	240	760
Deloviie Linii	408	442	411	578
Baikal-Service	500	400	480	580
PEK	450	500	450	600
RATEK	590	630	450	840

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[84]   Own processed using public data on companies

The shortest delivery time is offered by KIT company, Energiia company has the longest delivery time. Bait-Transit-Continent provides average delivery time of freight shipping. However, the company transports cargoes within 3 days, the shortest delivery time from Novosibirsk to Moscow among the other companies. For the rest of the routes, the company has average delivery time, so the factor is estimated at 3 points.

Table 13 Delivery time of 1 kg of LTL cargo on May 2018, days[85]

	Novosibirsk - Moscow	Novosibirsk- Rostov-on-Don	Novosibirsk-Ekaterinburg	Novosibirsk-Vladivostok
KIT	6	7	3	7
Baikal-Service	5	7	4	10
PEK	5	7	4	10
Byte-Transit-Continent	3	8	4	12
Deloviie Linii	5	9	4	10
ZhelDorExpedition	7	10	4	12
RATEK	7	8	3	16
Energiia	6	11	3	16

4.4.2.2 Range of service

The analysis of road freight shipping services considers the presence or absence of the particular service by companies. The presence of one or another service is marked with a 1 sign. Companies provide various type of services, which can be divided into the following segments:

- rolling stock type
- cargo type
- freight shipping direction
- related service

Road freight shipping by rolling stock type includes tilt, refrigerator, isothermal, container transport and car transporter. Types of cargo are the following: FTL, LTL, hazardous, oversized / project cargoes and cars. In addition to basic services, the company can provide related services, such as warehousing service, cargo insurance, assistance with the customs clearance, express delivery. All companies represented in the table below carry out domestic and international freight shipping. The main direction of international transportation is the countries of the Eurasian Economic Union. Freight shipping is carried out mainly in tilt, all-metal trucks.

The largest range of services is provided by the company ZhelDorExpedition: the company provides the full range of logistics services, carries out transportation by all types

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[85]   Own processed using public data on companies

of transport except for car transporter, and transports all types of cargo except dangerous and cars. Byte-Transit-Continent also has a wide range of services. The fleet of the company includes all types of transport: tilt, all-metal, container, refrigerator, isothermal and car transporters. The company carries out transportation of LTL, oversized cargo, and cars. The company provides related services, such as customs clearance and warehousing service. The factor is estimated at 5 points.

Table 14 Range of service on May 2018[86]

Company	Domestic shipping	International shipping	Shipping by rolling stock type					Shipping by cargo type					Logistic services			
			tilt, all-metal	container	refrigerated	isothermal	Car transporter	FTL	LTL	hazardous	oversized	cars	warehousing	Customs	cargo insurance	Express delivery
Deloviie Linii	1	1	1	1		1		1	1		1		1	1	1	1
PEK	1	1	1						1				1	1	1	1
ZhelDorExpedition	1	1	1	1	1	1		1	1		1		1	1	1	1
Energiia	1	1	1						1				1	1	1	1
Baikal-Service	1	1	1					1	1	1	1		1	1	1	
RATEK	1	1	1	1					1		1		1			
Byte-Transit-Continent	1	1	1	1	1	1	1		1		1	1	1	1		
KIT	1	1	1					1	1						1	1

4.4.2.3 Geographic presence

BTC has a branche network throughout Russia. In total, the company has 18 offices. Most of them are located in the Siberian Federal districts and the Far East, as is shown on the Picture 5. To transport cargo from China, the company opened offices in Vladivostok and Khabarovsk. The office in Ulan-Ude allows to transport cargoes from Mongolia, transportation of cargoes from Kazakhstan is carried out through Omsk and Novosibirsk. BTC also carries cargo from Europe, but the company has only one office in Moscow and this deriction is not considered as a priority. However, among the competitors, the company has the narrowest branch network. The largest company by number of branches is Energiia: the company has 287 branches. The geographic factor is estimated at 2 points.

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[86]   Own processed using companies' public data

Table 15 Number of comanies' branches

Company	Number of branches
Deloviie Linii	243
PEK	136
ZhelDorExpedition	213
Energiia	287
Baikal-Service	81
TES	49
RATEK	120
Byte-Transit-Continent	18
KIT	200
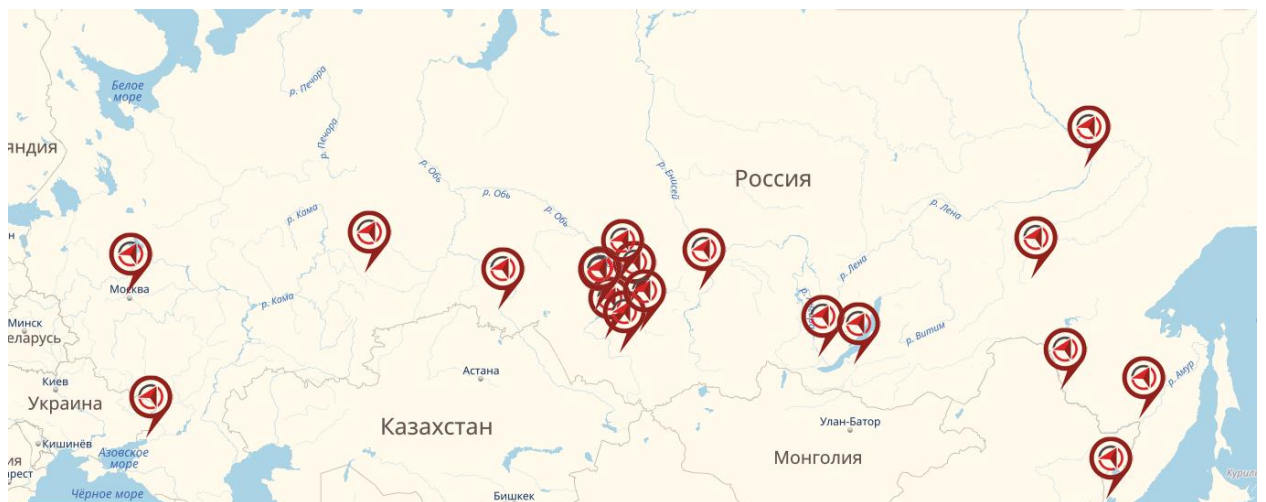
Picture 5 The geographic presence

4.4.2.4 Company image

BTC is one of the largest road carriers located in the Siberian Federal District. The company's portfolio of clients includes more than 4,000 companies in Novosibirsk and the Novosibirsk region, which indicates the reliability of Byte Transit. Having its own freight trucks fleet, the company promptly develops optimal schemes of complex freight shipping to deliver cargo "door-to-door" to any distances in the shortest possible time. The company is known for carrying out transportation of any complexity. For example, by state order, the company carries out transportation of art, as well as secret and hazardous cargoes under protection. The company also participates in federal and regional target programs and is engaged in charity. For example, in 2013 the company provided charitable assistance in delivering humanitarian aid to the regions of the Far East affected by the floods[87]. The image of company is estimated at 5 points.

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[87]   About Byte-Transit [online]. [vid. 10.05.2018]. Available at: https://www.sibtrans.ru/about/

4.4.2.5 Management

For 25 years of work from a small company founded by several people, Byte-Transit-Continent has grown to a large holding. Since the day of foundation, the company's management has placed emphasis on the professionalism and quality of the services provided. The chosen policy allowed to successfully develop and increase each year the size of the company, as well as the number of regular customers.

The quality of company management is also confirmed by the fact that to date BTC is the only carrier in the Siberian region, which has won four times the award "For Successful Business Development in Siberia" and has the official status of "RELIABLE PARTNER". Also, despite a small number of branches across the country, the company's revenue exceeds the revenue of KIT, which has 200 branches (646 billion rubles in comparison with 487 billion rubles). However, as it will be shown in the financial analysis, the company's financial results were not satisfactory enough. The factor is estimated at 3 points.

4.4.2.6 Staff

Ensuring decent working conditions for employees is one of the main tasks of Byte-Transit-Continent LLC, within the framework of the current labor protection management system. The company annually provides a special assessment of working conditions with the requirements of Federal Law No. 426-FZ. As is shown in the Table 16, number of employees reduced in 2014 from 555 to 507. The main reason was the closing of branches. However, it did not influence on labor productivity, which constantly increased. It is worth to noting, that the average monthly salary was lower than industry salary. In addition, the company did not provide sufficient salary growth for 5 years. The salary increased in 2015 and 2017, however the growth was supported by lump sum employees' bonuses, not by the real salary growth.

Thus, despite of the fact that company's main objective is to ensure decent working conditions, BTC has obvious problem with this statement. The company did not provide sufficient level of salary to its employees. However, the labor productivity slightly grew. So, the factor is rated the average, at 3 points.

Table 16 Indicator, described working conditions[88] [89]

thousand RUB	2013	2014	2015	2016	2017
Salary	139203	128517	157176	137997	171199
Number of employees	555	507	518	527	543

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[88]   Own processed using company's financial statements
[89]   Transport and Communications in Russia [online]. Moscow: Federal State Statistics Service, 2016. [vid. 27.04.2018]. p.14. ISBN 978-5-89476-419-1. Available at: http://www.gks.ru/free_doc/doc_2016/transp-sv16.pdf

Labor productivity	1164,6	1160,2	1202,6	1214,8	1253,6
Average monthly salary per employee	20,9	20,7	25,8	21,8	26,2
Average monthly salary per employee in the industry	21,7	24,7	26,4	28,3	29,4

4.4.2.7 Innovation

The company does not have intangible assets and does not invest in R & D research. Unlike the company Deloviie Linii, which successfully implemented the project Get-Cargo. The program allows to competently manage vehicle fleet and aims to increase sales. This aggregator is an opportunity to combine freight forwarders and vehicle fleet owners who are now restructuring into new work schemes.

However, lack of research investment does not mean that the company refuses to innovate. The company is more likely to be a follower, that is, it introduces new technologies, that are expressed in the technology update of the vehicle fleet and the using of modern cargo tracking applications, after these technologies have been tested by the largest market players. The factor is estimated at 3 points.

