

St. Petersburg University
Graduate School of Management

Master in Corporate Finance Program

CAPITAL STRUCTURE: AN INSTRUMENT TO MANAGE FIRM'S VALUE (ON THE
EXAMPLE OF RUSSIAN RETAILERS)

Master's Thesis by the 2nd year student Concentration — Corporate Finance

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St. Petersburg

2018

ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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May 23, 2018

АННОТАЦИЯ

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Факультет	Высшая Школа Менеджмента
Направление подготовки	Корпоративные финансы
Год	2018
Научный руководитель	Лукьянова А.Е.
Описание цели, задач и основных результатов	<p>Цель исследовательской работы – выявление факторов, с помощью которых компании могут управлять структурой капитала и, следовательно, ценностью компании.</p> <p>Задачи исследования:</p> <ol style="list-style-type: none"> 1. Провести обзор ценностно-ориентированного подхода в менеджменте. 2. Провести критический анализ теорий формирования структуры капитала, а также исследований факторов, оказывающих влияние на структуру капитала. 3. Провести обзор отрасли розничной торговли в России. 4. Сформулировать и применить методологию для выявления влияния структуры капитала компании на ее ценность. 5. Сформулировать и применить методологию для выявления факторов, влияющих на структуру капитала компании. 6. Предоставить рекомендации по управлению ценностью компании с помощью структуры капитала для российских ритейлеров. <p>В результате исследования доказано, что структура капитала является одним из внутренних инструментов управления ценностью компании. Кроме того, были выявлены факторы, с помощью которых возможно управлять структурой капитала, и, следовательно, ценностью компании. Были сделаны соответствующие</p>

	рекомендации для российских ритейлеров.
Ключевые слова	Структура капитала, ритейл, ценность компании

ABSTRACT

Master Student's Name	Anastasia Anufrieva
Master Thesis Title	Capital Structure: an Instrument to manage Firm's Value (on the Example of Russian Retailers)
Faculty	Graduate School of Management
Main field of study	Corporate Finance
Year	2018
Academic Advisor's Name	Loukianova A.E.
Description of the goal, tasks and main results	<p>The research goal of this study is to identify the factors through which the capital structure, and, in turn, company's value can be managed.</p> <p>The research objectives include:</p> <ol style="list-style-type: none"> 1. To provide an overview of value-based management approach. 2. To provide a critical analysis of theories of capital structure and of studies describing the factors that might affect capital structure. 3. To provide an overview of retail industry in Russia. 4. To formulate and apply the methodology for identification of impact of capital structure on the company's value. 5. To formulate and apply the methodology for identification of factors that affect capital structure. 6. To provide recommendations for Russian retail companies on value management through capital structure. <p>As a result of the study, it was proved that a capital structure is one of the intrinsic factors that influence company's value.</p> <p>Besides, the manageable factors that influence capital structure and, in turn, company's value were identified, and relevant recommendations for Russian retailers were provided.</p>
Keywords	Capital structure, company's value, retail industry

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INTRODUCTION

Any investor is interested in maximizing return on the investment made within the appropriate level of risk. Thus, the purpose of every business is to maximize shareholder's value (Jensen, 2000). On the basis on this axiom, the value-based management approach has been developed to assess and increase company's value. Under such approach, the most important criterion for managerial decision making is whether the company's value would be increased or not.

Regarding immediate economic conditions, particularly the constant growth of competition across all industries, the instability of the financial and the raw materials market and, thus, increasing uncertainty, it is crucial for companies to examine the intrinsic factors which might increase the value of the company, and capital structure is one of such factors.

Decisions which determine capital structure are strategically crucial for the following reason: high costs of capital resulting from inaccurate choice of ratio of internal financial sources to external financing leads to the decline in company's growth potential as well as its' competitiveness. Moreover, the meticulous selection of sources of funding mitigates risks that are linked to unstable economic environment, therefore, facilitating sustainable development of the company. Thus, a capital structure might well be considered as an intrinsic tool to manage company's value. However, the effect of capital structure on company's value might be two-sided. So, the research question 1 is: What is the effect of capital structure on company's value?

A significant diversity in the existing approaches to the formation of the capital structure is caused by constantly changing economic conditions, including both micro- and macro- levels, investors' attitude to risk and evolution of management concepts as well as the adapting views on financial measures and indicators. There is still no consent on how the firms form capital structure and which factors influence capital structure, as different results were obtained on different samples and research approaches. However, it was proved that country and industry play an important role in the capital structure formation (Frank, Goyal, 2009; Ozde, 2015). This is the reason why only Russian retail companies were selected for the research. Consequently, the research question 2 is: Which factors influence capital structure?

Another reason for the choice of Russian retail industry for the research is that the number of capital structure studies considering company's value based on the Russian market is limited, and especially the number of studies that consider particular industries. At the present time I am unaware of any scientific studies on the proposed topic, thus, the research into capital structure as an instrument to manage company's value for Russian retailers' will bring new insights to the scientific community and company's managers.

Thus, the subject of the study is a capital structure as an instrument to manage company's value, whereas the object of the study is the companies operating in the retail industry in Russia.

The selected research goal is to identify the factors through which the capital structure, and, in turn, company's value can be managed.

The research objectives include:

1. To provide an overview of value-based management approach.
2. To provide a critical analysis of theories of capital structure and of studies describing the factors that might affect capital structure.
3. To provide an overview of retail industry in Russia.
4. To formulate and apply the methodology for identification of impact of capital structure on the company's value.
5. To formulate and apply the methodology for identification of factors that affect capital structure.
6. To provide recommendations for Russian retail companies on value management through capital structure.

The study consists of the introduction, three main chapters and conclusion. In addition, the list of references and the necessary appendixes are provided.

The first chapter is devoted to the critical literature review, where the researches available to date considered. Firstly, the overview of the value-based management approach is made; secondly, theoretical aspects of capital structure problem are brought to light, next, major capital structure theories are analysed and the factors that influence capital structure are identified. On the basis of the literature review, research hypotheses are formulated and the appropriate indicators are selected to represent the studied subjects in empirical research.

The second chapter is focused on the analysis of retail industry in Russia. It provides information on the current state of the industry, ongoing trends and perspectives of Russian retail. Besides, the companies that are the major players of the industry are analysed on the basis on information provided in financial statements and open-source analytical data. The specifics of Russian retail industry are identified in this chapter, and the sample for empirical research is selected.

The third chapter devoted to empirical research. The data and data sources that are used for the research are described in this chapter. Then, the methodology for the research is formulated. On the basis of the selected methodology, the empirical research is conducted. The obtained research results are described, the analysis of these results is presented and the recommendations for Russian retail companies on increasing company's value through capital structure are provided.

Finally, the conclusion is made.

The results of the study will have far-reaching managerial implications. As the capital structure is the internal tool providing the companies' leaders with the opportunity to manage companies' value from inside, the recommendations provided would assist in better management of the firm's value.

As it has been stated above, the existing economic literature is not adequate with respect to its coverage of the researches issues in Russia, and in even greater extent it is true the companies of particular industries, including retail sector. The proposed research is expected to make a contribution into closing such research gap.

1. LITERATURE REVIEW

1.1 Overview of the value-based management approach

The value-based management approach was developed in the 1990s as due to the growth of financial markets and investments made by institutional investors (Mottis, Ponsard, 2009). Many researchers contributed to the appearance of the approach, however, the first time the concept has been articulated is in 1990s when EVA as a valuation metric was introduced by J. Stern and B. Stewart (Stern, J., Stewart, B., 2000). After that, the theory of competitive value management was published by H. Stern (Stern, H., 2007).

There are many definitions given to value-based management by various researches. For example, Armitage and Fog (Armitage, Fog, 1996), define value-based management as a concept of managing the company in compliance with economic value creation principles. Ryals (Ryals, 1999) understood value-based management as a tool aimed at the generating real wealth, as opposed to simply on-paper profit, which is possible if the company obtains sufficient income to cover all investor's costs, including risk premium.

The core of the value-based management approach is company's value maximization. It is explained by following reasons.

Firstly, a logical aim of any investor is to gain the maximum return on the investment made within the acceptable for this investor level of risk. Thus, the more value the company generates, the better for those who invested into it as the greater dividends might be paid.

Secondly, the more value the company generates from the investments made, the greater is the price of the company, which is of interest to the investors in case it is decided to sell the company.

Thirdly, the researchers argue that, to manage the firm purposefully the only one main firm objective must be set, and such objective is value maximization. In case when there are multiple objectives it is logically not possible to pursue the maximization of more than one of them at the same time. Thus, if there are multiple objectives, there is no way to make a purposeful decision as no fundamental criterion for such decision is available. As it is stated by Jensen, multiple objectives mean no objective at all (Jensen, 2000).

So, in every stage of the company's development it is essential to set company's value maximization as a first priority (Jensen, 2000). Both global and day-to-day decisions should be assessed from a perspective of company's value. If an implementation of the decision leads to increase in company's value, such decision should be implemented. Otherwise, if decision does not bring desired effect on company's value, such decision should be declined.

The value-based management approach provides the performance oriented indicators (metrics) as the tools to identify and control the effect of various factors and decisions on company's value through which a firm's goal of value maximization can be achieved.

Such performance oriented indicators are crucially important for company's managers as they enable to track the way of value creation and provide the understanding of this process (Todorovic, 2012). Besides, the usage of such metrics encourages value-focused decision-making and improves manager's motivation (Copeland, 2000).

The majority of value-based management metrics have the discounted cash flows model in the core of identifying the firm's value. It allows to account for the fact that in order to create value, the money invested in the company should yield the return higher than the costs of capital. In other words, if the company only generates enough income to cover the required rate of return, the investor did not obtain any reward from such investment as no economic profit has been made in this case (Stern, Shiely, Ross, 2001). Such approach overcomes the disadvantages of standard accounting and performance valuation frameworks.

Consequently, the less the costs of capital, the higher returns are obtained by the company, all other aspects being equal. As the costs of capital are central in this case, there obviously should be a correlation between the capital structure, which determines the costs of capital, and the value of the company.

Value-based management offers several metrics for measuring company's value. The most commonly used are TSR (total shareholder return), MVA (market value added), EVA (economic value added), CFROI (cash flow return on investment), SVA (shareholder value added).

1. Total shareholder return

TSR is one of the ways to determine company's value for a listed company. TSR identifies the change in the value of company's stock over 1-year period and the dividends, as a percentage of company's value in the beginning of the year. The formula (Ameels et al, 2002) for calculation is:

$$TSR_{t+1} = \frac{(P_{t+1}-P_t)+D_{t+1}}{P_t},$$

where

P – stock price

D – dividends

t – the moment of time

TSR is stated to be the best indicator of market expectations of firm's performance (Rappaport, 1987). However, as a value metric, it has several drawbacks. Firstly, it can be calculated only for the listed companies. Secondly, as it is obtained through the market, it is not a suitable tool for assessment of firm's internal decisions as it is driven by many factors that are not under firm's control (Bannister and Jusuthasan, 1997; Bacidore et al., 1997). According to the survey of the companies that apply value-based management approach, TSR is used by 7,4% of the companies as a proxy for company's value (Boulos et al., 2001).

2. Market value added

MVA refers to a difference between company's stock market value and the sum of equity and debt financing invested into a company. The formula (Ameels et al, 2002) for calculation is:

$$MVA = MV - IC,$$

where

MV – company's market value

IC – total invested capital

MVA is a helpful measure of shareholders' value as it captures the difference between the market estimation of company's value and the total capital invested into a company, thus enabling to assess how effectively the financing is used. However, as it incorporates market valuation, it is also a subject to market expectations on company's future value rather, similarly to TSR. According to the research, 7,9% of the companies use MVA as a proxy for company's value (Boulos et al., 2001).

3. Economic value added

In contrast to the metrics considered previously, EVA is calculated on the basis of information from within the company and does not include market expectations on company's performance. For the decision-making perspective it is an advantage, as the drivers of EVA are largely under the firm's control. Due to this, EVA can be used to motivate the managers to increase company's value as a first priority by providing an incentive. Besides, Stewart states that EVA is the only performance metric that directly estimates the intrinsic value of any company (Stewart, 1999). The central idea behind EVA is the concept of taking costs of capital into account. EVA is formed on the basis of both balance sheet and income statement items and also includes weighted average cost of capital. The formula (Ameels et al, 2002) for calculating EVA is:

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

where

NOPAT – net operating profit after tax

IC – invested capital

WACC – weighted average cost of capital

Drilling down the formula to the more detailed level, alternative formula is obtained:

$$EVA = \text{operating profit} * (1 - \text{tax rate}) - (\text{total assets} - \text{current liabilities}) * WACC$$

In comparison to other value-based management metrics, EVA is proved to be the one which is the most aligned with shareholders' value creation (Jakub, Viera, Eva, 2015). Besides, EVA has been successfully used for evaluation of retail companies, including J.C. Penney (Young, S. O'Byrne, 2001) and Home Depot (Bell, 2004). According to the research, more than 47% of the companies use EVA as a proxy for company's value (Boulos et al., 2001).

4. Cash flow return on investment

CFROI is expressed by the annual gross cash flow relative to the capital invested (Lewis in Gunther, 1997). The formula (Ameels et al, 2002) for calculation of CFROI is:

$$I = \sum_{i=1}^n \frac{CF_i}{(1+r)^i} + \frac{W_{n+1}}{(1+r)^{n+1}}$$

where

r – CFROI

W – expected residual value of non-depreciation assets

CF – gross cash flow

I – gross operating asset investment

i – index of sum

n – the maximum value of i

This is a general formula of CFROI. To obtain correct results, the information on useful time of assets and the salvage value of assets is needed that cannot be obtained through open sources outside the company. CFROI is an equivalent of internal rate of return for the investments that have already been made. If CFROI is higher than WACC, the company has made an economic profit. The procedure of CFROI calculation is complex and requires a lot of data. However, according to the survey, 23% of the companies use CFROI as a proxy for company's value (Boulos et al., 2001)

5. Shareholder value added

SVA captures the change in shareholder value driven by operational results and investments made during the period. The formula (Ameels et al, 2002) for calculation is:

$$SVA_n = PV(NCF_n) + (PV[RV_n] - PV[RV_{n-1}]),$$

where

PV(NCF_n) – present value of net cash flow from operations during the period n

PV(RV_n) – residual value in the period n

The SVA is comparable to EVA in the aspect of shareholder value measurement; however, the calculation of this metric is more complex and is based on net cash flows instead of the operating profit adjusted by taxes. For capital structure study EVA then is more preferable. According to the survey of the companies that apply value-based management approach, SVA is used by 8% of the companies as a proxy for company's value (Boulos et al., 2001).