4.4.3 Sales growth rate forecast

Based on the results of the market attractiveness and competitive strength analysis, it is possible to estimate the prospects of company being evaluated. The company's prospects are determined by the "Boston" matrix, which assumes that the market attractiveness on which the company operates and the company's competitive strength influence on company's prospects. Company's strength was estimated at 55 points and reached 58%. Within the framework of Boston matrix, this result is considered as the average. Market attractiveness was rated at 56 points and reached 55%. From the Boston matrix point of view, this result also is considered as average. According to obtained results, Byte-Transit-Continent is the company with acceptable or satisfactory prospects. It means, that the company has average prerequisites for further functioning on the road freight shipping market. Since the company continues its business, which was confirmed by the aforesaid, the sales forecast can be carried out.

Competitive strength	Large	3.Company, which should change its business focus	2.Company with good prospects	1.Company with clear prospects
	Medium	6.Company, which should change its business focus	5.Company with acceptable prospects	4.Company with good prospects

	Small	9.Company without prospects	8.Company with small prospects	7.Company with limited prospects
		Low	Medium	High
		Market attractiveness		

Picture 6 Boston matrix

The sales forecast depends on the sales growth rate. According to Mařik's formula, this indicator is determined by forecast market growth rates and by forecast company's market share. The formula is as follows:

Sales growth rate = Market growth index * Market share growth index[90]

Market growth rate was calculated in the Chapter 4.3.2. Calculation of company's market share is presented in the Table 17.

Table 17 Calculation of the company's market share[91]

	2013	2014	2015	2016	2017
Market size, billion RUB	603,8	618,9	652,9	689,5	733,2
Company's sales, thousand RUB	646 375	588 233	562 803	640 226	680 715
Market share, %	0,089	0,095	0,090	0,082	0,087

The market share of BTC is no more than 0,1%. The forecast of market share is shown in the Table 18. It is assumed, that annual market share growth will be in the range from 1 p.p. to 5 p.p.

Table 18 Forecast the company's market share[92]

	2013	2014	2015	2016	2017
Forecast market share, %	0,089	0,090	0,095	0,099	0,100

Thus, having all the necessary data, according formula mentioned above, it is possible to determine the company's sales growth rate. The calculation's results are presented in the Table 19.

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[90]   Own processed by MAŘÍK, Miloš. Metody oceňování podniku: proces ocenění - základní metody a postupy. 3., upr. a rozš. vyd. Praha: Ekopress, 2011. ISBN 978-80-86929-67-5. p.95

[91]   Own processed

[92]   Own processed

Table 19 The forecast company's sales[93]

Year	Relevant market (bin. RUB)	Market growth rate	Market share BTC	Sales growth rate BTC	Sales BTC, thousand RUB
2010	374		0,071%		
2011	469	25,4%	0,076%		
2012	597	27,2%	0,087%		
2013	604	1,2%	0,089%		646,4
2014	619	2,5%	0,095%		588,2
2015	653	5,5%	0,090%	-4,4%	562,8
2016	690	5,6%	0,082%	13,9%	640,2
2017	733	6,3%	0,087%	6,3%	680,7
2018	754	2,8%	0,089%	4,83%	713,6
2019	780	3,5%	0,090%	4,68%	747,0
2020	813	4,1%	0,095%	9,93%	821,2
2021	848	4,4%	0,099%	8,80%	893,4
2022	878	3,5%	0,100%	4,50%	933,6

Thus, it is expected that the company's sales will slightly increase during 2018-2022. Since, the sales depend on the market development, its fluctuations will respond to relevant market's dynamics.

4.5 Financial analysis

The financial condition of the company has a significant impact on its value, and is also a starting point in forecasting the company's development. Therefore, before evaluating Byte-Transit-Continent LLC and developing strategies for increasing value, it is necessary to analyze the company's property status, intensity and efficiency of using the company's existing capital, as well as the financial stability and solvency of the company on the basis of financial reports of Byte-Transit LLC -Continent for 2011-2013, presented in Appendix.

4.5.1 Financial statement analysis

4.5.1.1 Horizontal analysis of the balance sheet

The horizontal analysis of the company's property was drawn up by determining the relative and absolute changes of each balance sheet item. In the first place, assets and then liabilities were analyzed. The results of the analysis are presented in the Table 20.

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[93]   Own processed by MAŘÍK, Miloš. Metody oceňování podniku: proces ocenění - základní metody a postupy. 3., upr. a rozš. vyd. Praha: Ekopress, 2011. ISBN 978-80-86929-67-5.

Table 20 Horizontal analysis of assets in relative and absolute changes[94]

Assets	2014	2015	2016	2017	2014	2015	2016	2017
I. FIXED ASSETS	16,1	-13,4	15,1	25,3	14566	-14114	13705	26405
Fixed assets	16,5	-16,3	17,3	25,7	13609	-15637	13924	24226
Real estates	15,4	-12,3	16,3	32,0	8125	-7515	8674	19852
Transport	18,5	-23,2	19,5	13,6	5484	-8122	5250	4374
Long-term investments	11,4	17,2	-2,9	20,0	900	1511	-293	1998
Other noncurrent assets	24,2	4,1	24,3	47,8	57	12	74	181
II. CURRENT ASSETS	-9,5	33,4	3,8	2,7	-7243	22985	3445	2557
Inventories	37,0	-43,1	92,7	10,2	678	-1081	1326	282
Account receivable	-6,1	27,9	2,7	0,5	-3456	14744	1835	375
Short-term investments	-31,2	30,1	-22,1	1,5	-2424	1606	-1533	82
Cash	-21,2	91,3	13,8	9,5	-2111	7181	2071	1618
Other current assets	73,7	324,2%	-36,3	44,8	70	535	-254	200
Total of assets	4,4	5,1	9,4	14,5	7323	8871	17150	28962

For 2013-2017 years, assets constantly, but irregularly were growing. During the crisis period 2014-2015, the value of fixed assets decreased by 13,4% (14 114 thousand RUB). Since the company closed the branch office and realized several trucks, which reduced the item "Transport" by 23,2%. Further growth of fixed assets was associated with the opening of new branches in Almaty. In 2016, the company redeemed debt securities, which led to fall in long – term financial investments by 2,9%.

The crisis period 2014-2015 had an impact on current assets. In 2015, the accounts receivable sharply increased by 27,9% and inventory decreased by 43,1% due to realization of non-operational spare parts of freight vehicles. To maintain liquidity, the company's cash rose twofold, by 91,3%. In 2016, increase in account receivable was associated with sales growth. In general, the growth of the assets indicates that the firm has overcome the crisis period and is striving to expand.

As for the company's liabilities and equity, the values of the share and additional capital remained constant. For the period, retained earnings was slightly growing. In 2015, the growth slowed down by 2,9%. The long-term liabilities steadily decreased. The short – term liabilities declined by 5,6% in 2014. The main reason was fall of accounts payable. In the further periods, the short-term liabilities constantly increased. In 2016, the company repaid part of its short-term debts and in 2017, got new short-term loan, which led to increasing liabilities by 19,1%.

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[94]   Own processed by balance sheet

Table 21 Horizontal analysis of equity and liabilities in relative and absolute changes[95]

	2014	2015	2016	2017	2014	2015	2016	2017
III. EQUITY	11,0	2,8	11,2	17,2	12302	3495	14231	24390
Share capital	0,0	0,0	0,0	0,0	0	0	0	0
Additional capital	0,0	0,0	0,0	0,0	0	0	0	0
Retained earnings	11,4%	2,9	11,5	17,7	12302	3495	14231	24390
IV. Long-term liabilities	-30,3	-15,5	-39,2	-28,9	-2356	-838	-1790	-803
Loans	-30,3	-15,5	-39,2	-28,9	-2356	-838	-1790	-803
Other long-short liabilities					0	0	0	0
V. Short-term liabilities	-5,6	14,0	9,3	9,7	-2623	6214	4709	5375
Loans			-9,2	19,1	0	4500	-416	782
Accounts payable	-5,6	3,8	11,1	8,9	-2623	1714	5125	4593
Total	4,4	5,1	9,4	14,5	7323	8871	17150	28962

4.5.1.2 Vertical analysis of the balance sheet

In the assets' structure, fixed assets predominated and occupied about 55%. The largest percentage of fixed assets was occupied by real estate (above 35%), percentages of transport and long-term financial investments amount amounted to about 16% and 5% respectively. In 2015, the percentage of fixed assets slightly decreased by 49,8%, due to a decrease in the value of real estate and freight cars. Other non-current assets held a share of less than 1%, mainly they include advances to suppliers and contractors for the acquisition or creation of non-current assets. The main share in current assets belonged to accounts receivable, mainly to customers' accounts receivable. The inventory held a share of about 1%. In 2015, the growth of receivable was explained by difficulties with customers' solvency, so that the company was forced to make concessions to its customers and partners.

Table 22 Vertical analysis of assets[96]

Assets	2013	2014	2015	2016	2017
I. FIXED ASSETS	54,3%	60,4%	49,8%	52,3%	57,3%
Fixed assets	49,5%	55,2%	44,0%	47,2%	51,8%
Real estates - buildings, premises, land	31,7%	35,0%	29,2%	31,0%	35,8%
Transport, machinery, other	17,8%	20,2%	14,7%	16,1%	16,0%
Long-term financial investments	4,7%	5,0%	5,6%	5,0%	5,2%
Other noncurrent assets	0,1%	0,2%	0,2%	0,2%	0,2%
II. CURRENT ASSETS	45,7%	39,6%	50,2%	47,7%	42,7%

95   Own processed by balance sheet
96   Own processed by balance sheet

Inventories	1,1%	1,4%	0,8%	1,4%	1,3%
Account receivable	33,9%	30,4%	37,0%	34,8%	30,5%
Short-term financial investments	4,7%	3,1%	3,8%	2,7%	2,4%
Cash	6,0%	4,5%	8,2%	8,6%	8,2%
Other current assets	0,1%	0,1%	0,4%	0,2%	0,3%
Total of assets	100,0%	100,0%	100,0%	100,0%	100,0%

In the structure of balance sheet there was a high percentage of equity (70%), as can be seen from the Chart 10. It is obvious, that the company conducted a conservative policy and financed most of its assets by its own funds. And equity was formed mostly by retained earnings. The share capital occupied a share of 0,1%, the percentage of additional capital constantly decreased and in 2017 it was 1,4%. The percentage of the long-term liabilities constantly decreased from 4,7% to 0,9%. Short-term liabilities occupied a share of about 30%. For the period 2015-2017. the company was getting short-term loans to increase liquidity. The percentage of accounts payable decreased from 28,3% to 26,6% due to an increase in the share of equity.

Table 23 Vertical analysis of equity and liabilities[97]

	2013	2014	2015	2016	2017
III. EQUITY	67,0%	71,3%	69,7%	70,9%	72,5%
Share capital	0,1%	0,1%	0,1%	0,1%	0,1%
Additional capital	1,9%	1,9%	1,8%	1,6%	1,4%
Retained earnings	64,9%	69,3%	67,8%	69,1%	71,0%
IV. Long-term liabilities	4,7%	3,1%	2,5%	1,4%	0,9%
Loans	4,7%	3,1%	2,5%	1,4%	0,9%
V. Short-term liabilities	28,3%	25,6%	27,8%	27,8%	26,6%
Loans	0,0%	0,0%	2,5%	2,0%	2,1%
Accounts payable	28,3%	25,6%	25,3%	25,7%	24,5%
Total	100,0%	100,0%	100,0%	100,0%	100,0%

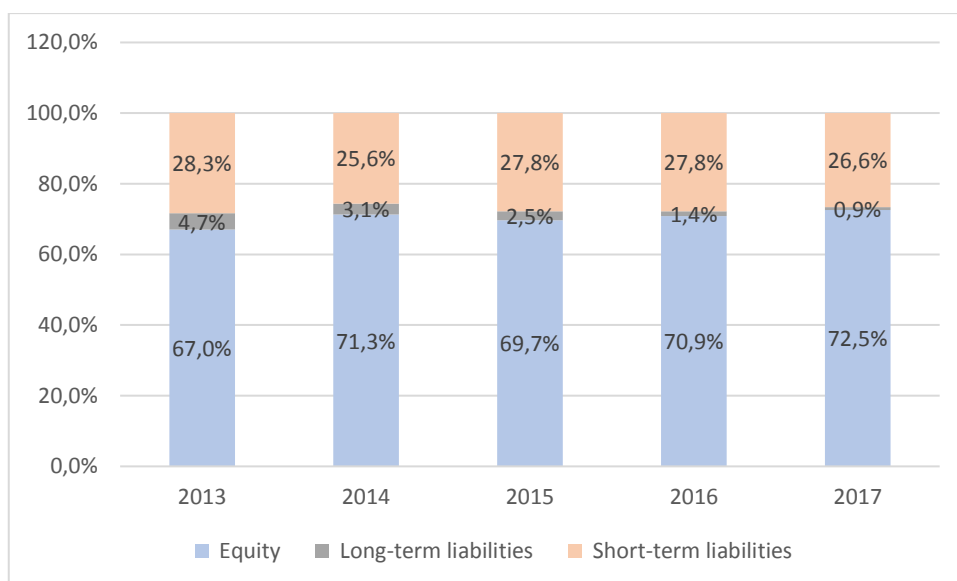[97]   Own processed by balance sheet

Chart 10 Structure of equity and liabilities[98]

4.5.1.3 Horizontal analysis of the income statement

The economic recession, sanctions, reduced imports have affected the financial results of the Byte-Transit-Continent. From 2014 to 2015, the company's net sales decreased by 9% and 4,3% respectively. Costs also reduced by 7,4% and 9,5%. Also, the financial result of the company was affected by the closure of several branches. In 2015, the cost of services increased, due to rising prices for diesel fuel, an increase in prices for imported spare parts.

Commercial costs constantly increased during the period. The growth reached the highest level in 2014 and amounted to 31,9%. The growth was associated with company's re-branding. In 2016, administrative costs sharply dropped by 30,2% due to cessation of branches, which reduced company's costs. In 2013, company's net profit significantly fell by 34,3%. For the further period, in 2015-2016, profit slightly increased by 9,7% and 5,5% respectively (or 1 193 thousand RUB and 736 thousand RUB). In 2017, due to the stabilization of the economic situation, the company's profit significantly increased by 71,4% (10 159 thousand RUB). Interest expenses included interest paid for a long-term loan, as well as interest for short-term loans 2015-2017. Interest income included interest on deposit and long-term securities. Other income and expenses showed unstable fluctuations. However, absolute changes in monetary terms were insignificant.

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[98]   Own processed by balance sheet

Table 24 Horizontal analysis of the income statement in relative and absolute changes[99]

	2014	2015	2016	2017	2014	2015	2016	2017
Net sales	-9,0	-4,3	13,8	6,3	-58142	-25430	77423	40489
Costs	-7,4	-9,5	23,6	1,2	-38954	-46683	104683	6641
Gross profit	-16,4	21,8	-22,9	36,9	-19188	21253	-27260	33848
Commercial expenses	31,9	20,8	5,7	9,9	1126	968	322	591
Administrative expenses	-13,6	24,3	-30,2	28,0	-12168	18763	-28919	18735
EBIT	-33,9	9,6	7,7	77,4	-8146	1523	1337	14523
Interest expenses	18,2	18,0	6,9	4,1	125	146	66	42
Interest income	56,5	46,7	-34,9	13,8	432	559	-612	158
Other income	29,2	-15,2	26,9	-18,9	198	-133	200	-178
Other expenses	9,5	24,2	-22,0	-18,2	167	468	-528	-340
EBT	-33,9	8,8	8,4	82,5	-7808	1335	1387	14801
Taxes	-32,2	4,9	21,3	125,1	-1384	142	651	4642
EAT	-34,3	9,7	5,5	71,4	-6424	1193	736	10159

4.5.1.4 Vertical analysis of the income statement

Company's costs accounted for about 80% of total sales. Costs included costs for operating lease, repair and maintenance, depreciation, fuel and spare parts, employees' wages. The percentage of commercial costs was 1%. The percentage of administrative costs sharply increased by 17% due to payment of arrears of employees' wages. The share of other income and expenses was insignificant and amounted to 0,1% and 0,3% respectively. The percentage of net profit remained stable at the 2% level. In 2017, the percentage increased by 3,6%.

Table 25 Vertical analysis of the income statement[100]

	2013	2014	2015	2016	2017
Net sales	100,0%	100,0%	100,0%	100,0%	100,0%
Costs	81,9%	83,4%	78,9%	85,7%	81,6%
Gross profit	18,1%	16,6%	21,1%	14,3%	18,4%
Commercial expenses	0,5%	0,8%	1,0%	0,9%	1,0%
Administrative expenses	13,8%	13,1%	17,0%	10,5%	12,6%
EBIT	3,7%	2,7%	3,1%	2,9%	4,9%
Interest expenses	0,1%	0,1%	0,2%	0,2%	0,2%
Interest income	0,1%	0,2%	0,3%	0,2%	0,2%
Other income	0,1%	0,1%	0,1%	0,1%	0,1%

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99   Own processed by income statement
100   Own processed by income statement

Other expenses	0,3%	0,3%	0,4%	0,3%	0,2%
EBT	3,6%	2,6%	2,9%	2,8%	4,8%
Taxes	0,7%	0,5%	0,5%	0,6%	1,2%
EAT	2,9%	2,1%	2,4%	2,2%	3,6%

4.5.2 Financial ratio analysis

4.5.2.1 Liquidity ratios

Liquidity ratios showed that BTC was able to fully meet its liabilities, was solvent and was able to maintain it in the event of any difficulties. In comparison with competitors, the liquidity of BTC exceeded the average competitors' liquidity ratios, but the difference was not so significant. For five years, the company has tried to maintain liquidity at one level, and therefore fluctuations of the ratios were insignificant, and the ratios have not changed much over time. However, in 2015, the liquidity reached its highest level. And based on the results of the vertical balance analysis, it could be seen, that current assets were more than short-term liabilities and increased significantly, due to accounts receivable.

Table 26 Liquidity ratios[101]

LUQUIDITY	2013	2014	2015	2016	2017	Average **BTC**	Average competitors
Current ratio	1,61	1,54	1,81	1,72	1,61	1,66	1,44
Quick ratio	1,57	1,49	1,78	1,67	1,56	1,61	1,37
Cash ratio	0,38	0,30	0,43	0,41	0,40	0,38	0,15

Values of the current liquidity ratio in 2013-2017 remained at a high level: current assets exceeded short-term liabilities by about 1,66 times. In addition, the current liquidity of BTC was also higher than the average liquidity of competitors (1,66 vs. 1.44). The quick ratio also had high values. Moreover, this ratio was not significantly different from the current liquidity ratio, that is, the company did not have a large share of inventory in its current assets. BTC was able to pay all of its liabilities from accounts receivable, short-term investments and cash. The average value of quick liquidity was also above the average of competitors for a period of 5 years. However, the average cash ratio of the company was above the average of competitors. The average value of cash ratio exceeded competitors' one by about 2 times. The company is able to meet 38% of short-term liabilities by cash and short-term investments.

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[101]   Own processed

4.5.2.2 Activity ratios

Over the period of five years activity radios decreased. The most stable was the asset turnover ratio. And the average values of ratios were lower than the average values among competitors.

Table 27 Activity ratios[102]

ACTIVITY	2013	2014	2015	2016	2017	Average **BTC**	Average competitors
Asset turnover ratio	4,0	3,5	3,2	3,3	3,2	3	4,9
Inventory turnover ratio	347,0	270,8	285,6	305,9	235,0	289	788,9
Receivable turnover ratio	12,3	10,8	9,3	9,3	9,8	10	14
Payable turnover ratio	14,3	12,8	11,8	12,1	11,7	13	10,4
Inventory turnover in days	1,0	1,3	1,3	1,2	1,5	1	0,4
Receivable turnover in days	29	33	39	39	37	35	26
Payable turnover in days	25	28	30	30	31	29	35
Cash cycle	4,0	3,5	3,2	3,3	3,2	3	-9