All the metrics considered above might be divided into two main groups:

1. Market-focused metrics – such metrics rely on stock market data to determine the value of the company directly (TSR, MVA).
2. Indirect metrics – such metrics allow to estimate the company's value indirectly, using alternative valuation approach (EVA, CFROI, SVA).

Both types of metrics are helpful in the estimation of company's value, however, in each case the appropriate metric should be chosen. As market-focused metrics are based on stock market data, the value calculated with the help of these metrics incorporates not only the results of past managerial decisions, but also market expectations on the firm's future performance. In contrast, indirect metrics are more connected to the managerial decisions and factual performance, so it is more appropriate to use these metrics to support decision-making on corporate and lower levels.

On the basis of analysis conducted above, the comparison table for the company's value metrics is made (table 1.1).

Table 1.1 Comparison of company's value metrics. Source: prepared by the author.

Metric	Criteria			
	Based on	Complexity	Usage frequency	Firm's ability to influence the metric
TSR	Market estimation	Low	Low	Low

MVA	Market estimation	Medium	Low	Low
EVA	Intrinsic information	Medium	Very high	High
CFROI	Intrinsic information	Very high	Medium	High
SVA	Intrinsic information	High	Low	High

On the basis of an overview given above, EVA is chosen to be applied further in this research to evaluate the selected companies of Russian retail industry and to identify the effect of capital structure on the firm's value. Such indicator is the most aligned with the shareholders' value and has been proven to be an effective measurement for retail companies.

1.2 Theoretical aspects of capital structure problem

Capital includes sources that the company uses to finance its operations in the long term. Basically, all sources that are available for the firms might be divided into two categories: debt financing and equity financing. Thus, if the firm needs additional capital, there are two options: either borrow required fund or to issue equity and sell it to the equity investor. Such decision is a capital structure decision (Brealey, Myers, 2000).

In this way, capital structure is defined as a particular combination of debt and equity that the company uses to finance its operations.

Each of the sources of financing is characterized by the cost of capital, which is usually higher for the equity financing and lower for the borrowed funds. As the capital structure is a combination of debt and equity, it is characterized by a weighted average cost of capital (WACC) of the various sources of financing.

The less the company's WACC is, the more investment opportunities are available (and worth engaging in) to the company. However, capital structure decisions are more complicated than that. Each source of financing has an upside and downside, and only a well-balanced capital structure can enable a company to achieve its long-term goals. In the table below (table 1.2), the comparison between the upside and downside of two major sources of financing is provided.

Table 1.2 The upside and downside of sources of financing. Source: prepared by the author on the basis of Teplova (Теплова, 2000)

Source of financing	Upside	Downside
Debt	Large funds can be attracted,	Less stability, higher risk of

	<p>especially for the firms with high credit rating</p> <p>Lower costs in comparison to equity</p> <p>Tax shield effect</p> <p>Lack of control over the company for the lender</p>	<p>bankruptcy</p> <p>Interest payments</p>
Equity	<p>Financial stability, lower risk of bankruptcy</p> <p>No interest payments</p>	<p>Less funds are usually available in comparison to debt -> limited opportunities for firm's growth</p> <p>Equity investors in common stock possess control rights and can interfere to the current operations of the firm</p>

There are several metrics that serve to measure the capital structure of a company. As the capital structure refers to the long-term financing, short-term debt is never considered in capital structure measurement. The following metrics might be used as a proxy to capital structure.

The most common one is long-term debt/total capital. It is used in the calculation of WACC and shows the portion of debt financing in the capital structure that the firm uses on the long-term basis. This indicator is also called leverage.

However, there is also a more subtle metric that considers the composition of company's capital structure: long-term debt/EBITDA. As opposed to long-term debt/total capital, that shows the share of debt in the overall capital invested in the company, the long-term debt/EBITDA ratio is more concerned on the ability of the firm to pay out its long-term debt (Kisgen, 2006). It is also used as an indicator of creditworthiness by credit rating agencies.

Another possible metric for capital structure is the ratio long-term debt/total assets. It is used rather rarely, as only in specific cases such metric is suitable. This metric provides with the idea on how much debt the company possesses in comparison to its assets. It might be used by creditors to assess for the proportion of debt that can be compensated by the sale of firm's assets.

In the table below (table 1.3), the major information on each metric is provided.

Table 1.3 Metrics for capital structure. Source: prepared by the author.

Metric	Focus	Used by researchers
Long-term debt/total capital	The share of debt in total financing of the company	Frank, Goyal, 2009; Ivashlovskaya I., Solntseva M., 2008; Shyam-Sunder, Myers, 1999
Long-term debt/EBITDA	The ability of the company to generate earnings that can be used to pay out the debt	Ozde, 2015; Jung, Pando, Yong, 2015; Sogorb-Mira, Lopez-Gracia, 2003
Long-term debt/total assets	The ability of the company to cover the debt with the assets the company possesses	La Rocca, La Rocca, Cariola, 2011

For the purposes of this research, long-term debt/EBITDA is chosen as an indicator for the firm's capital structure. It is in line with value-based management approach described above, as it is focused on the relation of the debt ratio to the earnings of the company (prerequisite for value creation), thus the most aligned with firm's ability to payout the debt, than simply on combination of financing used.

1.3 Major capital structure theories analysis

As long as a vast majority of academic sources of information are available on the subject of capital structure, an overview of the main concepts will be presented in the following paragraphs, combined with the critical analysis of their core ideas.

One of the first studies to consider the optimal capital structure formation is the paper by F. Modigliani and M. Miller (Modigliani&Miller, 1958) written in 1958. The basic finding of the study is that company's capitalization does not depend on its capital structure; consequently, there is no such thing as an optimal capital structure. The authors mathematically proved that, in the perfect capital market, the market capitalization of the company depends on the net cost of its actives, and the sources of funding have no influence. Nevertheless, the assumptions under this

conclusion bear no relation to reality. In the table below (table 1.4), the assumptions of the model are compared with existing reality.

Table 1.4 The difference between the assumptions of Modigliani and Miller theory and real market conditions. Source: prepared by the author on the basis of (Modigliani, Miller, 1958)

Assumption	Reality
Absence of transaction costs	Transaction costs are inevitable, example: broker's commissions, bank commissions, IPO and SPO costs, etc.
Ability of all market participants obtain unlimited funds at risk-free rate	Different interest rate for private and corporate borrowers, interest rate depends on the risks associated with the borrowing
Absence of information asymmetry	Significant information asymmetry between market participants e.g. lender and borrower
Absence of bankruptcy costs	Bankruptcy costs are inevitable and might reach significant amounts
Absence of taxes	Taxation is present in all countries
No agency costs	Principal – agent problem
The same expectations on future profits of particular company among all market participants	Because of asymmetric information, market participants build different expectations on future profits

The first publication of the study attracted a lot of criticism, and served as a starting point for the subsequent research. There is a common saying which protects the importance of Modigliani-Miller's research: "While the Modigliani-Miller theorem does not provide a realistic description of the way firms finance their operations, it provides means of finding reasons why financing may matter." (University of Oradea, Faculty of Economics, 2009).

The major contribution that this article can bring to this research is explained by the fact that all subsequent theories of capital structure were developed by analyzing the influence of one or more factors (market imperfections) which were denied by Modigliani and Miller theory. So, considering this article would help to trace the origin of the modern approaches to capital structure.

Another theory, that followed Modigliani-Miller theorem and was developed on its basis, is a trade-off theory, which has divided into two directions: static trade-off theory and dynamic trade-off theory.

The prerequisite of all trade-off-based theories is that firm's executive performs cost-benefit analysis of all financing opportunities, and, then, chooses the optimal scheme of funding.

As it was mentioned above, Modigliani-Miller theorem does not consider many elements existing in the economy, such as taxes. The major improvement which is achieved by trade-off theory is inclusion of taxes in the original model.

Since the taxes had been included, raising funds using financial leverage has become a strategy providing an advantage. It is achieved by "shielding" profits from taxes by debt. Consequently, assuming that the company's objective function is linear, the most beneficial option is 100% debt financing.

The conclusion is logical; however, the tax code is a complicated system, and it is a fact which is ignored by the theory. The taxation principles vary from country to country, and depending on which aspects of the code are taken into account, different conclusions might be reached (Graham, 2001). The weak point of such conclusion is that not only 100% debt financing is not achievable in practice, but also significantly large share of debt financing undermines firm's stability and brings high risks. Together with that, as large amounts of debt makes lending funds more risky for a lender (as the risks of the borrowing company's failure to pay out debt increase), the interest rate the lender demands also increases, making the cost of debt comparable with the cost of equity or even higher than the latter.

The later versions of trade-off theories eliminated the drawbacks of the initial conclusion that 100% debt financing is the most desirable option. So, these theories are also of interest to modern economic theory. The static trade-off theory claims that firms determine their capital structure by balancing equity and debt financing in order to approach the optimal capital structure.

The benefit of debt as a source of funding is the lack of obligation to pay tax on it, as opposed to financing from retained profits. A negative aspect of debt is higher risk of having no ability to fulfill obligations to the creditors and, as a result, a risk of bankruptcy. The optimal capital structure is meant to be the one when the firm achieves the most appropriate balance between the "tax shield" effect and the risks of debt that is the condition when the marginal costs of attracting additional item of debt are equal to marginal benefits that one item of debt brings (Kraus, Litzenberger, 1973).

The evident drawback of static trade-off theory is that analysis is conducted only in the single time period. As a result of such critics, trade-off theory started to develop in the direction to the dynamic trade-off theory.

The dynamic trade-off theory went far forward than the static version by adding time factor to the model. Then, the expectations of participants of the market play an important role.

In the dynamic model the financing decisions are determined by firm's future plans. Some firms expect to repay the debt, whereas other firms reckon on attracting extra financing. If extra financing is needed, it might take two forms: debt and equity.

Brennan and Schwartz (1984) were the pioneers of evaluating the trade-off between the tax "shield" and the risk of bankruptcy. All of them examined the effects of time, uncertainty, taxes and costs of bankruptcy, however, transaction costs were not taken into account. The conclusion of the study stated that the substantial share of debt financing in the firm's capital structure is a rational choice taking into account "tax shield" effect.

The number of researchers (Collin-Dufresne, Goldstein, Martin, 2001) analyzed the tendencies which companies possess towards the dynamics of leverage regulation. According to his findings, companies that have relatively low financial leverage in the current period, seek to increase the leverage in the next period. Thus, as long as firms determine the leverage pursuant to the expected optimal level in the future, owing to the transaction costs, time lags and fault expectations, the capital structure will deviate from optimal most of the time.

Consequently, it is not an optimal strategy to decide on financial leverage based on expectations of the next period.

The trade-off theories have dramatically changed economists' views on taxes, profits and retained earnings, as well as on the attitude to decision-making.

Many empirical studies have been conducted to provide empirical evidence to the theoretical concept of the trade-off theories. A sound study by Fama and French (Fama, French, 2002) together with studies by Shyam-Sunder, L., Myers, (Shyam-Sunder, Myers, 1999) and Sogorb-Mira and Lopez-Gracia (Sogorb-Mira, Lopez-Gracia, 2003) supported the trade-off theory with empirical proof.

However, the dynamic trade-off theory still has several significant drawbacks, for example, lack of consideration of agency costs and opportunity costs when the firm declines growth chances brought by debt financing. (Strebulaev, 2007, Кокорева, 2012).

Another valuable theory of capital structure is the pecking order theory. This theory was articulated on the basis of empirical research conducted by Myers and Majluf (Myers, Majluf, 1984). Apart from other theories of capital structure, the pecking order theory does not attempt to find the way to optimal capital structure.

Instead, the pecking order theory states that a natural disposition for all companies is to express preference to utilising internal sources of funding (Myers, 1984, Myers and Majluf, 1984). If internal funds are exhausted, the firms might or might not obtain extra finance externally. The motivation to acquire additional funds is a pursuance of an opportunity for

growth. Then, if the decision to gather finance externally is made, companies decide to minimise risks related to asymmetric information.

Akerlof (Akerlof, 1970) describes it as a “lemon premium”, referring to the situation where investors demand a premium for risk for all firms in the market. This reasoning leads to the pecking order of financing: internal funds firstly, then low-risk debt financing and, afterwards, share financing.

Such order is reasonable if it is believed that all market participants are rational: investors from the outside of the company possess only a part of information of the company, and that information is less precise and trustworthy. Thus, they demand higher interest rate in response to the risks.

Consequently, the managers of the company, that are familiar with such tendency among equity investors, decide to use firstly internal funds, then to attract credit funds with low interest rate and only as a last resort to issue equity. Such order of preferences among the sources of finances is known as a pecking order.

The pecking order theory was initially articulated on the results of empirical research, so it is not surprising that it has been supported with reliable empirical evidence by many other consecutive studies. The examples include respective study by Fama and French, (Fama, French, 2002), and the more recent studies by M. Leary and M. Roberts (Leary, Roberts, 2010), by R. Anderson and A. Carverhill (Anderson, Carverhill, 2012) and other.

However, there are also several researches that failed to find proof to the pecking order theory, such as the studies by M. Lemmon and J. Zender (Lemmon, Zender, 2010) together with H. Khieu, W. Manfen and M. Pyles (Khieu, Manfen, Pyles, 2014).

All mentioned researches, both supporting and disproving the pecking order theory, applied regression analysis method.

One of the modern theories of capital structure is the signaling theory which in fact is a set of various studies with a common approach. The idea of signaling was originally formulated by S. Ross (Ross, 1977) in the article “The determination of financial structure: incentive signaling approach”. In this article S. Ross states that the capital market provides the potential investors with signals concerning the companies’ stability and growth opportunities.