The average receivables turnover ratio amounted to 10 and was below the average among competitors. This may be the result of insufficiently active work to recover debts. The receivable turnover ratio in days was also quite high (35 days), and it was above the average among competitors (26 days). In addition, from 2013 to 2015, the share of overdue accounts receivable rose to 73,8%. However, in 2016-2017, the company made concessions to customers and extended the term of payment for the services provided, so the overdue accounts receivable significantly decreased.
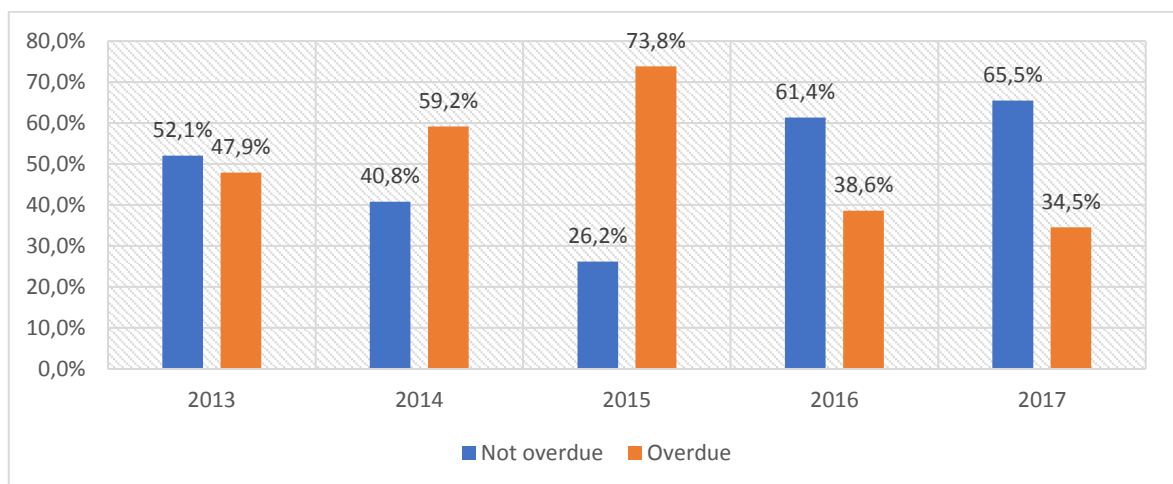

Chart 11 Structure of account receivable[103]

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102   Own processed
103   Own processed

Payable turnover ratio was also the average among competitors, the turnover period was 29 days, which was above the average by 6 days. And the payable turnover ratio was higher than the receivable turnover ratio, that is, BTC paid to its creditors more quickly than received money from debtors. The average inventory turnover ratio amounted to 289, and the turnover period was 1 day. The speed of inventory turnover was extremely high, but still lower than the average among competitors. Since BTC is not a company engaged directly in the sale of goods, this speed of turnover is justified. The company's inventory mainly consists of spare parts for cars and materials for the maintenance of business premises. The company's cash cycle was 3 days, while the average amounted to -9 days. That is, the competitors can dictate the conditions both customers (reducing the payment period for their products) and suppliers (receiving a deferred payment). The average asset turnover ratio was 3. The average among competitors was 4,9. Thus, it is clear that BTC received less revenue for every ruble invested in assets than its competitors on average. The total asset turnover ratio shows the relative efficiency of using the firm's assets to generate revenue. Based on the data, BTC operated slightly less efficiently than the similar enterprises in the industry. Taking into account the results of the previous stage of the analysis, it can be assumed that, the reason lies in excessive investments in receivables. If BTC could provide the same amount of sales while reducing the amount of receivable, its asset turnover would increase significantly.

4.5.2.3 Profitability ratios

The profitability of BTC was lower than competitors' one. Only the profitability of sales amounted to 2,7%, the average among competitors was 1.1%.

Table 28 Profitability ratios[104]

PROFITABILITY	2013	2014	2015	2016	2017	Average BTC	Average competitors
ROE	16,8%	9,9%	10,6%	10,1%	14,7%	12,4%	22,4%
ROA	14,4%	9,1%	9,5%	9,4%	14,5%	11,5%	13,2%
ROCE	20,2%	12,3%	13,2%	13,0%	19,8%	15,79%	17,3%
ROS	2,9%	2,1%	2,4%	2,2%	3,6%	2,7%	1,1%

The return on sales was on average higher than competitors' one. That is, the company receives more profit (2,7%) per each ruble of sold products. In generally, the return on sales had stable fluctuations over the period 2016-2017, which could be assumed as a positive trend. In 2017, the return on equity of the company was 14,7%. The reason for the rapid growth was the increase in net profit. However, the average return on equity

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[104] Own processed

was 12,8%, while the average among competitors was 22,4%. That is, the return on BTC's equity was lower than competitors' one. However, the high profitability of competitors may also mean that these companies are characterized by high financial risk, while BTK was more financially stable.

Table 29 Du Pont ROE[105]

Du Pont	2013	2014	2015	2016	2017	Average BTC	Average competitors
ROS	2,9%	2,1%	2,4%	2,2%	3,6%	2,6%	1,1%
Asset turnover	4,0	3,5	3,2	3,3	3,18	3,4	4,9
Financial leverage	1,5	1,4	1,4	1,4	1,38	1,4	3,58

According to Du Pont formula, the fluctuations of return on equity was due to changes in the return on sales, in most cases. So, in 2017 the return on equity increased due to the growth of ROS to 3,6%. Du Pont's methodology also helps explain why the company's ROE was lower than competitors' one. Although company's return on sale was higher than the average among competitors (2,7% vs. 1.1%), lower asset turnover and lower financial leverage led to lower ROE. On this basis, it can be assumed that the main reason for this situation was a larger investment in assets, compared with other companies, to provide the same volume of sales. Also, BTC company prefers to use own funds, which have higher cost than borrowed one, by that, the company doesn't use the capabilities of financial leverage. This situation reflected the company's return on assets. The return on assets was 11,5%, the average return among competitors was 13,2%. That is, the assets of BTC generated less money than the assets of competitors, even so company's return on sale was higher. The higher return on sales with a lower return on assets confirms that the company is forced to raise a larger amount of assets than the average to obtain one ruble of sales. The average return on capital employed was 15,79%, while the same ratio for competitors was 17,3%. BTC did not use its capital as efficiently as its competitors.

4.5.2.4 Debt ratios

In general, for 2013-2017 the debt ratios of BTC were stable. It is worth noting that the average debt ratios were lower than the ratios among competitors.

Table 30 Debt ratios[106]

Debt ratios	2013	2014	2015	2016	2017	Average BTC	Average competitors
Debt to equity ratios	0,49	0,40	0,43	0,41	0,38	0,42	1,51

[105]   Own processed
[106]   Own processed

Debt to total assets ratio	0,33	0,29	0,30	0,29	0,27	0,30	0,66
long term debt to total capitalization	0,07	0,04	0,03	0,02	0,01	0,03	0,24
interest coverage ratio	34,94	19,55	18,16	18,29	31,18	24,42	10,78

For five years the debt to equity ratio was in the range of 0,38 – 0,49. The average value of the ratio was 0,42. That is, BTC's creditors provide 42% of the financial resources for each ruble invested by the owners. The reverse situation developed among competitors: borrowed funds was 1,5 times larger than own. Compared to competitors, the financial risk of BTC was lower and it decreased over five years. The debt to total assets ratio also showed stable dynamics in the range of 0,27-0,33 for five years. On average, 30% of the company's total assets were financed by borrowed funds. For competitors, the value of the debt ratio was higher and amounted to 0,66. That is, only 34% of assets were financed from own funds.

According to the long-term debt to total capitalization ratio, the share of long-term debt in the total amount of long-term funds was on average only 3%. The largest part of long-term funds was equity. The average value among competitors was higher and amounted to 0,24. Interest coverage ratio showed extremely unstable dynamics. In general, the ratio was 24,42, which indicates the company's ability to meet its interest liabilities. Among competitors the value of the ratio was lower and amounted to 10,78. According to the debt ratios, BTC had low financial risk, since it preferred financing by own funds. However, this may signal a problem in the use of borrowed funds or difficulties in obtaining them. Also, the low share of borrowed funds leads to a decrease in the profitability of the equity. As mentioned above, the return on equity of BTK was much lower than competitors' one.

4.5.3 Working capital

For the period 2013-2017, the values of net working capital have not undergone significant changes. During the period, the NWC's values remained positive, which indicates the excess of current assets over short-term liabilities. That is, some of the current assets were financed by long-term funds. The greatest increase in net working capital was ensured in 2015, when accounts receivable increased significantly. In the following years, NWC slightly decreased. Nonfinancial working capital was lower than NWC, as short-term financial investments occupied a certain share in current assets. Over the period, net working capital and non-financial working capital had approximately equal values.

Table 31 Working capital[107]

|	2013	2014	2015	2016	2017
Inventory	1833	2511	1430	2756	3038
Accounts receivable	56354	52898	67642	69477	69852
Short-term investments	7768	5344	6950	5417	5499
Accounts payable	47152	44529	50743	55452	60827
Net working capital	18803	16224	25279	22198	17562
WC/Sales	0,03	0,03	0,04	0,03	0,03
WC/Assets	0,11	0,09	0,14	0,11	0,08
NCWC	11035	10880	18329	16781	12063
NCWC/Sales	0,02	0,02	0,03	0,03	0,02
NCWC/Assets	0,07	0,06	0,10	0,08	0,05
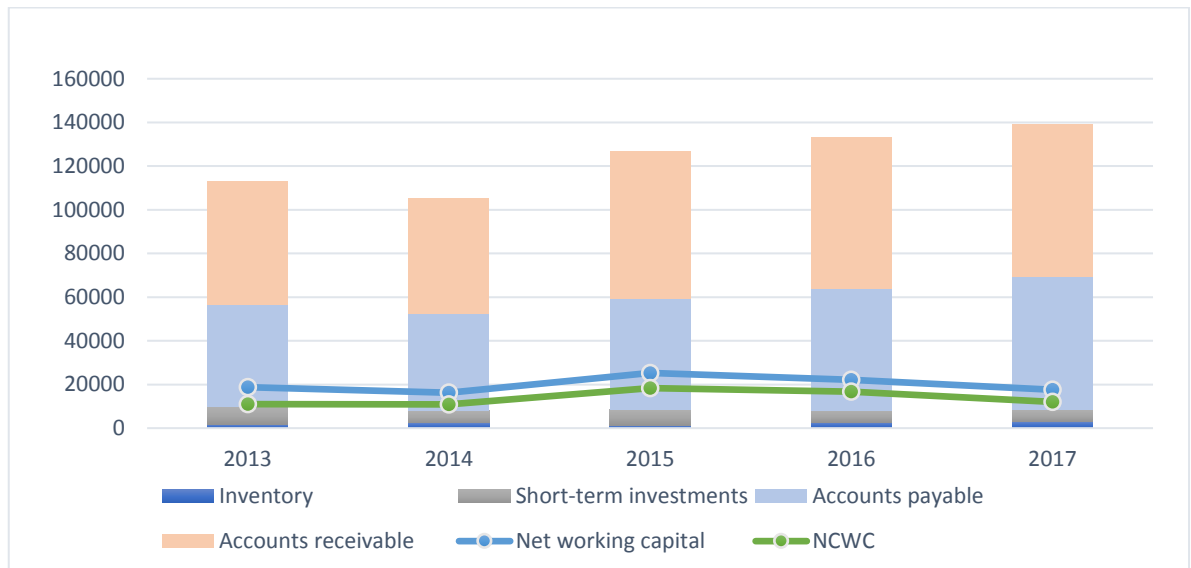
Chart 12 Fluctuations of working capital parts[108]

Net working capital took a share in the company's revenue of approximately 3%, non-financial capital held about the same share. The same situation was observed with a share in assets. The share of net capital was approximately 11%, while the share of non-financial capital was 7%. High values of net working capital are more desirable for the company's management that can use the current capital for its business, even if it covers all short-term liabilities. However, high values of NWC are less favorable to the company's owners because it reduces the return on invested capital, reduce the free cash flow and hence the company's value.