Such signals are carried by the companies’ capital structure as it reflects the opinion of managers on the company’s condition. Such information is important because of the insider position of company’s managers as they possess greater information on the real state of affairs of the company.

The following example illustrates the logic of the signaling theory: as the company’s managers are interested in the highest possible price of the company’s shares, they tend to delay

the issue of shares up to the moment of the company's peak growth. The potential investors understand this tendency and thus perceive the issue of shares as a negative signal.

Another example of signals made by the capital structure of the company is the following: the growth of debt financing in relation to internal financing may be considered as a sign of high operating income that makes a tax shield an attractive option to the company. Thus, the increasing use of debt financing is considered as a positive signal to investors, leading to the shares' price growth.

The model proposed by Miller and Rock (Miller, Rock, 1995) is focused on the effect of dividends, debt payout and treasury shares as the market signals. All three might be treated as a signal that the firm generates the sufficient amount of cash to afford the payments to the investors, which leads to increase in share prices. On the contrary, the secondary issue of shares has a negative impact on the share prices.

The last signaling model that is considered in this literature review is the model proposed by I. Welch (Welch, 1989) analyzes the effect of the issue of shares on the company's capitalization. It was determined that the value of the discount on shares in IPO is a positive signal to the investors as it reflects the growth potential of the company. As the IPO requires significant expenses, only promising companies can afford this. At the same time, the secondary issue of shares is a signal of either the following slowing growth or the lack of financing, and, consequently, it is a negative signal leading to decline in share prices.

Summing up the signaling theory, it is necessary to mention that it rather describes the common patterns of capital structure changes than pursues an ambition to determine the optimal capital structure.

One of the approaches in finance that has attracted a lot of attention in the recent time is behavioral finance. In contrast to other financial theories, that use the assumption of rationality of all market participants, behavioral finance take into account the human factor, for example, emotions, stereotypes, biases, quick panicky decisions and the incorrect interpretation of information.

The pioneering study in the approach of behavioral finance is conducted by Shefrin, H., and Statman, M (Shefrin, Statman, 1985). The authors discovered that there is a disposition to hold the shares too long if the share price is falling and to sell too quickly if the share price is increasing.

The most mature theories in behavioral finance are market timing theory and the theory of cascades.

The market timing theory states that the companies try to "time" the market so that the issue of shares is made in the time period when the company's shares are overpriced and, on the

opposite, the companies buy shares back when they are underpriced. Thus, the capital structure is dependent on the share prices (Baker, Wurgler, 2002).

These efforts to “time” the market were proved by empirical research (Graham, Harvey, 2002).

The theory of cascades is the second theory of behavioral finance. The theory of cascades is based in the tendency to make the same decisions as the other people around make. If a person witnesses a situation when a lot of other people make the same decision, it is very likely that this person will also make this decision.

Bikhchandani, Hirshleifer, and Welch (Bikhchandani, Hirshleifer, Welch, 1992) proved that this effect is also applicable to the choice of the capital structure. The companies tend to change the capital structure more often when the typical capital structure of the industry the company operates in changes. So the typical level of debt financing in the particular industry is an important factor to predict the level of debt that the company operating in the industry has.

Besides, there are several behavioral studies focusing on the human factor of capital structure decisions. Tversky, A. and Kahneman, D. (Tversky, Kahneman, 1974) found significant correlation between the self-confidence and the optimistic mood of the managers and the share of debt financing in the firm’s capital structure. The research by S. Bhagat, B. Bolton and A. Subramanian (Bhagat, Bolton, Subramanian, 2011) found the correlation between the characteristics of the manager and the capital structure.

Many other researchers presented proof of the connection between human factors and capital structure decisions. The examples are the researches by P. Hernadi and M. Ormos (Hernadi, Ormos, 2012), U. Ponomareva and T. Umans (Ponomareva, Umans, 2015), A. Boot and A. Thakor (Boot, Thakor, 2011).

As a result of analysis conducted above, the table comparing capital structure theories is made (table 1.5).

Table 1.5 Comparative summary of capital structure theories. Source: prepared by the author.

Theory	Based on	Core idea	Empirical proof	Relevant researches
Modigliani & Miller theory	Theoretical study	In the perfect capital market company’s capitalization does not depend on capital structure	No	Modigliani, Miller, 1958
Trade-off theory	Theoretical study	Firms should perform the cost-benefit analysis of financing opportunities and	Yes	Kraus, Litzenberger, 1973; Brennan,

		choose an optimal capital structure which is achieved by appropriately balancing debt and equity. The usage of debt allows to decrease the costs of capital and obtain a tax shield, so the companies should use the benefits of debt.		Schwartz, 1984; Shyam-Sunder, Myers, 1999; Graham, 2001; Collin- Dufresne, Goldstein, Martin, 2001; Fama, French, 2002; Strebulaev, 2007; Kokoreva, 2012
Pecking order theory	Empirical research	There is a tendency that the companies follow the pecking order of financing choice: internal funds firstly, then low-risk debt financing and, afterwards, share financing.	Yes	Myers, Majluf, 1984; Fama, French, 2002; Lemmon, Zender, 2010; Leary, Roberts, 2010; Anderson, Carverhill, 2012; Khieu, Manfen, Pyles, 2014
Signaling theory	Empirical research	The actions of the company in the capital market provide investors with signals on company's real state of affairs. The increase in the level of debt means that the company generates enough operational profit to utilize the benefits of tax shield, so it is a positive signal for company's value increase.	Yes	Ross, 1977 Welch, 1989 Miller, Rock, 1995
Market timing theory	Empirical research	The companies try to "time" the market so that the issue of shares is made in the time period when the company's shares are overpriced and, on the opposite, the companies buy shares back when they are underpriced.	Yes	Baker, Wurgler, 2002; Graham, Harvey, 2002
Behavioral finance approach	Empirical research	Human factor affects capital structure decisions. Management is likely to follow the capital structure similar to the industry's typical structure. Capital structure decisions depend on manager's self-confidence.	Yes	Tversky, Kahneman, 1974; Shefrin, Statman, 1985; Bikhchandani, Hirshleifer, Welch, 1992; Bhagat, Bolton, Subramanian, 2011

On the basis of the analysis of capital structure theories, the hypothesis for the research question 1, which is stated in the introduction (What is the effect of capital structure on company's value?), can be articulated. Among capital structure theories, only trade-off theory and signalling theory clearly claim what effect on company's value is expected with the increase in the share of debt in company's capital structure:

1. According to the trade-off theory, the increase in the level of debt in company's capital structure increases company's value due to lower costs of debt financing and the tax shield effect. This occurs until the level of debt is such that the cost of debt increases because of rising risks for the lender of capital.
2. According to signaling theory, the increase in the level of debt is a positive signal for the capital market, as it shows that the company generates enough operational profit to utilize the benefits of tax shield. As the signal is positive, the value of the company increases with increase in the level of debt in company's capital structure.

Thus, the hypothesis for research question 1 is: the greater the level of debt in company's capital structure is, the greater the company's value is.

1.4 Factors that influence capital structure

Another important pool of studies that are relevant to the research questions of the present study is the studies that seek to identify the factors that influence the firm's capital structure. Below an analytical review of the studies that are focused on the influence of various factors on the capital structure of firms that operate in different industries and countries of the world.

Taking into account the research design and research methods applied, all such studies can be divided into two categories. The first one includes the studies that apply mathematical methods (mostly regression analysis) to prove the correlation between the factors and the capital structure of the firms. The second category includes the studies which are built around the analysis of primary data: the interviews and questionnaires of the top management of the company.

Considering the studies that are based on mathematical methods, it seems logical to start with one of the most outstanding empirical researches that has become a classic: the study by Titman and Wessels (Titman, Wessels, 1988). The approach of the study was to test the influence of various factors on the firms' capital structure using factor-analytic model. The

model consisted of two parts: the measurement part and the structural part. Citing the study: “In the measurement model, unobservable firm-specific attributes are measured by relating them to observable variables, e.g., accounting data. In the structural model, measured debt ratios are specified as functions of the attributes defined in the measurement model.” Literally, the research is built around two regression models that are linked to one another.

Besides, an important feature of the methodology of the study is that the authors investigate which proxy variables better describe the factors chosen for the model. For example, Titman and Wessels (Titman, Wessels, 1988) consider the influence of growth factor on firms’ capital structure. The authors offer to measure the growth by three proxy-variables: CAPEX/assets ratio, year-to-year growth of assets (%), and the share of R&D costs in the company’s revenue.

The sample included 469 US firms, the data covered 8 consecutive years.

Titman and Wessels’ results did not support any existing theory of capital structure. However, they proved that more profitable firms tend to have lower debt/equity ratio, and transaction costs have significant influence on firms’ capital structure.

Rajan R. and Zingales L. (Rajan, Zingales, 1995) went forward with the study similar to the previous one, but the sample this time covered companies operating in USA, Japan, Germany, France, UK, Canada and Italy. The authors used some of the factors that were initially proposed by Titman and Wessels: company’s size, growth, tangibility of assets and profitability. The influence of these factors on companies’ capital structure was proved with the help of regression analysis.

After that, the authors investigated whether there are country-specific differences in terms of factors’ influence on capital structure and found out that there are such differences, and the corrections should be made in case the sample is international.

Another significant research providing insight into the determinants of capital structure is the study by Frank and Goyal (Frank, Goyal, 2009). The researches assessed the influence of 10 major factors on capital structure on the sample of US public companies in the period from 1950 to 2000. The factors included company’s size, company’s value, growth, industry, type of assets, risk of bankruptcy and macroeconomic condition factors, that were described by 39 proxy-variables.

As a result, Frank and Goyal found significant impact of size, growth, risk of bankruptcy and industry leverage on firm’s capital structure. Moreover, the researches made a conclusion that the trade-off theory explain the majority of factors of the introduced model, whereas the pecking order theory is not able to explain the results they obtained.

In 2015, O. Ozde (Ozde, 2015) supported the results of M. Frank and V. Goyal, conducting research on the large sample of firms in 37 countries, applying econometric analysis. The new factors, such as tangibility of assets and inflation were also considered to be of influence on the capital structure.

Fischer, Heinkel and Zechner (Fischer, Heinkel, Zechner, 1989) focused on the choice of capital structure in the presence of recapitalization costs. It is valuable to this research as it describes the financing behaviour of the firms in the dynamic setting. The most important result of this study is the obtained set of firm-specific factors which influence the range of change in firms' debt ratios and these factors might be valuable for the current research as well.

Talking about the research design of the study by Fischer, Heinkel and Zechner, it is based on the regression method. The analysis is focused on the classic tax/bankruptcy cost theory of capital structure relevance. Such research design is appropriate to achieve the goal of the research as the obtained results show distinct prediction that connects firm-specific factors and the capital structure, stating that:

- a) smaller
- b) riskier
- c) lower-tax
- d) lower-bankruptcy-costs

firms show greater fluctuations of debt ratios over the time.

In the article of T. La Rocca, M. La Rocca and A. Cariola (La Rocca, La Rocca, Cariola, 2011) the researchers state that there is also a company's life cycle factor that influences the capital structure of companies. Applying econometric analysis, the authors found that debt is more widely used by the firms in the beginning of their life cycle, after that, as maturity increases, firms gradually increase the share of internal financing. For mature firms, pecking order theory best explains firms' approach to capital structure. The authors proved this tendency to be true irrespective of industry and consistent in time.

Another valuable thought is the connection between macroeconomic factors and the capital structure. The researches by K. Jung, S. Pando and S. Yong (Jung, Pando, Yong, 2015) together with H. Bhamra, L.Kuehn and A. Strebulaev (Bhamra, Kuehn, Strebulaev, 2010) have shown that there is a reliable linkage between the economic condition and the capital structure of the firms.

During the search of literature for this literature review only one study considering a sample of Russian companies was found. The study by Ivashlovskaya I. and Solntseva M. (Ивашковская, Солнцева, 2008) examined the factors that influence a capital structure using linear regression model. The sample included 74 Russian companies, 84 Brazilian companies

and 246 Chinese companies during the time period from 2001 to 2006. The analysis was conducted separately for every country, and results for Russia are mostly of interest to the present study. These results are:

1. There is an inverse relationship between the firm's profitability and the share of debt in firm's capital.
2. There is a direct relationship between the company's growth and the share of debt in company's capital.
3. The hypothesis that there is a direct relationship between firm's size (proxy-variable logarithm of sales) and the share of debt, however, there is an inverse relationship between the proxy-variable "logarithm of assets", which also represents the size factor, and the share of debt in total capital. The authors failed to explain such result.

Considering the studies of the second category (that apply analysis of primary data, interviews, questionnaires), one of the most extensive studies is the research by Graham and Harvey (Graham, Harvey, 2001). The research was conducted on 392 questionnaires of Chief Financial Officers.

Several tendencies were found in the behavior of the questioned professionals. Firstly, the interviewee pointed out that they aim to maintain financial flexibility in capital structure decisions and to pursue high credit rating (more than 55% of respondents), which supports the pecking order theory. Secondly, the CFOs admitted their willingness to issue equity when the firm is overvalued, whereas most of the time they prefer not to lessen the earnings per share (65% of respondents), which supports the market timing theory. Thirdly, only 19% of respondents claimed that the company does not have a target capital structure, which supports the dynamic trade-off theory.

As it is obvious from the results above, the 100% support was not found for any of the theories of the capital structure.

Beattie, Goodacre and Thomson (Beattie, Goodacre, Thomson, 2006) conducted another relevant research. In 2000, the researchers conducted a survey among the CFO's of the public companies listed in UK, and based their research on 192 obtained responses.

The major conclusion made by the researchers is that there was no common approach to capital structure decisions within the respondents of the survey. Almost a half of the firms aim to maintain a particular target capital structure, supporting the trade-off theory, whereas 60% stated that they follow the pecking order theory. Surprisingly, the respondents of the survey did not think of these two theories as of mutually exclusive and exhaustive.

Besides, the respondents confirmed many of widely considered factors to influence on capital structure, such as the size, the growth, the tax shield, the agency costs and the information asymmetry.