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[107]   Own processed
[108]

Table 32 Working capital need[109]

	2013	2014	2015	2016	2017
Asset turnover ratio	1,0	1,3	1,3	1,2	1,5
Inventory turnover ratio	29	33	39	39	37
Receivable turnover ratio	25	28	30	30	31
Cash cycle	5	7	9	10	8
Average daily expenses	1440	1339	1209	1501	1520
WC need	7564	8979	11297	14821	11595
Overwhelming NWC over NWC's need	11239	7245	13982	7377	5967

BTC had more net working capital than it required. The average working capital needs was about 6 000 thousand RUB, in reality the working capital was 14 000 thousand rubles. However, the excess is not so even over the period. The greatest difference between the working capital needs and real value was observed in 2013-2015. In 2016-2017 years, the company needed 8 days before it had received money for the services provided. The slowdown in the financial cycle contributed to the growth of the working capital needs, but the difference between the real value and the working capital needs was reduced.

4.5.4 Bankruptcy prediction models

During the period, Z score of the company was above the top line, which confirmed the financial stability of the company and the low probability of its bankruptcy in the coming years. In 2014-2016 years the value of the indicator decreased and remained at the level of 4,3. The high value of Z score was primarily influenced by large share of equity and low debts.
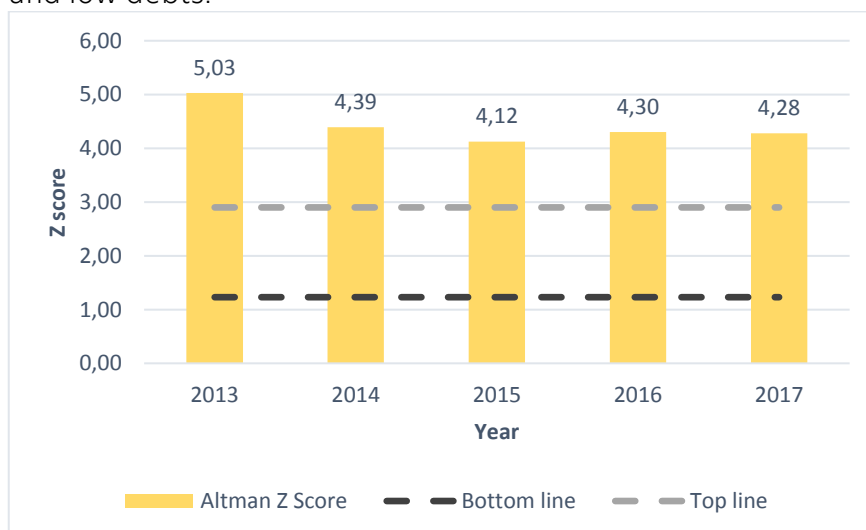

Chart 13 Altman Z score

The results of the analysis using the Altman model were also confirmed by the results of the Saifullin-Kadykov model. Values, calculated by this model, were also higher than the normative value. However, from 2015 values slightly decreased, which may indicate a possible further decline in the financial stability of the company.
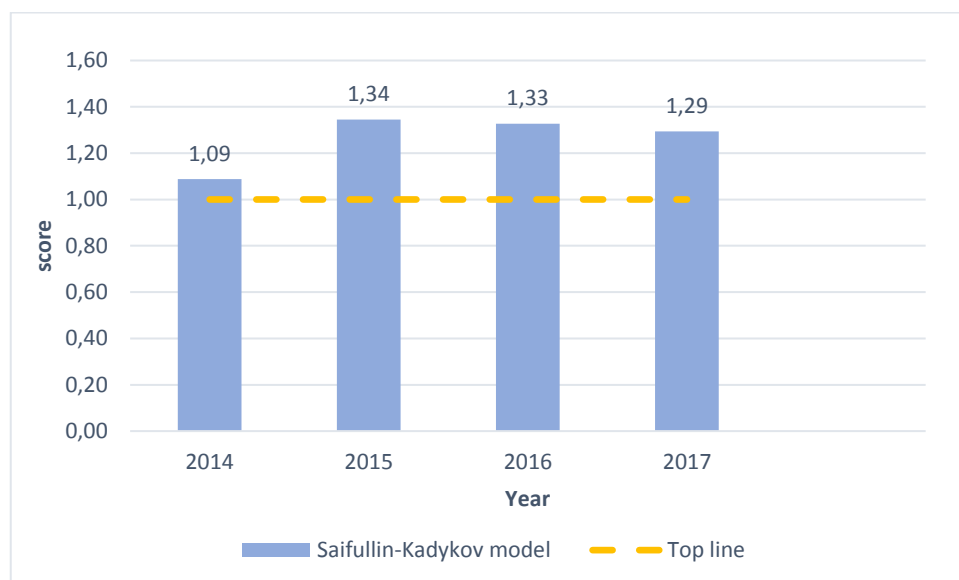

Chart 14 Saifullin – Kadykov score

4.6 Financial plan

The financial plan was being developed for a period of five years, specifically for the period from 2018 to 2022. This plan includes income statement and balance sheet forecasts. Data for financial plan was based on the results of strategic and financial analysis. For the financial statements forecast, the percentage of revenue method was applied.

4.6.1 Income statement forecast

The forecast of the income statement was based on forecast of the company's net sales. The results of the sales forecast were presented in the strategic analysis. Forecasted net sales is shown in the table. Since 2022, the net sales growth rate is expected at 1,7%.

Table 33 The sale growth rate forecast for 2018-2022[110]

	2018	2019	2020	2021	2022
Sales, thousand RUB	713 594	746 918	821 087	893 343	933 543
Growth rate, %	0,0483	0,0467	0,0993	0,088	0,045

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[110]   Own processed

Table 34 The income statement forecast for 2018-2022[111]

	2018	2019	2020	2021	2022
Sales	713594	746918	821087	893343	933543
Costs	585 147	612 473	673 292	732 541	765 506
Gross profit	128447	134445	147796	160802	168038
Commercial expenses	7136	7469	8211	8933	9335
Administrative expenses	85631	89630	98530	107201	112025
EBIT	35680	37346	41054	44667	46677
Interest expenses	1055	854	655	532	322
Interest income	1427	1494	1642	1787	1867
Other income	765	765	765	765	765
Other expenses	1532	1532	1532	1532	1532
EBT	35285	37219	41275	45155	47455
Taxes	7057	7444	8255	9031	9491
EAT	*28228*	*29775*	*33020*	*36124*	*37964*

After an economic recession and decreased financial results, BTC is striving to improve its financial performance to the pre-crisis level. In this regard, it is expected that the share of costs will decrease to 82% in the next five years. Also in 2018-2020 years, it is planned to pay off long-term and short-term loans. The values of loans will be decreased for the next years. The interest rate of loans is about 19%. Interest income from long-term and short-term investments during the previous periods was stable, their share in the net sales did not exceed 0,1%. In this regard, it is expected that these dynamics will continue in subsequent periods. The percentage of other income and expenses was insignificant; thus, these items don't play important role in generating future profit. So, their value will remain constant. During the planned period net profit will constantly grow. The average growth rate of net profit will be 9% annually, in 2022 the net financial result is expected at the level of 38 0000 thousand RUB.

4.6.2 Balance sheet forecast

Below is a shortened version of the forecasted balance sheet. During the planned period, the total amount of assets and liabilities will grow to 412 662 thousand RUB, almost twice compared to 2017. The growth of assets was justified by the growth of fixed assets, the average growth rate of which for the planned period is expected to reach 15%. The company's investment policy will focus on the growth of real estate and on expansion of vehicle fleet. The company plans long-term investments in the construction of new terminals. It is expected that investment will grow and their share in sales will increase by 3%.

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[111]   Own processed

In current assets, inventory will increase due to the expansion of the company's fleet. Their share in the sales will be constant and amount to 1%. Accounts receivable will occupy the largest share in current assets. However, the company tries to reduce the amount of accounts receivable and increase its turnover. Due to the increase in sales, receivables will also grow (about 5% per year). Short-term investments in deposits are expected at 0,8% of revenue annually. As for equity and liabilities, the share and additional capital will remain unchanged. Growth of euqity will be supported by growth of retained earnings. Long-term loans are planned to be paid during the following 2018-2022. Further loans are not planned. The same is true for short-term loans. Accounts payable will also grow constantly. In general, accounts payable will grow twice, in 2022 its value will be 78 995 thousand RUB. Despite the faster growth, the amount of accounts payable will still be lower, compared to accounts receivable.

Table 35 Balance sheet forecast[112]

	2018	2019	2020	2021	2022
I. FIXED ASSETS	147001	172538	202954	235903	268973
Fixed assets	124311	145074	175528	207523	242461
Real estates - buildings, land	88631	107728	129474	153736	182166
Transport, machinery, other	35680	37346	46054	53787	60295
Long-term financial investments	22690	27464	27426	28380	26512
Other noncurrent assets	587	633	675	735	768
II. CURRENT ASSETS	112082	118879	127353	138616	143689
Inventories	4281	5976	7390	6603	7036
Account receivable	80007	83646	87654	89334	92534
Short-term financial investments	5709	6083	6569	7147	7468
Cash	21408	22408	24961	34684	35765
Other current assets	677	766	779	848	886
Total	259082	291416	330307	374519	412662
III. EQUITY	194162	223937	256957	293081	331045
Share capital	200	200	200	200	200
Additional capital	3235	3235	3235	3235	3235
Retained earnings	190727	220502	253522	289646	327610
IV. Long-term liabilities	1602	1049	1067	1065	979
Loans	1602	1049	700	688	587
Other long-short liabilities	0	0	0	0	0
V. Short-term liabilities	63318	66430	72283	80373	80638
Loans	4995	4482	3572	2801	1643

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[112]   Own processed

Accounts payable	58323	61948	68711	77572	78995
Total	259082	291416	330307	374519	412662

4.6.3 Forecast financial analysis

To analyze the prospects of the company, it is appropriate to make a concise financial analysis of forecast financial statement. For estimating the future financial position of the company, some of the basic profitability, liquidity, activity and debt ratios are selected. The selected ratios of the company are summarized in the Table 36.

Table 36 Forecast financial analysis [113]

Financial ratios	2018	2019	2020	2021	2022
PROFITABILITY					
ROE	14,5%	13,3%	12,9%	12,3%	11,5%
ROA	10,9%	12,8%	12,4%	11,9%	11,3%
ROCE	18,2%	16,6%	15,9%	15,2%	14,1%
ROS	4,0%	4,0%	4,0%	4,0%	4,1%
ACTIVITY					
Asset turnover	2,9	2,7	2,6	2,5	2,4
Inventory turnover	195,0	145,6	122,9	127,7	136,9
Receivable turnover	9,5	9,1	9,6	10,1	10,3
Payable turnover	11,5	11,5	11,8	11,7	11,6
Inventory turnover in days	2	2	3	3	3
Receivable turnover in days	38	39	38	36	35
Payable turnover in days	31	31	30	31	31
LIQUIDITY					
Current ratio	1,77	1,79	1,76	1,72	1,78
Quick ratio	1,70	1,70	1,66	1,64	1,69
Cash ratio	0,43	0,43	0,44	0,52	0,54
DEBT					
Debt to equity ratio	0,33	0,30	0,29	0,28	0,25
Debt to total assets ratio	0,25	0,23	0,22	0,22	0,20
Long term debt to total capitalization	0,008	0,005	0,004	0,004	0,003
Interest coverage ratio	33,8	43,7	62,7	84,0	145,0

In the planned period, the company's profitability is not expected to increase significantly compared to the previous period. It is assumed that the efficiency of company's operating activity will remain at the level of 2017 year. The return on equity and assets

[113]   Own processed

will slightly decrease, due to a faster growth in equity and assets compared to the sales. The return on sales will be stable and will reach 4%. The assets turnover will decrease slightly due to a decrease in inventory turnover. Inventory turnover in days will grow to 3 days, but still it will be quite high. The receivable and payable turnover ratios will slightly change and in 2020, will reach the pre-crisis level. The liquidity of the company will also increase. All liquidity ratios will exceed the average among competitors. For example, the current liquidity will grow from 1,61 in 2017 to 1,77 in 2018. High values of liquidity ratios are explained by extremely unstable economic and political situation. The company is forced to accumulate liquid assets for unforeseen cases. On the contrary, the debt ratios will decrease. The company intends to continue its conservative policy and finance its assets by its own funds. The share of short-term and long-term borrowed funds will gradually decrease. By 2020, it is expected that the company will almost pay off long-term loans, which will lead to an increase in the interest coverage ratio.

5 COMPANY VALUATION

The company "Byte-Transit-Continent" for the last 5 years, including the crisis 2013-2015, consistently showed positive financial results. The company operates on the market for a long time, and according to the information available on the market, it is possible to forecast its future cash flows. These prerequisites allow to apply the discounted cash flow (DCF) method, which will be the main valuation method, to estimate the value of the company. Based on the analysis of the road freight shipping market development and the increasing in sales of the company after 2015, a conclusion was made about further systematic development of Byte-Transit-Continent LLC, which will be expressed in a constant increase in sales and cash flows.

To estimate the company's value, the present and terminal value will be calculated. The present value will be determined for forecast five years, the terminal value will be calculated beyond the forecast period. To achieve more detailed results, the valuation will be carried out by other methods, such as the economic added value method. As a complementary method for determining the value of the company, the company transaction method with multiplies is chosen.

5.1 Valuation by DCF method

5.2.1 DCF entity

The DCF method was chosen as the main method for estimating the value of BTC. This method involves the calculation of free cash flow FCFF for the owners and creditors of the company. To calculate the cash flow for the period 2018-2022, first of all, the EBIT after the tax is calculated. The amount of income tax is 20%. Then, depreciation is added to the profit after tax; next, the received value is reduced by the growth of net

working capital and investment in fixed assets. During the planned period, the company's free cash flows grew slightly, which was supported by profit growth.

Table 37 Calculation of Free Cash Flow to firm for 2018-2022 (thousand RUB)[114]

FCFF to firm	2018	2019	2020	2021	2022
EBIT(1-T)	28 544	29 877	32 843	35 734	37 342
+Depreciation	7 850	10 457	11 495	14 293	14 937
-Changes in WC	11 821	3 685	2 621	3 173	4 809
-Capital expenditure	8 181	15 080	18 921	18 656	18 133
FCFF	16 391	21 568	22 797	28 199	29 336

To determine the present value, it is necessary to calculate the discount rate. In this case, the rate will be calculated on the basis of the weighted average cost of capital, for the determination of which it will be necessary to calculate the cost of equity and debt.

The cost of equity is calculated using the CAPM model. The following parameters are determined for the calculation: risk-free rate, beta coefficient and market premium. Also for calculations it is necessary to know the ratio of debt and equity, which is calculated using of data from the forecast balance sheet. The Eurobonds rate of return is taken as a risk-free rate, as these bonds are considered to be the main source of future loans in foreign currency, and Russian government pays priority attention to paying interest on them. Among all securities, emitted by government, the Eurobonds are being issued in large quantities and information on their yield is easy to obtain. The average yield of these bonds on 10.05.2018 was 3,8489% according to the information agency RusBonds[115]. The value of the beta coefficient and the market premium were taken from the website damodaran.com. Average unlevered beta[116] in the Trucking industry was 0,48, this beta assumes that the enterprise has no debts. Since the BTC had some debt, it is necessary to calculate levered beta. According to the Damodaran site, the market premium[117] was 7.96% for the Russian Federation. In addition, some adjustments should be made, that is, to add other premiums for additional risks, such as for company size and other company's risks (customer, product and territorial diversification, quality of management). The values of premiums are determined by expert method. The values of all parameters are shown in the table below. The cost of equity amounts to 17,7%.

[114]   Own processed
[115]   Government bonds. In: RusBonds [online]. [vid. 10.05.2018]. Available at: http://www.rusbonds.ru/cmngos.asp
[116]   Damodaran, Aswath. Levered and unlevered betas by industry. In: Damodaran online, 2017. [vid. 10.05.2018]. Available at: http://pages.stern.nyu.edu/~adamodar
[117]   Damodaran, Aswath. Risk premiums for other market. In: Damodaran online, 2017. [vid. 10.05.2018]. Available at: http://pages.stern.nyu.edu/~adamodar

Table 38 Calculation of the discount rate for equity by CAPM model[118]

CAPM	2018	2019	2020	2021	2022
rf					3,85%
Beta unlevered					0,48
D/E	0,03	0,02	0,02	0,01	0,01
beta levered	0,49	0,49	0,49	0,49	0,48
rm-rf	7,96%	7,96%	7,96%	7,96%	7,96%
company size	4%	4%	4%	4%	4%
diversification	3%	3%	3%	3%	3%
management	3%	3 %	3%	3%	3%
re	17,77%	17,75%	17,73%	17,71%	17,70%

Costs of debts (rd) are estimated on the basis of the ratio of interest expense to long-term bank loans. The calculation of the weighted average cost of capital is shown in Table. Cost of debts amounts to about 15% (high lending rate is typical for Russian economic realities; the average bank rate is 17%). The average WACC is about 17,6%.

Table 39 Calculation of the WACC[119]

WACC	2018	2019	2020	2021	2022
D	6 597	5 531	4 639	3 866	2 622
E	194 162	223 937	256 957	293 081	331 045
C	200 760	229 468	261 596	296 947	333 667
1-t	80%	80%	80%	80%	80%
re	17,77%	17,75%	17,73%	17,71%	17,70%
rd	16,0%	15,4%	15,3%	15,2%	14,4%
WACC	17,61%	17,62%	17,63%	17,64%	17,65%

Calculation of the company's value is divided into two stages. At the first stage, future cash flows are calculated for the forecast period 2018-2022 and are discounted using the WACC. As the company was estimated to a certain date on 10/05/2018, the cash flow for 2018 needs to be adjusted to this date. The present value of the company first stage is equal to the amount of all cash flows and is 67 648 thousand RUB.

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[118]   Own processed
[119]   Ibid.

Table 40 Calculation of the present value for the 1. stage[120]

1. stage	10.05.2018	2018	2019	2020	2021	2022
FCFF	0,644	10 553	21 568	22 797	28 199	29 336
Discount		1,110	1,306	1,536	1,807	2,126
Discounted FCFF		6 876	16 519	14 844	15 608	13 802
Present value of 1 stage						67 648

At the second stage, the company's value is calculated beyond the forecast period. To estimate the terminal value, it is necessary to know the constant growth rate of the cash flow (g) and the value of the discount rate beyond the forecast period. It is assumed that the constant growth rate will be 1,7%, as well as the market growth rate, which was calculated in the strategic analysis. The discount rate will be equal to the rate for 2022, that is, 17,65%. The company's value beyond forecast period will be 80 592 thousand RUB.

Table 41 Calculation of the present value for the 2. stage by DCF entity[121]

2. stage	Beyond 2022
FCFF	29 835
Discount rate	17,65%
Growth rate	1,7%
Present value of 2 stage	88 021

The amount of the present value of the first and second stages is the company's value with the debts' value, that is, gross value. Net value of the company is gross value without value of the debts. The final gross value for the company's owners is 155 669 thousand RUB to 10.05.2018. The net value is 148 825 thousand RUB.

Table 42 The company's value to 10.05.2018 by DCF entity[122]

The company's value	thousand RUB
Value of 1 stage	67 648
Value of 2 stage	88 021
Gross value	155 669
Value of the debts	6 597
Net value	148 825

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[120]   Own processed
[121]   Lbid.
[122]   Lbid.

5.2.2 DCF equity

DCF equity method involves calculating the value of cash flows generated only for the owners of the firm (FCFE), in other words, applying this method, the equity value is calculated directly.