In addition, the several factors specific for retail industry might also influence capital structure. These factors have not been included in the capital structure studies yet, probably because of the lack of retail industry focused studies. From the factors proposed by Federal Service of Statistics (Federal Service of Statistics), the following two are logically connected with the capital structure as they are connected with the two most significant cash flows within the company – the sales to customers and the payments to suppliers, which are the core elements of retail business.

Firstly, the stock turnover might influence capital structure. Stock turnover is of interest to the study as it shows the number of days between the moment when the good is bought from suppliers and the moment when the good is sold to the customers. The less the value of stock turnover is (in days), the more efficiently the company operates, and the less working capital is required for the operations. If the stock turnover increases, it leads to the need in additional capital and thus might influence the capital structure of the firm.

Secondly, the inclusion of accounts payable turnover (in days), would also be of interest to the present research. Accounts payable turnover indicates the number of days that pass between the goods are received from suppliers and the payment to suppliers. The greater this value, the more efficient the firm is, as the ability of the firm to pay later is in fact an interest-free debt. So, the greater the accounts payable turnover, the less working capital is needed by the firm. If the accounts payable turnover increases, it leads to the need in additional capital and thus might influence the capital structure of the firm.

On the basis of the analysis of studies that aim to detect the major factors that influence capital structure, the summarizing table is made (table 1.6).

Table 1.6 Factors that influence capital structure. Source: prepared by the author.

Factor	Effect on capital structure	Manageable by firm	Empirical proof	Relevant studies
Size	Controversial results were obtained by different researchers. Some state that there is a direct relationship between the level of debt and firm's size, others –	No	Yes	Rajan, Zingales, 1995; Frank, Goyal, 2009; Ozde, 2015; Fischer, Heinkel, Zechner, 1989; Ivashkovskaya, Soltseva, 2008; Beattie, Goodacre,

	indirect relationship			Thomson, 2006
Growth	The greater the company's growth pace, the greater the share of debt in company's capital structure	Yes	Yes	Rajan, Zingales, 1995; Frank, Goyal, 2009; Ozde, 2015; Ivashkovskaya, Soltseva, 2008; Beattie, Goodacre, Thomson, 2006
Profitability	More profitable firms have less share of debt in capital structure	Yes	Yes	Titman, Wessels, 1988; Rajan, Zingales, 1995; Frank, Goyal, 2009; Ivashkovskaya, Soltseva, 2008; Beattie, Goodacre, Thomson, 2006
Country	Capital structure in different countries varies	No	Yes	Rajan, Zingales, 1995; Frank, Goyal, 2009; Ozde, 2015
Industry's mean capital structure	Company's capital structure tends to change in the direction of industry's mean capital structure	No	Yes	Bikhchandani, Hirshleifer, Welch, 1992; Frank, Goyal, 2009
Life cycle stage	Companies in the beginning of their life cycle possess greater share of debt in capital structure, with maturity the share of debt decreases	No	Yes	La Rocca, La Rocca, Cariola, 2011
Inventory turnover	The greater the stock turnover value(days), the greater the share of debt in company's capital structure	Yes	No	-
Accounts payable turnover	The greater the value of accounts payable turnover (days), the less share of debt in company's capital structure.	Yes	No	-

On the basis of the conducted analysis of factors that influence capital structure, the factors for the present research on Russian retailers need to be chosen to respond to the second

research question (Which factors influence company's capital structure?). As the topic of the study considers capital structure as an instrument to manage company's value, only the factors that are manageable (under the firm's control), should be selected for the further study. Then, the hypotheses for each factor are developed on the basis of the analysis above. Besides, proxy variables that were already proved to be a reliable indicator of a factor by other researchers are chosen for the research. The results are presented in the table below (table 1.7).

Table 1.7 Factors selected for further research, proxy variables and related hypotheses.

Source: prepared by the author.

Factor	Hypothesis	Proxy	Proxy used by
Growth	The greater the company's growth pace, the greater the share of debt in company's capital structure	Year-to-year growth of assets,%	Titman, Wessels, 1988; Frank, Goyal, 2009
Profitability	The greater the firm's profitability, the less share of debt in capital structure	ROA = Net income/total assets	Titman, Wessels, 1988; Frank, Goyal, 2009
Accounts payable turnover	The greater the stock turnover value(days), the greater the share of debt in company's capital structure	Accounts payable turnover = $365 / (\text{Total supplier purchases} / \text{average accounts payable})$	Standard estimation metric
Inventory turnover	The greater the value of accounts payable turnover (days), the less share of debt in company's capital structure.	Inventory turnover = $(\text{Average inventory} / \text{COGS}) * 365$	Standard estimation metric

Besides, the analysis of the previous studies provides a clue to the appropriate research method for the present study. All studies considered in this sub-chapter that are based on secondary data and econometric analysis is applied to detect the correlation between the factors and capital structure and to prove the effect of these factors on company's capital structure

(Titman, Wessels, 1988; Rajan, Zingales, 1995; Frank, Goyal, 2009; Ozde, 2015; Ivashkovskaya, Soltseva, 2008, La Rocca, La Rocca, Cariola, 2011; Fischer, Heinkel, Zechner, 1989).

The advantage of econometric analysis is that the result can be checked for significance and the model can be tested for the overall applicability. The regression analysis also enables to check the results on reliability and validity with the help of econometric techniques. As in this case all the necessary data for regression can be gathered, econometric analysis is a suitable method for the research.

2. ANALYSIS OF RETAIL INDUSTRY IN RUSSIA

2.1 Industry overview

Retail trade in Russia takes an important place in the Russian economy. In 2017, the retail trade turnover in Russia constituted 26,3 trillion rubles. In comparison, construction industry's turnover approached 5,9 trillion rubles, telecommunication industry's turnover equaled 1,7 trillion rubles (Federal Service of Statistics).

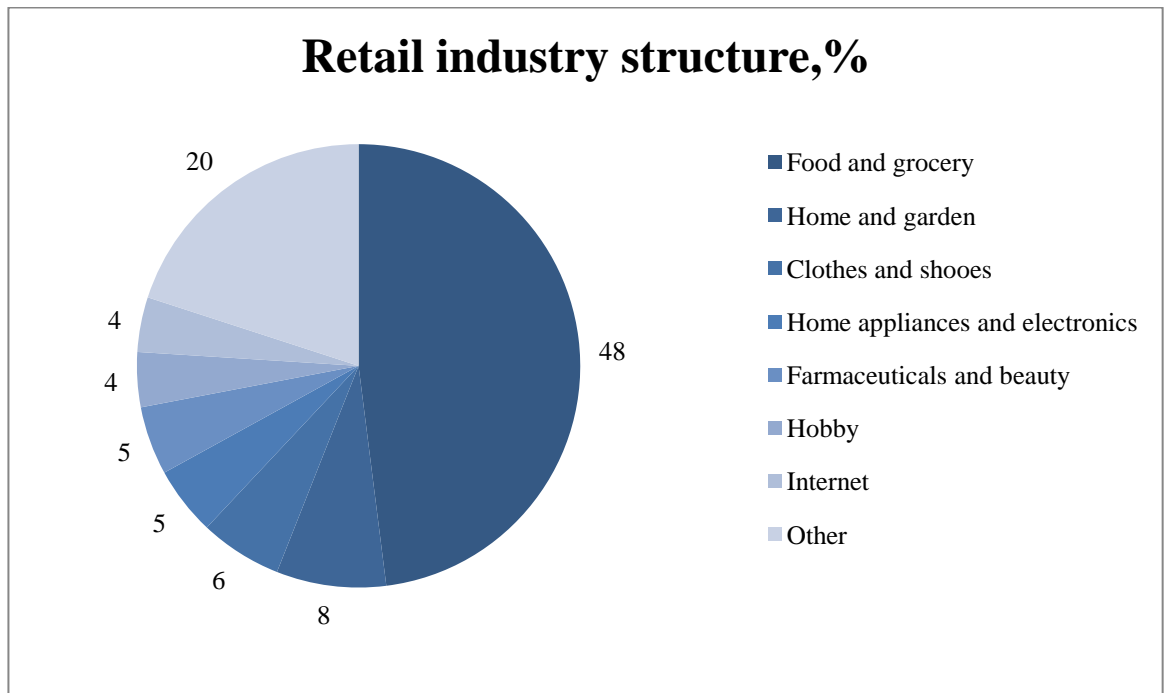
The economy of Russia has remained in recession since 2015 and is still under harsh pressure. Because of various adverse factors, including lower oil prices, instability of ruble and international sanctions, Russia experienced GDP decline, however, in 2017 the economy gave the signs to beginning of the recovery (X5 Retail Group Annual report).

Such economic conditions led to painful circumstances in people's wealth and consumer behavior. The household incomes decreased by 11% in the last 3 years, and consumer spending declined by 17% in the last 2 years (Lenta Annual report). According to the survey by PwC (PwC website), 84% of Russians are taking measures to cut the expenses either by buying less or buying cheaper goods. In such situation, the growth of retail industry has slowed down significantly (Picture 2.1). However, the trend remains positive.



Picture 2.1 Turnover of the Russian retail market. Source: statista.com

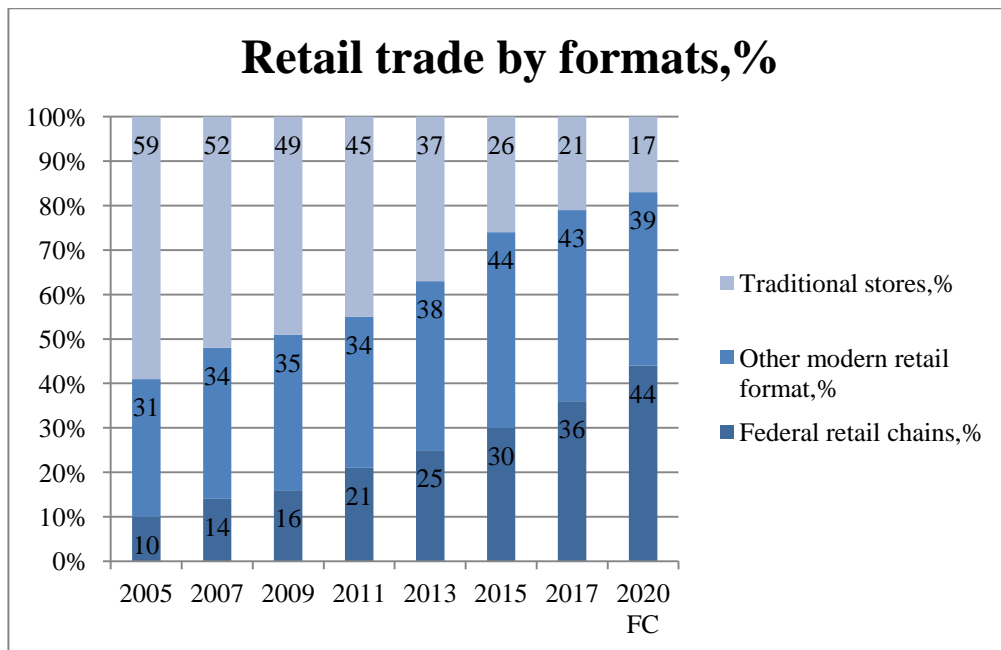
Considering the structure of Russian retail industry, it is necessary to mention that food and grocery retail constitutes almost a half of the market. After that, with a large gap the goods for home and garden, clothes and shoes, home appliances and electronics and other follow (Picture 2.2). Such situation is explained by the historical country specifics and low incomes of population in comparison to Western countries.



Picture 2.2. The structure of retail industry. Source: Retail CFO Forum

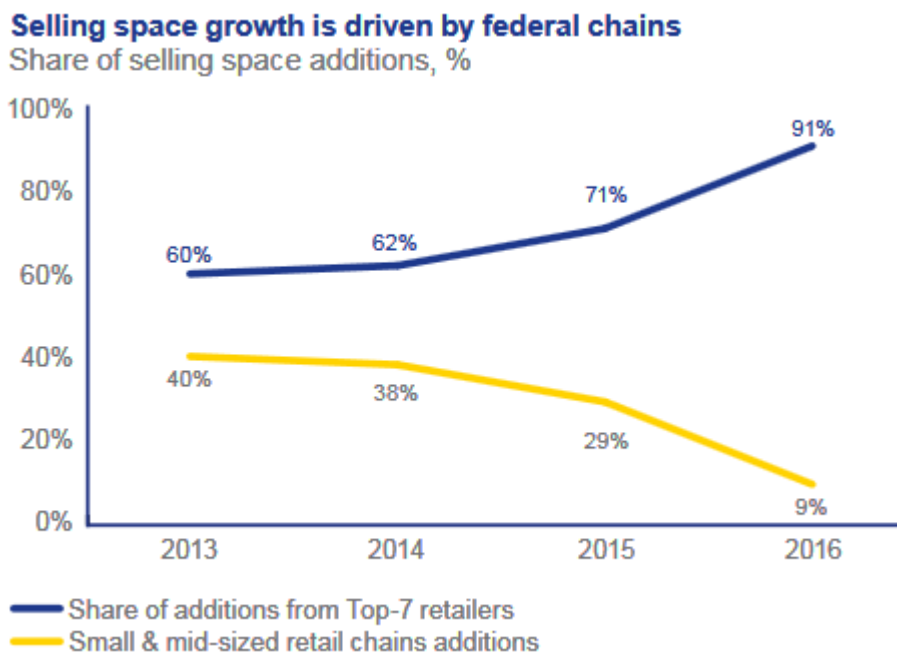
From the beginning of 2000 a new trend appeared in the retail trade formats – the opening of modern format hypermarkets and supermarkets with mixed assortment, including food and non-food goods. Such stores quickly began to take the market share from traditional shops, and such trend led to development of federal store chains, that often include multiformat stores in their portfolio, such as hypermarkets, supermarkets and convenience stores (Magnit website - History).

Since the beginning of 2000, the modern retail formats has been keeping gaining share from the traditional stores. According to the forecast, by 2020 the share of modern retail format will have achieved 80% of retail market. Besides, the market share of federal retail chains is growing in the very fast pace. From 2005 to 2015, it has achieved a 3-times increase. Moreover, according to the forecast, federal retail chains will have approach almost a half-of-the-market share in comparison to one third in 2017 (Picture 2.3).



Picture 2.3. Retail trade by formats, %. Source: X5 Retail Group Annual Report 2016

The realization of such forecast seems to be highly likely, as in the latest years the growth of retail industry was mostly driven by federal retail chains. Small and medium retailers have either stopped the expansion or slowed down the growth pace. At the same time, the initially low comparable growth taken by small and medium retailers has dropped dramatically since 2013 – from 40% in 2013 to 9% in 2016 (Picture 2.4).



Picture 2.4 Selling space additions, %. Source: Lenta Annual Report 2016

Summing up an the information above, the current situation for retail industry in Russia is challenging. However, there is a perspective of the future development of the market that depends mostly on future economic conditions in Russia. The major trend in the present time is the expansion of federal chains and the development of modern retail format stores.

Another relevant aspect is capital structure specifics of retail industry in comparison to other industries (table 2.1).

Table 2.1 Mean industry D/E. Source: Statista website.

Industry	Mean D/E
Retail	1,298
Banking	0,676
Construction	1,699
Oil and gas	0,646
Telecommunication	1,153
Automanufacturing	1,513

As it is obvious from the table, the relatively high share of debt in the capital structure is typical for retail industry. The D/E ratio is higher only in construction and automanufacturing from the industries for which the information is available.

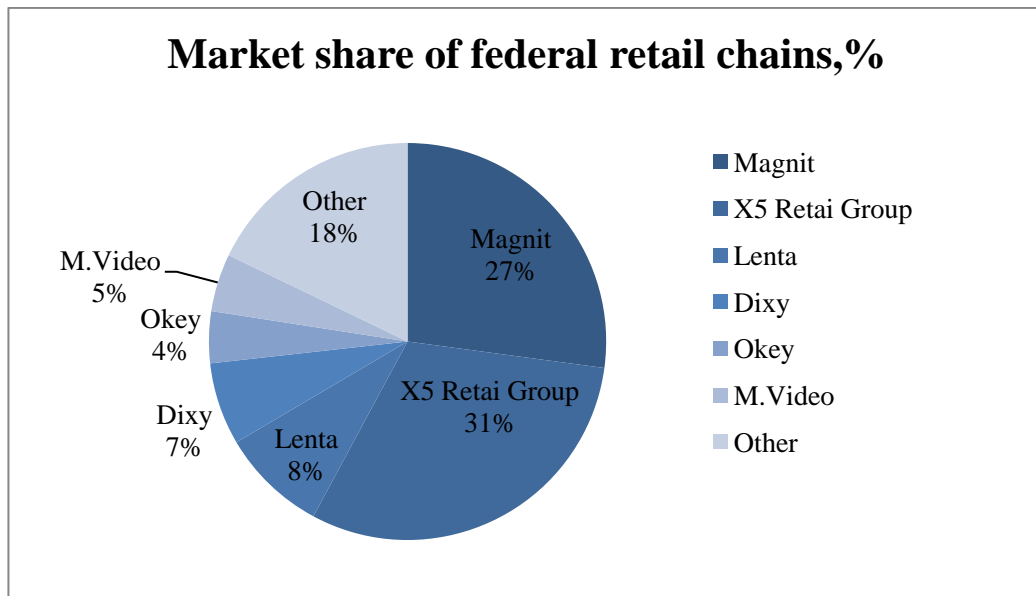
2.2 Major players

As it was discovered in the previous part, the federal retail chains, which are present in the majority of Russia's regions, represent more than one third of Russia's retail industry. Besides, only such companies are large enough to be a subject of capital structure research.

The absolute leaders of Russian retail industry are X5 Retail Group and Magnit, that are also the second and third largest non-state companies in the country. They are followed by Dixy Group and Lenta (20th and 21st largest non-state companies in Russia), and M.Video (37th place), Okey (38th place) (Forbes, The rating of largest Russian non-state companies, 2017). After Okey, there are some smaller regional retail chains, but the share of the market taken by them is significantly lower, so these companies are not taken to further analysis.

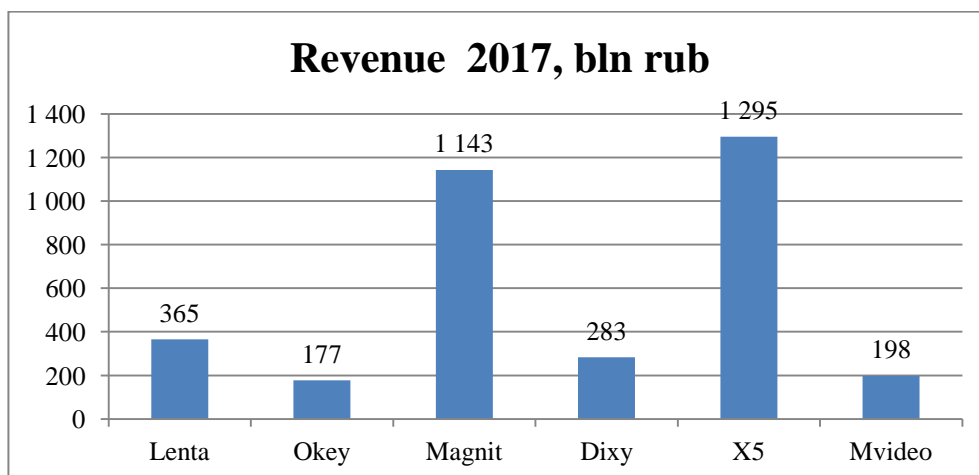
Altogether, top 6 Russian retailers: Magnit, X5 Retail Group, Dixy Group, Lenta, Okey and M.Video represent 82% of the federal retail chains segment (by revenue) (Picture 2.5). The 5

of 6 largest retailers operate in food and grocery retail segment, and the 6th one, M.Video, sells home appliances and electronics.

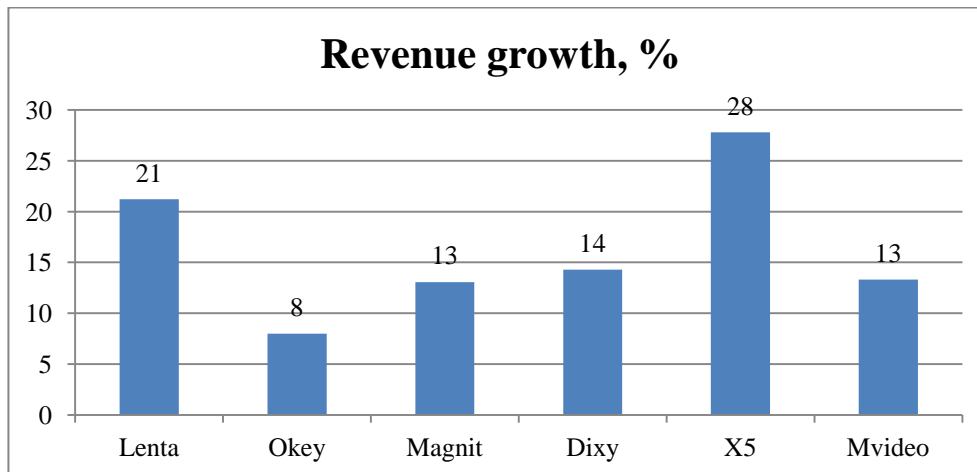


Picture 2.5 Market share of federal retail chains, % Source: prepared by the author on the data provided by Forbes, 2017.

Moreover, 4 out of 6 considered retail companies are included in the 50 fastest growing retail companies in the world (analyzed period 2011-2016). Lenta boasts the 10th place in the fastest 50, Magnit is on the 11th place, Dixy Group took 14th place and X5 Retail Group – 29th place. Okey and M.Video did not show sufficient growth to be present in the rating (Deloitte, Global Powers of Retailing, 2018). In the pictures 2.6, 2.7 below, the revenue and the revenue growth to previous year is shown.

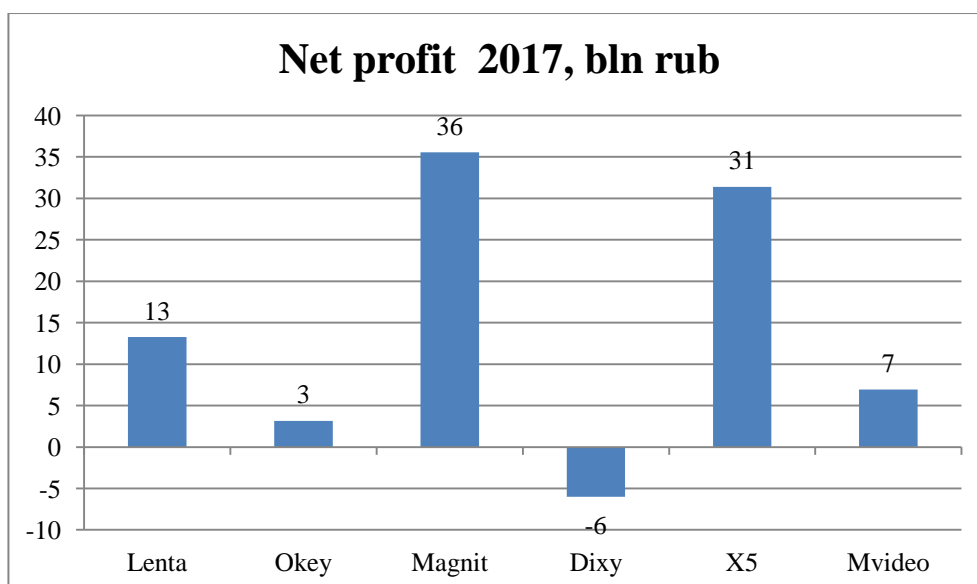


Picture 2.6 Revenue of top-6 retailers in 2017, bln roubles. Source: prepared by the author on the data provided by companies' annual reports.



Picture 2.7 Revenue growth of top-6 retailers, 2017 to 2016, %. Source: prepared by the author on the data provided by companies' annual reports.

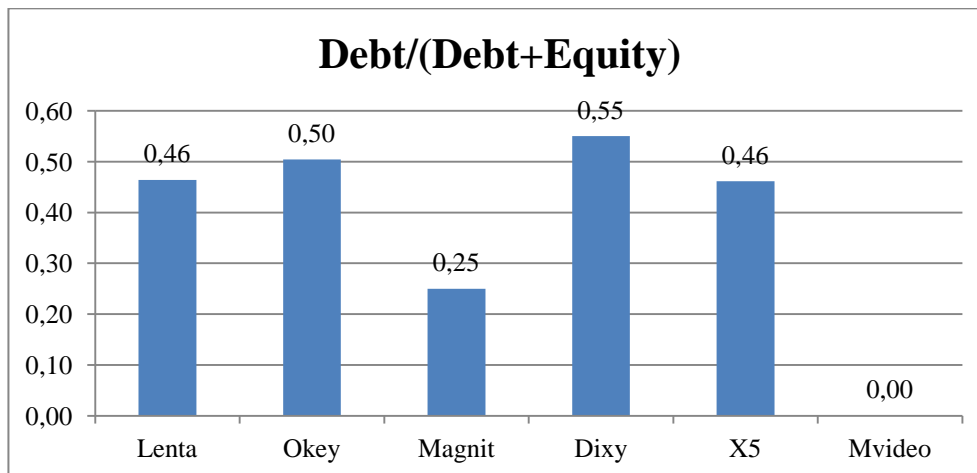
Another key indicator that is important when talking about the company's operations is net profit. Unfortunately, not all of the top-6 retailers managed to show a positive value of net profit. Dixy Group is the only one of the considered companies that has shown net loss in the results of 2017: -6 bln roubles. Other 5 companies achieved a net profit in a range of 3 to 35,5 bln. roubles (Picture 2.8).



Picture 2.8 Net profit of top-6 retailers in 2017, bln roubles. Source: prepared by the author on the data provided by companies' annual reports.

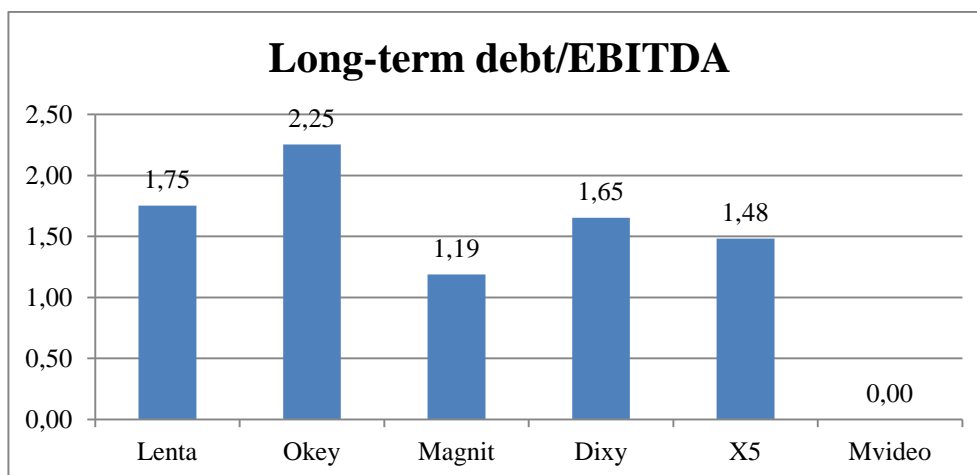
Considering the capital structure of the leading retail companies, Lenta, Okey, Dixy and X5 Retail Group possess relatively similar capital structures in terms of the share of debt in the

total financing. The value of the debt/(debt+equity) ratio for these four companies ranges from 46 to 55% (picture 2.9). Magnit and M.Video stand out of the majority with significantly less value of debt/(debt+equity) ratio: 25% for Magnit and 0% for M.Video. M.Video is the only company among the top-6 which does not attract long-term debt financing at all.



Picture 2.9 The value of debt/(debt+equity) ratio of top-6 retailers in 2017. Source: prepared by the author on the data provided by companies' annual reports.

The more informative indicator of capital structure is the long-term debt/EBITDA ratio, as it is focused on the firm's ability to pay its debt with the earnings. With the usage of this capital structure indicator, the capital structure situation among the major players is slightly different, the ratio's value ranges from 1,19 for Magnit to 2,25 for Okey (excluding M.Video as it does not attract long-term debt) (picture 2.10).