The FCFE differs from the cash flow for all interested parties (FCFF) in the amount of loan payments. That is, these payments need to be subtracted from the amount of annual FCFF. Calculation of cash flow for owners is presented in the table.

Table 43 Calculation of Free Cash Flow to equity for 2018-2022 (thousand RUB)[123]

FCFE to equity	2018	2019	2020	2021	2022
EBIT(1-T)	28 544	29 877	32 843	35 734	37 342
+Depreciation	7 850	10 457	11 495	14 293	14 937
-Changes in WC	11 821	3 685	2 621	3 173	4 809
-Capital expenditure	8 181	15 080	18 921	18 656	18 133
-Interest payments	-247	-1 067	-1 259	-783	-1 259
FCFE	16 144	20 501	21 539	27 416	28 077

This method for estimating the company's equity value also involves two stages. At the first stage, cash flows must also be discounted. The discount rate equals to cost of equity, which is calculated by the CAPM method. The average discount rate is 17,7%. Since the company's value is determined to specific date on 10.05.2018, the cash flow for 2018 needs to be adjusted to this date. Thus, the present value of cash flows at the first stage is 64 703 thousand RUB.

Table 44 Calculation of the present value for the 1. Stage by DCF equity[124]

	10.05.2018	2018	2019	2020	2021	2022
FCFE	0,644	10 394	20 501	21 539	27 416	28 077
Discount		1,111	1,308	1,540	1,813	2,134
Discounted FCFE		6 767	15 671	13 985	15 122	13 159
Present value of 1 stage						64 703

The second stage assumes that the free cash flow to equity is calculated beyond the forecast period. The growth rate remains the same, that is, 1,7%. The discount rate is taken for the last year 2022 and is 17,7%. The present value of cash flows beyond the forecast period is 83 667 thousand RUB.

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[123]   Own processed
[124]   Own processed

Table 45 Calculation of the present value for the 2. Stage by DCF equity[125]

2. stage	Beyond 2022
FCFE	28 555
Discounted rate	17,7%
Growth rate	1,7%
Present value of 2 stage	83 667

The net value of the company is equal to the amount of the cash flows for two stages and amounts to 148 370 thousand RUB. The gross value of the company, taking into account the borrowed capital, is 95,350 thousand rubles.

Table 46 The company's value to 10.05.2018 by DCF equity[126]

The company's value	thousand RUB
Value 1 stage	64 703
Value 2 stage	83 667
Gross value	155 214
Value of the debts	6 597
Net value	148 370

5.2 Valuation by EVA method

The EVA method considers calculating the company's gross value. So, this method is chosen for comparison to DCF entity method. To determine the company's value by this method, it is necessary to calculate the annual EVA's values from 2018 to 2022. Firstly, EBIT after tax is determined and then it is reduced by the cost of the invested capital. The cost of the invested capital is determined by multiplying the capital invested (C) by the weighted average cost of capital (WACC). The value of capital invested is equal to the amount of equity and debts. Calculation of WACC was presented in chapter above. The determining annual EVA values is shown in the table. As it can be seen from the table, from 2018 to 2022 EVA was negative. It means that the cost of capital received from investors exceeded the profit received over the period. In other words, return on capital employed (ROCE) was lower than cost of capital (WACC). It means, that company inefficiently uses its capital.

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125   Own processed
126   Lbid.

Table 47 Calculation of EVA for 2018-2022 (thousand RUB)[127]

EVA	2018	2019	2020	2021	2022
EBIT(1-T)	28 544	29 877	32 843	35 734	37 342
NOA	172 361	195 921	227 601	261 420	299 687
WACC	0,176	0,176	0,176	0,176	0,176
EVA	-1 811	-4 637	-7 281	-10 379	-15 543

The company's value is determined through two stages. In the first stage, future EVA values are discounted to the current value. Since the value is calculated to 10.05.2018, it is necessary to adjust the value of EVA and the discount rate in 2018 to this valuation date. The amount of EVA discounted values is the present value for the first stage. It amounts to − 22 400 thousand RUB.

Table 48 Calculation of the present value for the 1. Stage by EVA

	10.05.2018	2018	2019	2020	2021	2022
EVA	0,644	-1 166	-4 637	-7 281	-10 379	-15 543
Discount		1,110	1,306	1,536	1,807	2,126
Discounted EVA		-1 050	-3 552	-4 741	-5 745	-7 313
Present value of 1 stage						-22 400

To determine the terminal value, it is necessary to know the constant growth rate and discount rate beyond the forecast period. That is, the calculation is based on the same sequence of actions, which is considered by DCF method. The terminal present value for the second stage is − 46 636 thousand RUB.

Table 49 Calculation of the present value for the 2. Stage by EVA[128]

2. stage	Beyond 2022
EVA	-15 807
Discounted rate	17,65%
Growth rate	1,7%
Present value of 2. stage	-46 636

The company's gross value amounts to 85 703 thousand RUB and is obtained by adding up the present value of the first and second stages and the value of the invested capital to the valuation date. The net value amounts to 78 859 thousand RUB.

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[127]   Own processed
[128]   Lbid.

Table 50 The company's value to 10.05.2018 by EVA[129]

The company's value	thousand RUB
EVA 1 stage	- 22 400
EVA 2 stage	-46 636
Present value of EVA	-69 036
Invested capital	154 739
Gross value	85 703
Value of the debts	6 844
Net value	78 859

5.3 Valuation by Company Transaction method

The Company Transaction method (one of the methods of market approach) is chosen as a supplementary valuation method. The reason for choosing this method is that the results of the discounted cash flow methods should be verified through comparison to the results of other methods. Information on comparable companies traded on the capital market is not publicly accessible within the framework of Russian realities. Thus, the values of multiplies, which is necessary to estimate company's value, were obtained on Damodaran website. Two multipliers were selected for the valuation, such as:

- Market value of invested capital/EBIT,
- Market value of invested capital/EBITDA.

The values of the multiplies amount to 20,66 for EV/EBIT and 11,15 for EV/EBITDA[130]. To obtain the company's value by transaction method, it is necessary to multiply the corresponding indicators, which are EBIT and EBITDA, by the multipliers. The obtained value is the company's gross value. To determine the company's net value, it is necessary to deduct the value of the long-term and short-term debts to the valuation data.

Table 51 Calculation of the company's value by transaction method[131]

	EV/EBIT	EV/EBITDA
Corresponding indicator, thousand RUB	33 274	41 214
Multipliers	20,66	11,15
Gross value	687 432	459 531
Debts	6 844	6 844
Net value	680 588	452 687

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[129]   Own processed

[130]   Damodaran, Aswath. Value/EBIT & Value/EBITDA Multiples by Industry Sector. In: Damodaran online, 2017. [vid. 10.05.2018]. Available at: http://pages.stern.nyu.edu/~adamodar

[131]   Own processed

The gross value calculated by EV/EBIT and EV/EBITDA is 687 432 and 459 531 thousand RUB respectively. The net value amounts to 680 588 and 452 687 thousand RUB respectively. Since Russian capital market is not effective and there are almost no companies, which trade on the capital market and issue shares, the method is used only to compare results, not as the main method for determining the value of the company

5.4 Methods' comparison

Three valuation methods were selected to determine the company's value, such as the DCF method, EVA method and company transaction method. The final values are shown in the Chart 15.
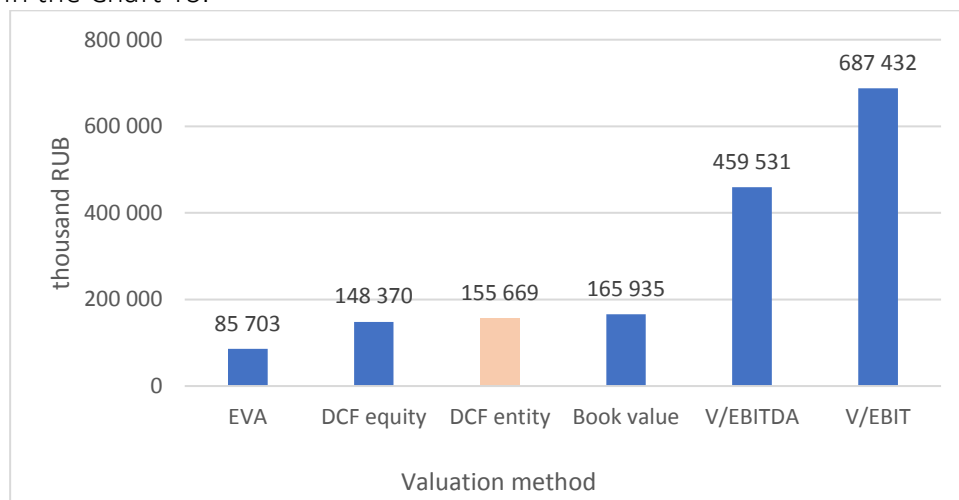
Chart 15 Company's values by different methods

The book value is the value of equity from the balance sheet to the valuation date. As is shown in the Chart, the highest values were obtained by company transaction method. The difference is significant. For example, the value calculated by multiplier V/EBIT is almost three times higher than the value determined by the main method DCF entity. It is worth noting that the book value is higher than the values obtained by methods DCF equity and DCF entity. It means that company operates inefficiently and does not generate sufficient cash flows. This statement can be confirmed by low company's value calculated by EVA method. As it has been said above, for the forecast period EVA had negative values due to lower return on equity compared to WACC. Also, company's return on equity was lower than competitors' one. That is, Byte-Transit-Continent does not generate sufficient profit for company's owners. The operational inefficiency of the company can serve as a reason for its sale and company can be purchased at a price below the book value.

Nevertheless, company's value calculated by DCF entity method is the basic value, since it meets the goals set in this paper. During the negotiation for company's selling price, the company's value determined by DCF entity method will act as a starting point. Thus, company's value obtained by DCF entity method can be considered as final result.

> The market value of Byte-Transit-Continent by DCF entity to the valuation date 10th May 2018 amounts to 155 669 thousand RUB

5.5 Sensitivity analysis

Sensitivity analysis was carried out to determine degree of influence of company value factors. The main factors of company value are those, which have a direct impact on the future cash flows, such as sales growth rate, costs, capital expenditure, net working capital and the discount rate. As a dependent quantity, company's value calculated by DCF entity method was chosen. The factors varied in the [-10%; +10%] range. It is worth to noting, that sensitivity analysis assumes that change in one factor does not entail the change in interdependent factors. That is, in practice, increase in the sales entails increase in the costs. However, within the framework of sensitivity analysis, this does not happen.