Picture 2.10 The value of long-term debt/EBITDA ratio of top-6 retailers in 2017. Source: prepared by the author on the data provided by companies' annual reports.

On the basis of the industry overview, it can be concluded that the retail industry in Russia has been showing a stable growth during the recent years, however, the growth pace is slowing down because of challenging economic situation and decreasing consumer spending.

Considering the structure of the industry, there are 3 main sectors: federal retail chains, which are aggressively gaining share from the other two, regional retailers of modern format and traditional stores. Federal retail chains are of interest to this research, from which top-6 comprise 82% of the market and are selected as a sample for empirical research.

The revenue among leading Russian retailers varies, however, all of them show significant revenue growth and 4 out of 6 are included in the list of the fastest growing retailers in the world. Nevertheless, only 5 out of 6 considered companies managed to show positive net profit in 2017.

In terms of capital structure, 5 out of 6 companies use debt financing in their capital structure. The share of debt in the capital structure is relatively similar within these 5 companies and represents a medium leverage, less than the industry's average D/E.

3. EMPIRICAL RESEARCH

3.1 Data

Several types of resources have to be used to complete the research successfully. To begin with, for the analysis of existing research articles covering the issue of capital structure, I used the GSOM e-databases as JSTOR etc. This is secondary type of data.

As dictated by the aims of the proposed research, empirical data have to be used for the study. The information on companies' current capital structure and complete financial reporting, including balance sheet, income&loss statement and cash flow statement is primarily of interest to the researcher. Such data is also secondary data type.

This information may be obtained by the review of firms' annual financial reports, which are available on corporate websites. Another important source of data is analytical reports produced by Thomson Reuters.

Besides, open source statistical and analytical data is used to complete the research. This includes the data from Aswath Damodaran website and Statista website.

As it was concluded in the industry analysis, only federal retail chains are of interest to the capital structure research. Meanwhile, 84% of market of federal retail chains is represented by top-6 largest retailers. So, top-6 largest retailers are selected as a sample for the research:

1. Magnit
2. X5 Retail Group
3. Dixy Group
4. Lenta
5. Okey
6. M.Video

The scope of research is chosen to be 7 years, from 2011 to 2017. The semiannual data will be gathered for the research. So, the companies' reports during that period are used. Consequently, a balanced panel of 84 observations is prepared.

Both information sources are considered as reliable and unbiased, thus, the information gathered from there is suitable for the research and will serve its purposes.

Secondary data is suitable for the research as the research questions of the present study do not require the knowledge of subjective opinions which are obtained through interviews, questionnaires etc.

3.2 Research methodology

In this study, regression analysis is applied for the purpose of estimation of the influence and its significance for the selected factors. To address the research questions in the most appropriate way, two regression models are built. Firstly, I need to estimate the correlation between the firm's value and capital structure, to prove the connection between these two elements. This is made in the model 1. Then, correlation between the capital structure and the selected factors has to be proved or disproved. It is achieved by the model 2. The factors, variables and the proxy-variables were selected on the basis of analysis conducted in the literature review part. The detailed explanation of the choice is provided in the literature review. Regression analysis serves a need to obtain an insight into the way how dependent variable changes if one of the independent variables is changed, while other variables constant. The details on why regression analysis is chosen as a research method are also provided in the literature review.

For the estimation of regression model, Eviews software package is used. The estimation technique is panel least squares. All the necessary tests to ensure applicability of the model are available in Eviews. The details on the tests used will be given on the following pages.

Model 1

The first regression model is aimed at estimation of the correlation between the firm's value and capital structure.

Drawing upon the literature review, the economic value added (EVA) is selected as an indicator of company's value, as it clearly shows whether the firm earns enough profit not only to cover the costs of capital, but also to reward an investor with an economic profit. EVA is most aligned with the economic profit made by the firm in comparison to other metrics.

After that, also based on the literature review, the ratio long-term debt/earnings before interest, tax, depreciation and amortization (Ltd/EBITDA) is chosen as an indicator of the firm's capital structure. The classification of variables is presented in the table 3.1.

Table 3.1 Classification of variables in model 1. Source: prepared by the author.

Variable type	Object measured	Proxy-variable	Proxy-var. measured as	Name
Dependent	Company's value	EVA	$EVA = NOPAT - IC * WACC$	EVA
Independent	Capital structure	Long-term debt/EBITDA	Long-term debt/EBITDA	Ltd/EBITDA

Then, the model specification is identified:

$$EVA_{it} = \alpha + \beta \frac{Itd}{EBITDA_{it}} + \mu_{it},$$

EVA – dependent variable

Itd/EBITDA – independent variable

α, β – coefficients

μ - error term

i,t – indices indicating a particular observation

The calculation of EVA was considered in the first chapter of this study. Another important aspect of research methodology is the calculation of WACC for obtaining EVA. The standard WACC formula (Brealey, Myers, 2000) is:

$$WACC = \frac{D}{D+E} R_D (1 - t) + \frac{E}{D+E} R_e.$$

where:

D – debt;

E – equity;

R_d – the cost of debt;

R_e – the cost of equity;

t – tax rate

To obtain the cost of debt, the following approach will be used. Firstly, the risk-free interest rate will be identified. In this study, the average yearly interest rate of 10 years government bonds RUGBITR10Y (Risk-free rates) is selected as a proxy for risk-free-rate. Next, the credit rating of each company will be obtained through Thomson Reuters database. After that, the average difference between the risk-free rate and the debt interest rate for the companies of Russia with various credit ratings will be obtained (Aswath Damodaran website). Finally, the cost of debt will be calculated as a sum of risk-free rate and the average difference between the risk-free rate and the cost of debt for the companies with the same credit rating.

To obtain the cost of equity, CAPM model (Brealey, Myers, 2000) will be used:

$$R_e = r_f + \beta(r_m - r_f) = r_f + \beta * r_{mp},$$

where

R_e – the cost of equity;

r_f - risk free interest rate;

β – company's beta;

r_m - market return;

r_{mp} – market risk premium

To obtain the cost of equity, the following information is needed. Firstly, the risk free-rate that was already used to calculate the cost of debt will be used. Secondly, company's beta is gathered through Thomson Reuters database. Finally, the market risk premium for the relevant market will be obtained from Statista website and Aswath Damodaran website (Market Risk Premium).

Model 2

The second regression model is aimed at estimation of the correlation between firm's capital structure and factors chosen:

1. Growth
2. Profitability
3. Accounts payable turnover
4. Inventory turnover

The detailed explanation of the choice of these particular factors and proxy-variables is provided in the literature review. The classification of variables used in the model is available in the table 3.2.

Table 3.2 Classification of variables for model 2. Source: prepared by the author.

Variable type	Object measured	Proxy-variable	Proxy-var. measured as	Name
Dependent	Capital structure	Long-term debt/EBITDA	Long-term debt/EBITDA	Ltd/EBITDA
Independent	Growth	Year-to-year growth of assets, %	Year-to-year growth of assets, %	GA
	Profitability	ROA	Net income/total assets	ROA
	Accounts payable turnover	Accounts payable turnover	365/(Total supplier purchases/average accounts payable)	APT

	Inventory turnover	Inventory turnover	(Average inventory/COGS)*365	IT
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After that, the model specification should be identified:

$$ltd/EBITDA_{it} = \alpha + cGA_{it} + dROA_{it} + eAPT_{it} + fIT_{it} + \mu_{it},$$

where

ltd/EBITDA – dependent variable

GA, ROA, APT, IT – independent variables

α , c, d, e, f – coefficients

μ - error term

i,t – indices indicating a particular observation

Model testing

In order to ensure the correctness of the regression analysis results, each model will be tested by the following tests incorporated in the Eviews software.

1. R^2 – a metric that indicates the model's goodness of fit.

Literally, it shows how close the original data is placed to the fitted regression line. The R-squared value shows what percentage of the variance in dependent variable is explained by the variance in the independent variables. The greater the R-squared value, the better the model explains the variance in the dependent variable. R-squared is measured in the range between 0 and 1. The closer R^2 is to 1, the better the model's goodness of fit.

2. Test of significance, F-test.

The significance of coefficients is defined through p-value that corresponds to a coefficient. If $p\text{-value} \leq 0,05$, the null hypothesis (coefficient is not significant) can be rejected. F-test is the test for overall regression significance. F- test is compared with P value of the overall test on significance. If the P value is less than F-test, the null hypothesis is rejected and it means that the given model offers a better fit than the intercept one.

3. Normality test

Normality is one of the assumptions related to the error term that guarantees a model's applicability. If the error term is not normally distributed, ordinary least squares technique does not provide applicable results. Many statistical tests are developed to check the normality of disturbances: Shapiro-Wilks, White's test, Bera-Jarque test and others. However, in Eviews not all of these tests are available for every model. So, in the research I used Jarque- Bera test, which represents asymptotically chi-squared distribution with the degree of freedom equal to 2.

4. Heteroskedasticity test

Another important assumption that needs to be satisfied to obtain applicable results is homoskedasticity of disturbances. Homoskedasticity means that the variance of disturbances is constant and finite. I used Breusch-Pagan-Godfrey test in Eviews to detect the heteroskedasticity.

5. Autocorrelation test

The third important assumption that needs to be fulfilled to obtain applicable results is an assumption that there is no autocorrelation between disturbances. I used Durbin-Whatson test to detect if the assumption is fulfilled.

Besides, to ensure that the results are not affected by the initial connection of factors with EBITDA, the correlation between the EBITDA and the factors considered in the second model will be tested with the help of Excel. The graph, equation and correlation coefficients will be obtained. There should not be such correlation.

On the basis of the results obtained in each of the research questions, the conclusion on the presence and the type of effect of capital structure on company's value will be made. The recommendations on capital structure for Russian retailers will be formulated. Besides, the conclusion on the presence and the type of the effect of selected factors on capital structure will be made. On the basis of obtained results, the recommendations on how to manage the capital structure through these factors will be made.

Thus, the selected methodology enables to find answers for each of the research questions and to fulfil the research goal.

3.2 Empirical findings

After the research methodology was identified, the regression can be run and the research hypotheses stated in the literature review part can be tested. Let us consider the results of regression analysis for each model separately.

Model 1

The regression results obtained for model 1 are summarized in the table 3.3. The total estimation output can be found in the appendix. Independent variable in model 1 is company's value expressed by EVA.

Table 3.3 Regression results for model 1. Source: calculated by the author.

Dependent variable	Coefficient	St. error	t-Statistics	P-value
a (constant)	-3140324	1372890	-2,29	0,0247
Ltd/EBITDA	-829731,4	334943	-2,48	0,0153

Interpretation of the results includes consideration of the following issues:

1. Value of coefficients

There are two coefficients in the model: the one that corresponds to constant (a), and the one that corresponds to ltd/EBITDA. The first one equals -3140324 and represents an intercept point of the regression graph with an axis.

The second one equals -829731,4 and represents the change in EVA with one point change in ltd/EBITDA ratio. The negative sign of the coefficient means that when the ltd/EBITDA value grows, EVA decreases.

2. Significance of variables

The significance of coefficients is defined through p-value that corresponds to a coefficient. If $p\text{-value} \leq 0,05$, the null hypothesis can be rejected at 5% level of significance. The null hypothesis for this model is that there is no correlation between the ltd/EBITDA and EVA. The $p\text{-value} = 0,0153 \leq 0,05$, consequently, the null hypothesis can be rejected, meaning that there is the correlation between the ltd/EBITDA and EVA of the company. The coefficient related to a constant is also significant.

Then, the tests selected in the research methodology part are performed. The results are presented in the table 3.4. Full estimation output can be found in the appendix.

Table 3.4 Tests' results for model 1. Source: calculated by the author.

Test	Result
R-squared	0,3696
F-test	$p\text{-value}(F\text{-statistic}) = 0,0153$
Normality test	Jarque-Bera = 0,45; Prob = 0,8
Heteroskedasticity test	$P\text{-value} = 0,06$
Autocorrelation test	2,32

Interpretation of obtained results is the following:

1. Overall regression significance

Overall regression significance is measured by F-test and F-statistics. The rule is similar to the previous one. In this case, $F\text{-value} = 0,015 \leq 0,05$, consequently, the regression is significant.

2. Goodness of fit

The most frequently used measure of the goodness of fit of the model is the R-squared. The R-squared value shows what percentage of the variance in dependent variable is explained by the variance in the independent variables. The greater the R-squared value, the better the model explains the variance in the dependent variable. For this model, R-squared is equal to 0,36 meaning that 36% of the variance in EVA is explained by the model.

Such may be considered as a low result for the majority of models, however, in this case, as there is only one independent variable, and the nature of EVA is so that there are many factors that might influence it, such result is a good one. It proves that the connection between EVA and ltd/EBITDA is very strong.

3. Normality test

The prob = 0,8 is the likelihood of Jarque-Bera statistics = 0,45 if the disturbances are normally distributed. 80% likelihood is a sufficient value, so the disturbances can be considered normally distributed.

4. Heteroskedasticity test

The null hypothesis for heteroskedasticity test is that there is no heteroskedasticity detected in the disturbances. As p-value = 0,06, the null hypothesis cannot be rejected at 5% level of significance meaning there is no heteroskedasticity of disturbances in the model.

5. Autocorrelation test

Durbin-Watson test statistics takes values in the range from 0 to 4. If test statistics is close to 2, there is no autocorrelation among disturbances. In this case, test statistics = 2,3, meaning there is no autocorrelation detected.

Model 2

The regression results obtained for model 2 are summarized in the table 3.5. The total estimation output can be found in the appendix. Independent variable in model 2 is company's capital structure expressed by long-term debt/EBITDA.

Table 3.5 Regression results for model 2. Source: calculated by the author.

Dependent variable	Coefficient	St. error	t-Statistics	P-value
a (constant)	5,53	0,51	10,83	0,00
GA	-0,71	0,76	-0,94	0,35

ROA	-25,97	21,73	-1,2	0,07
APT	-0,04	0,01	-3,8	0,00
IT	0,09	0,01	7,22	0,00

Interpretation of the results includes consideration of the following issues:

1. Value of coefficients

There are five coefficients in the model: the one that corresponds to constant (C), and the coefficients that correspond to GA, ROA, APT, IT. The first one equals 5,53 and represents an intercept point of the regression graph with an axis.

The other ones represents the change in ltd/EBITDA with one point change in GA, ROA, APT, IT. The negative sign of the coefficient means that when the value of the variable grows, ltd/EBITDA decreases. The positive value of coefficient shows the opposite relationship.

2. Significance of variables

The significance of coefficients is defined through p-value that corresponds to a coefficient. If $p\text{-value} \leq 0,05$, the null hypothesis can be rejected at 5 % level of significance. The null hypothesis for this model is that there is no correlation between the independent variables and ltd/EBITDA. In this model, there are 2 significant independent variables: APT ($p\text{-value} = 0,00 \leq 0,05$) and IT ($p\text{-value} = 0,00 \leq 0,05$), consequently, the null hypothesis for this variables can be rejected, meaning that there is the correlation between the APT, IT and ltd/EBITDA. The coefficient related to a constant is also significant.

Then, the tests selected in the research methodology part are performed. The results are presented in the table 3.6. Full estimation output can be found in the appendix.

Table 3.6 Tests' results for model 2. Source: calculated by the author.

Test	Result
R-squared	0,71
F-test	$p\text{-value}(F\text{-statistic}) = 0,00$
Normality test	Jarque-Bera = 0,14; Prob =0,93
Heteroskedasticity test	P-value = 0,08
Autocorrelation test	1,77

Then, the appropriate tests were conducted in order to ensure the usability of the model.

1. Overall regression significance

Overall regression significance is measured by F-test and F-statistics. The rule is similar to the previous one. In this case, $F\text{-value} = 0,00 \leq 0,05$, consequently, the regression is significant.

2. Goodness of fit

The most frequently used measure of the goodness of fit of the model is the R-squared. The R-squared value shows what percentage of the variance in dependent variable is explained by the variance in the independent variables. The greater the R-squared value, the better the model explains the variance in the dependent variable. For this model, R-squared is equal to 0,71 meaning that 71% of the variance in ltd/EBITDA is explained by the model.

3. Normality test

The prob = 0,93 is the likelihood of Jarque-Bera statistics = 0,14 if the disturbances are normally distributed. 93% likelihood is a sufficient value, so the disturbances can be considered normally distributed.

4. Heteroskedasticity test

The null hypothesis for heteroskedasticity test is that there is no heteroskedasticity detected in the disturbances. As $p\text{-value} = 0,08$, the null hypothesis cannot be rejected at 5% level of significance meaning there is no heteroskedasticity of disturbances in the model.

5. Autocorrelation test

Durbin-Watson test statistics takes values in the range from 0 to 4. If test statistics is close to 2, there is no autocorrelation among disturbances. In this case, test statistics = 1,77, meaning there is no autocorrelation detected.

Additional tests were performed in order to ensure that there is no correlation between the factors (GA, ROA, APT, IT) and EBITDA. For each of four factors, the correlation coefficient did not increase 0,2, thus, it can be concluded that there is no correlation between the factors and EBITDA. The Excel output is available in the appendix.

3. 3 Results analysis and recommendations

With regard to regression analysis results, it is now possible to formulate the answers to the research questions. First of all, the hypothesis of connection between the company's value (represented by EVA) and the company's capital structure (represented by long-term debt/EBITDA) is now supported by the results of empirical research.

However, the nature of this connection is surprising. As it was considered in the analysis of literature, the general relationship between company's value and company's capital structure is such that the more the share of debt in the capital structure, the greater the company's value. This pattern is based on the assumption that the cost of debt is lower than the cost of equity. Nevertheless, for the selected sample of Russian retailers this scheme does not work. In fact, there is an opposite relationship: the greater the share of debt, the less the company's value.

This tendency is explained by the fact that, in the current economic situation in Russia, the relatively high level of debt in a company's capital structure is accompanied by the lower company's credit rating in comparison to competitors with the lower share of debt in the capital structure. In turn, the low credit rating increases the cost of debt and, consequently, the weighted average cost of capital. Thus, in the current state of the industry, the increase in the share of debt in the company's capital structure decreases the firm's value.

Considering the second research question, the identification of factors that influence capital structure, the results obtained were partly expectable. The hypothesis of connection between the factor of growth (represented by year-to-year growth of assets, %), profitability (represented by ROA) and company's capital structure (represented by long-term debt/EBITDA) was rejected by the results of regression analysis, as the variables were not significant.

At the same time, the hypothesis of connection between the accounts payable turnover (days), inventory turnover (days) and the capital structure was supported by the results of regression analysis. As it was expected, the direct relationship between the inventory turnover (days) and the share of debt in the capital structure was proved. The more days it takes a company to sell its inventory, the more working capital is needed to cover the costs of inventory, and the greater the share of debt in the company's capital structure.

On the opposite, the inverse relationship is proven in the case of accounts payable turnover (days) and the capital structure. The greater the accounts payable turnover, the less working capital is needed to maintain operations, and the less the share of debt in the company's capital structure is.

Taking into account the obtained results, the following recommendations can be provided for the managers in Russian retail companies who wish to increase the value of the company with the help of appropriate capital structure.

To begin with, it is recommended to decrease or at least not to increase the level of debt in the company's capital structure (long-term debt/EBITDA). Even though such advice is untypical for the problem, in the current situation the increase in the share of debt in the capital structure is likely to lead to the decrease in the company's value. Such recommendation is relevant to the current condition of the industry and might not be reasonable in the future years.

However, for the present time it is recommended to decrease or not to increase the level of debt in the capital structure.

On the basis of the research, it is also possible to provide recommendations on how to achieve such value-increasing capital structure. To achieve the lower share of debt in the firm's capital structure, it is necessary to focus the efforts of management on the factors that influence capital structure: accounts payable turnover and inventory turnover.

The measures on increasing the accounts payable turnover (days) should be taken. Let us consider once again a formula for calculation of accounts payable turnover: $\text{Accounts payable turnover} = 365 / (\text{Total supplier purchases} / \text{average accounts payable})$. Obviously, only the denominator of the ratio can be managed. So, to increase the number of days the payables are outstanding, the managers should decrease the ratio $\text{Total supplier purchases} / \text{average accounts payable}$. It can be done in the following ways:

1. Better forecasting of demand

If the company manages to improve the precision of the demand forecasting, it would be possible to order the accurate amount of goods that is needed: not more than is likely to be sold in the selected period. This would decrease total supplier purchases and increase the accounts payable turnover (days), which is an aim in this case.

2. Negotiating better terms of payment with the suppliers

If the company manages to agree on the more favourable conditions of payment with suppliers, such as a longer credit period before the goods are paid for and/or the greater amount of credit limit of goods that can be purchased with delayed payment. This would increase the average accounts payable, thus, increasing the accounts payable turnover (days).

Besides, inventory turnover requires management's attention to achieve lower level of debt in the capital structure. The managers should take efforts to decrease the inventory turnover (days). Considering the formula, $\text{inventory turnover} = (\text{Average inventory} / \text{COGS}) * 365$. Obviously, there are some ways to decrease the ratio $\text{Average inventory} / \text{COGS}$:

1. Better interaction between purchasing and sales departments

Improved interaction between the purchasing and sales departments of the company, together with better forecasting of demand from the previous part would enable to order the amount of goods that is not significantly more than it is likely to sell. This would decrease average inventory, thus, decreasing inventory turnover in days.

2. Introducing promo prices for non-moving goods.

In the situation when the particular goods are sold very slowly or there haven't been any sales of such goods at all for particular period, the management should introduce discounts

(promo prices) for such goods to encourage sales of these goods and the decrease in its inventory. This would decrease average inventory, thus, decreasing inventory turnover.

With these recommendations implemented, the managers of the company can achieve an increase in the company's value.

CONCLUSION

In immediate economic conditions, particularly the constant growth of competition across all industries, the instability of the financial and the raw materials market and, thus, increasing uncertainty, it is crucial for companies to examine the intrinsic factors which might increase the value of the company, and capital structure is one of such factors.

In this research, the effect of capital structure on the value of the company is studied on the case of Russian retail companies. The value-based management approach is applied for identifying the company's value, and EVA is chosen as a value metric.

Then, the capital structure problem is critically analyzed by the review of existing studies. After the analysis had been performed, it was concluded that there is no unified approach to capital structure choice. On the basis of the analysis hypotheses were stated. Besides, the factors that are proved to influence capital structure by the results of several studies were discovered. The factors selected for further study include: growth, profitability, accounts payable turnover, inventory turnover. As a measure of capital structure, long-term debt/EBITDA metric was selected as it provides most relevant information on the current level of debt.

After that, the industry analysis was performed to gain an insight into the current state of the industry and the trends of its development. On the basis of the industry analysis, the sample of companies for the research was selected: Lenta, Magnit, X5 Retail Group, Dixy Group, Okey and M.Video. These companies are top-6 Russian retailers and represent 82% of the federal retail chains market.

Next, the regression analysis was performed to answer the research questions. Two regression models were built for the purposes of the research. The first one is aimed at proving the connection between the firm's capital structure and the firm's value. The second one is aimed at identification of the factors that influence capital structure.

The results proved that there is a connection between the company's value and capital structure, however, the nature of such connection is surprising – the greater the share of debt in the company's capital structure, the less the company's value. This is a current specific of Russian retailers.

The only factors that are proved to be significant in influencing company's capital structure are accounts payable turnover and inventory turnover. The greater the value of inventory turnover (days), the greater the share of debt in the company's capital structure. On the opposite, the greater the value of accounts payable turnover (days), the less the share of debt in the company's capital structure.

On the basis of the research results, the following recommendations were provided for Russian retail companies:

1. In order to increase company's value, the share of debt in the company's capital structure (long-term debt/EBITDA) should be decreased or at least not further increased.
2. To manage the company's capital structure in order to increase company's value, control should be imposed on the accounts payable turnover and inventory turnover. The companies should aim at decreasing the days of inventory turnover and at increasing the days of accounts payable turnover. These might be done by taking the following measures: improving the forecasting of demand and the interaction between sales and purchasing departments, negotiating better payment conditions with suppliers and introducing discounts in case there is a non-moving inventory of particular goods.

On the basis of the above, it can be concluded that the research goal is fulfilled and all research questions are answered. Besides, practical recommendations to Russian retail companies are provided.

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Original data from financial statements

Company	Item*	2011(1)	2011(2)	2012(1)	2012(2)	2013(1)	2013(2)
Lenta	COGS	29222	43833	39598	47635	48958	63849
Lenta	Operating profit	2568	3851	4342	5823	5499	8263
Lenta	EBITDA	1278	2064	5083	6657	6577	9498
Lenta	Net profit	679	1018	2434	2702	2553	4563
Lenta	Total assets	34284	37853	46448	55042	60982	88330
Lenta	Long-term debt	12442	24885	24932	24979	34959	39900
Lenta	Accounts payable	16372	18126	21662	25198	15526	28927
Lenta	Inventory	7157	7569	8471	9374	8763	12994
Lenta	Current liabilities	23493	18954	24540	30126	21874	41461
Okey	COGS	33713	38140	41946	47760	49852	56273
Okey	Operating profit	1916	3463	2722	4604	3025	4851
Okey	EBITDA	2813	4679	3776	5690	4249	6405
Okey	Net profit	1081	2151	1470	3209	1614	3363
Okey	Total assets	33145	43732	43417	53414	52142	64647
Okey	Long-term debt	6681	6768	4915	9864	12809	14442
Okey	Accounts payable	7967	13886	10109	17344	13399	21847
Okey	Inventory	5331	7918	6658	9212	7782	10258
Okey	Current liabilities	11585	21052	21964	23736	19460	28106
Magnit	COGS	122269	134051	155358	176520	199759	218021
Magnit	Operating profit	6020	12789	15017	20265	20485	30046
Magnit	EBITDA	9415	17108	20071	26200	27104	37417
Magnit	Net profit	4017	8394	10405	14735	14557	21213
Magnit	Total assets	133715	175370	177742	221834	230778	269498
Magnit	Long-term debt	34741	45860	45097	38473	30067	37626
Magnit	Accounts payable	22723	33564	30345	43175	39918	47769
Magnit	Inventory	22530	29142	31048	41268	41905	56371
Magnit	Current liabilities	40758	46665	41799	77342	84465	96587
Dixy	COGS	29834	44751	41949	62923	61247	63887
Dixy	Operating profit	1382	2074	1794	2691	2931	4627
Dixy	EBITDA	2568	3852	3384	5076	5327	7466
Dixy	Net profit	441	661	421	631	703	2352
Dixy	Total assets	57100	63201	64815	75178	77612	80047
Dixy	Long-term debt	13204	10066	19508	23717	26178	28639
Dixy	Accounts payable	11234	15893	14073	19129	18269	17409
Dixy	Inventory	5709	7856	6815	8937	9520	10103
Dixy	Current liabilities	18816	28481	20227	25906	24467	23028
X5 Retail	COGS	171847	174202	183783	190935	197498	206714
X5 Retail	Operating profit	9950	10815	10360	-4486	11080	14216
X5 Retail	EBITDA	13197	19796	13720	20579	15289	22933
X5 Retail	Net profit	4888	4098	4139	-8119	4305	6679

X5 Retail	Total assets	256366	283635	270000	291043	281899	302097
X5 Retail	Long-term debt	96769	86867	91818	71269	68152	79843
X5 Retail	Accounts payable	41227	61374	51300	72801	62437	85076
X5 Retail	Inventory	23913	28814	26363	33863	30620	37465
X5 Retail	Current liabilities	84966	119253	102110	148362	137862	139088
Mvideo	COGS	34875	49525	44159	56479	50999	61208
Mvideo	Operating profit	1141	3460	1508	3864	1693	5074
Mvideo	EBITDA	1906	4333	2517	5008	2931	6469
Mvideo	Net profit	766	2608	1208	2933	1296	4433
Mvideo	Total assets	32030	53347	46875	57945	47282	72546
Mvideo	Long-term debt	0	0	0	0	0	0
Mvideo	Accounts payable	15507	32673	21109	35586	25498	47159
Mvideo	Inventory	16721	24487	23261	32259	26869	34215
Mvideo	Current liabilities	21279	40103	33457	47045	35141	58603