Table 52 Sensitivity analysis[132]

Factors of company value	Changes in value factors					
	-10%	-5%	-1%	1%	5%	10%
Growth rate	-14,4%	-7,6%	-1,5%	1,2%	7,7%	15,4%
Costs	216,4%	108,2%	21,6%	-21,7%	-108,3%	-217,2%
Capital Expenditure	6,5%	3,2%	0,6%	-0,6%	-3,2%	-6,5%
NWC	1,8%	0,9%	0,2%	-0,2%	-0,9%	-1,8%
WACC	13,6%	6,4%	1,2%	-1,2%	-5,7%	-10,8%

As shown in the Table, costs factor has the highest degree of influence on company's value. The fluctuations of dependent quantity are significant. For example, the increase in the costs by 1% lead to decrease in value by 21,7%. If the costs grow by 10%, company's value sharply declines and becomes negative. Degree of influence of the capital expenditure and the growth of net working capital compared to the costs is insignificant. The increase in the capital expenditure by 1% lead to decrease in value only by 0,6%. The sales growth rate and the discount rate influence on the company's value almost with equal force. If the sales growth rate increase by 5%, the value increase by 7,7%. Influence of the discount rate is the exact opposite. The increase in the discount rate by 5% lead to decrease in the value by 5,7%. Thus, if the management intends to rapidly increase the company's value, it should cut the costs or increase sales. The discount rate also has strong influence on the value, however change in this factor more depends on external environment than on company's management.

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[132]   Own processed

5.6 Ways to increase the company's value

From the previous chapter, it was obvious that management can increase company's value by increasing in sales or by cutting costs. The increase in sales is a rather problematic way in view of the high competition in the market and the unstable, hard predictable economic and politic situation. Also, BTC company operates in the region with lower demand compared to central districts, where competitors have larger market share. In addition, the company does not have significant competitive advantages and have no market power to become market leader in Siberian districts. So, the company still does not have the opportunity to significantly increase its sales. Thus, the cutting costs is more reasonable way in this case.

Reduction of costs is possible due to cutting repair and maintenance expenses, as well as cutting expenses for fuel and spare parts. The cutting of labor expenses is currently impossible, since it implies a reduction in staff, which can lead to decline in labor productivity and quality of services provided. Operating leasing expenses are largely dependent on the conjuncture of the leasing market, the policy of the lessor and the terms of the leasing agreement. At the moment, the company has a reliable leasing partner, the terms of the contract with which are more than acceptable. Therefore, no special changes operating leasing expenses are expected. The structure of costs of sales is shown in the Table 53.

Table 53 Structure of costs of sales, on average over five years[133]

Expenses	Share
Operating leasing expenses	43,4%
Repair and maintenance expenses	30,3%
Depreciation	1,3%
Salary expenses	15,0%
Fuel and spare parts expenses	8,9%
Other expenses	1,1%

Reduction of repair and maintenance expenses is possible due to the regular and timely organization of vehicle fleet maintenance. For example, to reduce repair expenses for tire wear, it is necessary to follow all the rules of technical operation, as well as to regulate the running gear of the freight vehicle, to maintain normal pressure corresponding to the load, to diagnose and repair the suspension components of the vehicle. It is worth to noting that BTC, seeking to reduce repair expenses, neglects regular maintenance. In general, own freight vehicles, are operated as long as they are able to go, and only in case of complete inoperability are put in the service center. With this

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[133]   Own processed

approach, repair expenses reach a quite large amount. It is possible to avoid such a situation, as was noted above, due to a periodic maintenance, which allows to find malfunctions on time, to predict their development and to eliminate them at the initial stage. The regular maintenance will reduce repair and maintenance expenses in the range from about 1% to 5% or, in other words, will save 5 million RUB annually.

The most important direction to optimize the fuel expenses is improving operational activities and maintaining established rates of fuel consumption. The fuel consumption of the vehicle is affected by the technical serviceability of the vehicle, the period of its service life, the condition of the moving parts, the dimensions of the body, the weight of the cargo being transported, etc. Another factor affecting fuel consumption is the weather conditions and the level of driver's professionalism. To regulate the fuel consumption, it is necessary to optimize the distances along the transportation routes, since the fuel consumption also depends on the mileage of the vehicle. Building a competent logistics route also implies optimal distribution of cargo in the vehicle's body, reducing idle time of cars during loading and unloading operations, as well as timely registration of transport documentation. In 2017, BTC encountered problems associated with improper performance of contract obligations in the field of transport activities. In most cases, it was about delays in the delivery of cargo to the consignee due to vehicle's idle time during loading and unloading operations. Improving BTC logistic activities will reduce fuel expenses by about 2% or will save 1 million RUB annually. The cutting repair and maintenance expenses by on average 3% and fuel expenses by 2% lead to decrease in the costs of sales by 1,1%.

Table 54 Calculation of change in the company's value due to expenses reduction [134]

Repair and maintenance expenses	-3%
Fuel expenses	-2%
Cost of sales	-1,1%
The company's value	+23,81%

If the costs of sales decrease by 1,1%, the company's value will increase by 23,81% and will amounts to 192 737 thousand RUB.

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[134]   Own processed

CONCLUSION

The goal of the final thesis was to calculate Byte-Transit-Continent LLC value to valuation date and to determine factors of value and ways, which could lead to increase in this value.

Byte-Transit-Continent is the medium-sized company, which operates on the road freight shipping market, in the LTL cargo segment. The strategic analysis identified external factors, influenced on the freight shipping market development and on the company's operational activities. The most significance factor was the Gross Domestic Products. Based on the GDP's value, the forecast company's sales growth rate was determined. The market attractiveness and competitive strength analysis allowed to identify company's prospects, which were acceptable. That is, the significance changes on the market and in the company's functioning was not expected. This statement was confirmed by financial analysis., since the company operated steadily without negative deviations, however the company provided conservative policy, which had an impact on value of rate on equity. Thus, it was assumed that the company's sales would grow steadily for forecast periods, however, company's operational efficiency remained constant.

The value of the company was determined by DCF entity method, which assumed the calculation of free cash flow for owners and creditors. The final company's value amounted to 155 669 thousand RUB.

Then, sensitivity analysis was carried out to estimate degree of influence of chosen value factors. Factor with the greatest degree of influence was costs of sale. Small changes in value of this factor led to significant changes in the company's value. So, the ways, which assumed decreasing in costs of sale, were offered. It is assumed that the providing regular maintenance and the optimizing transportation routes could lead to reducing costs of sales by 1,1%., which in turn increased the company's value by 23,81%. From the above it follows, that the stated goal of this final thesis can be considered as fulfilled.

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Appendix 1 Financial statement of Byte-Transit-continent for 2015-2018

Balance sheet

Thousand RUB	2013	2014	2015	2016	2017
I. FIXED ASSETS	90 408	104 974	90 860	104 565	130 970
Fixed assets	82 307	95 916	80 279	94 203	118 429
Real estates - buildings, premises, land	*52 740*	*60 865*	*53 350*	*62 024*	*81 876*
Transport, machinery, other	*29 567*	*35 051*	*26 929*	*32 179*	*36 553*
Long-term financial investments	7 865	8 765	10 276	9 983	11 981
Other noncurrent assets	236	293	305	379	560
II. CURRENT ASSETS	76 026	68 783	91 768	95 213	97 770
Inventories	1 833	2 511	1 430	2 756	3 038
Account receivable	56 354	52 898	67 642	69 477	69 852
suppliers and contractors	*16 198*	*15 976*	*20 791*	*25 903*	*23 275*
customers	*35 870*	*31 867*	*40 609*	*37 291*	*40 950*
loans to employees	*2 515*	*2 836*	*3 287*	*3 972*	*3 211*
other debtors	*1 771*	*2 219*	*2 955*	*2 311*	*2 416*
Short-term financial investments	7 768	5 344	6 950	5 417	5 499
Deposit	*7 768*	*5 344*	*6 950*	*5 417*	*5 499*
Cash	9 976	7 865	15 046	17 117	18 735
Other current assets	95	165	700	446	646
Total of assets	166 434	173 757	182 628	199 778	228 740
III. EQUITY	111 517	123 819	127 314	141 545	165 935
Share capital	200	200	200	200	200
Additional capital	3 235	3 235	3 235	3 235	3 235
Retained earnings	108 082	120 384	123 879	138 110	162 500
IV. Long-term liabilities	7 765	5 409	4 571	2 781	1 978
Loans	7 765	5 409	4 571	2 781	1 978
Other long-short liabilities	0	0	0	0	0
V. Short-term liabilities	47 152	44 529	50 743	55 452	60 827
Loans			4 500	4 084	4 866
Accounts payable	47 152	44 529	46 243	51 368	55 961
suppliers and contractors	*25 932*	*21 181*	*26 042*	*31 636*	*33 475*
customers	*7 082*	*7 432*	*7 834*	*8 436*	*10 873*
budgets	*10 231*	*10 226*	*6 735*	*6 367*	*7 423*
off-budget funds	*1 368*	*2 372*	*2 292*	*2 037*	*1 651*
employees	*2 389*	*3 173*	*3 234*	*2 739*	*2 389*
other	*150*	*145*	*106*	*153*	*150*
Total of liabilities	166 434	173 757	182 628	199 778	228 740

Income statement

	2013	2014	2015	2016	2017
Sales	646 375	588 233	562 803	640 226	680 715
Costs	529 548	490 594	443 911	548 593	555 234
Gross profit	**116 827**	**97 639**	**118 892**	**91 633**	**125 481**
Commercial expenses	3 527	4 653	5 621	5 943	6 533
Administrative espenses	89 263	77 094	95 857	66 939	85 674
EBIT	**24 037**	**15 891**	**17 414**	**18 751**	**33 274**
Interest expenses	688	813	959	1 025	1 067
Interest income	765	1 197	1 756	1 144	1 302
Other income	678	876	743	943	765
Other expenses	1 765	1 932	2 400	1 872	1 532
EBT	**23 027**	**15 219**	**16 554**	**17 941**	**32 742**
Taxes	4 301	2 917	3 059	3 710	8 352
EAT	**18 726**	**12 302**	**13 495**	**14 231**	**24 390**

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