Company	Item*	2014(1)	2014(2)	2015(1)	2015(2)	2016(1)	2016(2)	2017(1)	2017(2)
Lenta	COGS	67515	82737	90020	106537	109430	129154	127996	158946
Lenta	Operating profit	6590	11069	9015	13317	10076	13620	10880	14696
Lenta	EBITDA	8285	12900	11677	16279	13437	17736	15293	19314
Lenta	Net profit	2679	6396	2966	7323	4326	6876	4492	8772
Lenta	Total assets	92635	141245	140669	178392	172919	226170	215879	246731
Lenta	Long-term debt	44889	58555	55302	65149	61022	66956	78543	62194
Lenta	Accounts payable	22207	41081	27728	42002	32681	46613	26501	46717
Lenta	Inventory	12718	19629	17609	22782	21803	27491	27672	36933
Lenta	Current liabilities	36674	62181	50367	60858	54132	93483	66156	104362
Okey	COGS	55131	59647	57801	66342	65004	70257	66531	70479
Okey	Operating profit	3406	5159	2589	3258	667	2728	507	7083
Okey	EBITDA	4874	6215	4623	5279	3315	5659	3204	5574
Okey	Net profit	1695	3531	621	1296	-786	648	-1478	4645
Okey	Total assets	66992	86579	81028	90079	83011	93093	78785	91457
Okey	Long-term debt	17140	19655	19739	23558	23719	31673	33837	24679
Okey	Accounts payable	17321	26273	17696	24001	18802	29374	17625	25947
Okey	Inventory	8924	12859	10593	12628	10675	13707	11543	13524
Okey	Current liabilities	28043	41813	35876	41104	34510	37933	24480	41516
Magnit	COGS	254182	294407	333223	353905	382622	400991	406745	440046
Magnit	Operating profit	28356	44229	39268	46842	38850	41678	32315	25848
Magnit	EBITDA	36483	53044	49031	57617	50617	54953	48149	41886
Magnit	Net profit	19597	28683	25379	34156	26058	28072	20732	14730
Magnit	Total assets	283094	355722	355888	404563	412271	459461	469935	526849
Magnit	Long-term debt	54989	45822	39269	59466	34683	78274	32884	86424
Magnit	Accounts payable	49854	68124	63100	87436	71743	82751	75180	93700
Magnit	Inventory	60121	84066	86580	116578	122687	136264	149941	162366
Magnit	Current liabilities	80621	150726	149399	166795	178673	167369	208822	158215
Dixy	COGS	74486	85013	93308	99329	115024	113040	103669	103250
Dixy	Operating profit	4330	5943	3219	2743	1987	-1149	511	-3705
Dixy	EBITDA	7400	8960	6818	6549	6228	3339	4708	6244

Dixy	Net profit	1965	2526	807	-219	-441	-2346	-1447	-4568
Dixy	Total assets	84184	88321	90721	101553	97730	98665	84285	80969
Dixy	Long-term debt	26919	25200	26145	26870	21682	29602	27387	17690
Dixy	Accounts payable	19148	20886	23140	32129	28691	34886	26606	30114
Dixy	Inventory	12485	14867	16403	22299	18570	19822	15497	18157
Dixy	Current liabilities	26737	30447	31167	41543	43643	39544	28926	48323
X5 Retail	COGS	226990	251901	289637	320791	367246	416436	466646	519424
X5 Retail	Operating profit	13197	15091	18991	15458	25864	19767	32498	25260
X5 Retail	EBITDA	18295	27442	20887	31331	30408	45613	38376	57563
X5 Retail	Net profit	6449	6242	7942	6232	13004	9287	18698	12696
X5 Retail	Total assets	301533	350920	349030	402115	417084	473485	519372	565258
X5 Retail	Long-term debt	89632	115152	98250	101545	112937	110865	123244	135622
X5 Retail	Accounts payable	76869	97883	82264	112214	106752	143070	144532	145994
X5 Retail	Inventory	37009	47084	50400	57887	62970	73801	86551	99300
X5 Retail	Current liabilities	123110	141273	148703	190880	180044	227370	245773	264175
Mvideo	COGS	52948	75861	52392	72809	64176	77873	63647	90651
Mvideo	Operating profit	1311	9020	2922	2983	2404	4122	2848	5332
Mvideo	EBITDA	2696	10444	4564	4572	4326	5860	4558	7236
Mvideo	Net profit	1122	7052	2542	2241	2091	3335	2492	4462
Mvideo	Total assets	50868	91518	60318	87607	70729	100301	80900	121525
Mvideo	Long-term debt	0	0	0	0	0	0	0	0
Mvideo	Accounts payable	25622	57428	32784	58162	42035	66285	48084	77698
Mvideo	Inventory	28726	35434	34070	43913	40099	45170	39562	52283
Mvideo	Current liabilities	39313	77165	48971	73540	58077	84275	62453	98367

Source: companies' websites

* in mln roubles

Calculated WACC

	Lenta	Okey	Magnit	Dixy	X5 Retail Group	Mvideo
2011	11%	17%	12%	12%	15%	15%
2011	13%	17%	12%	12%	14%	15%
2012	10%	17%	12%	12%	15%	15%
2012	9%	18%	12%	11%	14%	15%
2013	10%	19%	12%	12%	14%	16%
2013	10%	19%	12%	12%	14%	16%
2014	11%	18%	13%	13%	15%	16%
2014	11%	18%	13%	13%	15%	16%
2015	13%	20%	14%	14%	18%	19%
2015	13%	20%	14%	14%	18%	19%
2016	14%	19%	14%	14%	17%	18%
2016	14%	19%	14%	14%	17%	18%
2017	13%	18%	13%	13%	16%	17%
2017	13%	18%	13%	13%	16%	17%

Source: calculations are made by the author

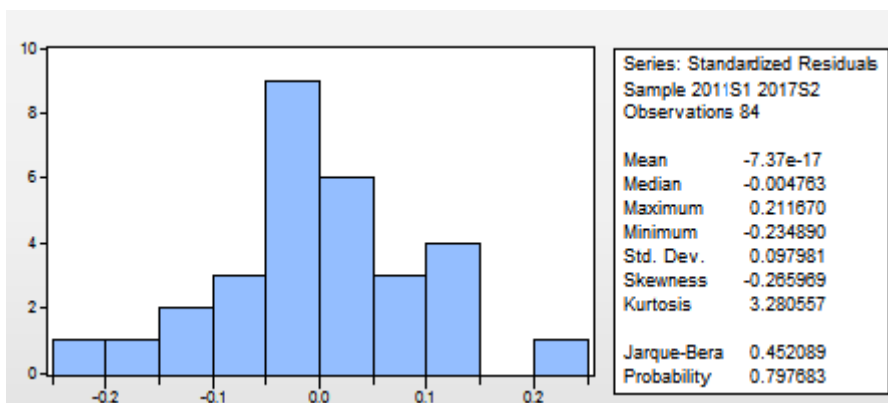
Estimation output for model 1

Dependent Variable: EVA
 Method: Panel Least Squares
 Date: 04/22/18 Time: 17:48
 Sample: 2011S1 2017S2
 Periods included: 14
 Cross-sections included: 6
 Total panel (balanced) observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3140324.	1372890.	-2.287382	0.0247
LTD_EBITDA	-829731.4	334943.5	-2.477228	0.0153
R-squared	0.369627	Mean dependent var		-5834648.
Adjusted R-squared	0.358281	S.D. dependent var		7912397.
S.E. of regression	7678366.	Akaike info criterion		34.56923
Sum squared resid	4.83E+15	Schwarz criterion		34.62711
Log likelihood	-1449.908	Hannan-Quinn criter.		34.59250
F-statistic	6.136660	Durbin-Watson stat		2.322419
Prob(F-statistic)	0.015295			

Model tests for Model 1

Normality test



Heteroskedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	3.715402	Prob. F(1,82)	0.0574
Obs*R-squared	3.641046	Prob. Chi-Square(1)	0.0564
Scaled explained SS	1.487028	Prob. Chi-Square(1)	0.2227

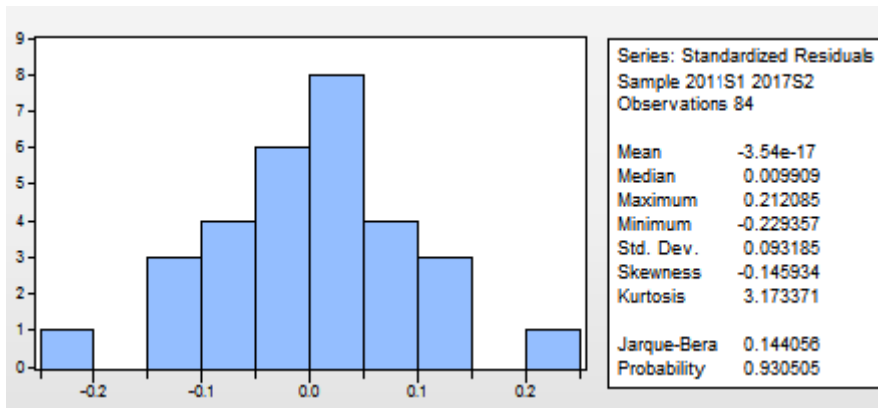
Estimation output for model 2.

Dependent Variable: LTD_EBITDA
 Method: Panel Least Squares
 Date: 04/22/18 Time: 17:50
 Sample: 2011S1 2017S2
 Periods included: 14
 Cross-sections included: 6
 Total panel (balanced) observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.532453	0.510815	10.83063	0.0000
GA	-0.713535	0.761011	-0.937615	0.3513
ROA	-25.97065	21.73476	-1.194890	0.0720
APT	-0.043256	0.011367	-3.805506	0.0003
IT	0.093182	0.012911	7.217221	0.0000
R-squared	0.707358	Mean dependent var		3.247225
Adjusted R-squared	0.687477	S.D. dependent var		2.516276
S.E. of regression	1.616153	Akaike info criterion		3.855652
Sum squared resid	206.3440	Schwarz criterion		4.000344
Log likelihood	-156.9374	Hannan-Quinn criter.		3.913817
F-statistic	30.55023	Durbin-Watson stat		1.773635
Prob(F-statistic)	0.000000			

Model tests for Model 2

Normality test



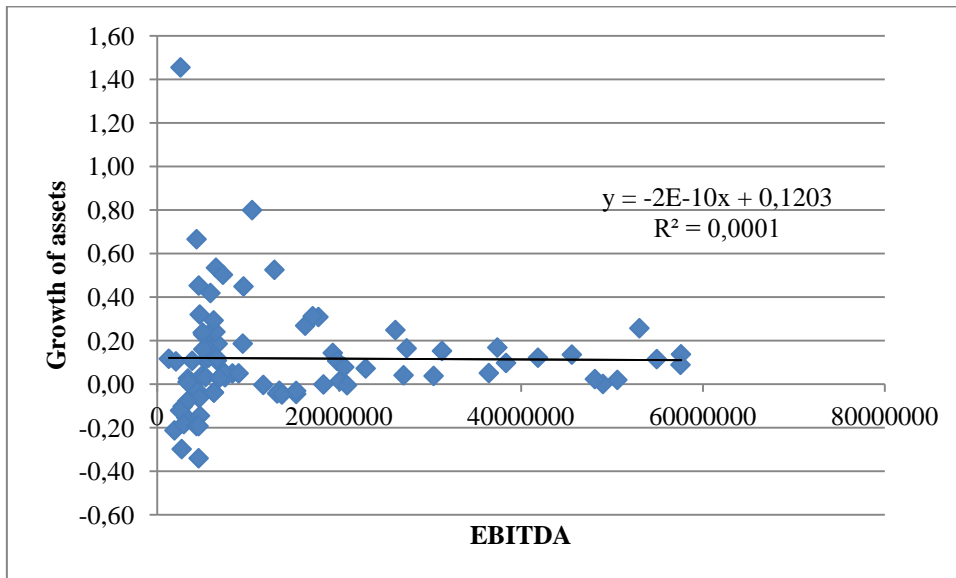
Heteroskedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

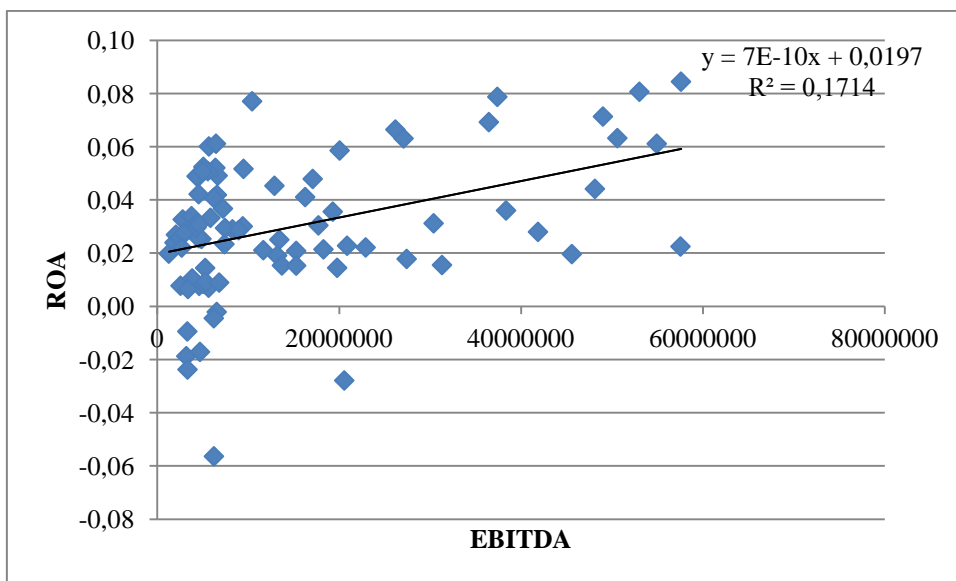
F-statistic	5.056613	Prob. F(1,82)	0.0772
Obs*R-squared	4.879072	Prob. Chi-Square(1)	0.0672
Scaled explained SS	3.920850	Prob. Chi-Square(1)	0.0777

Test for correlation between EBITDA and dependent variables for model 2.

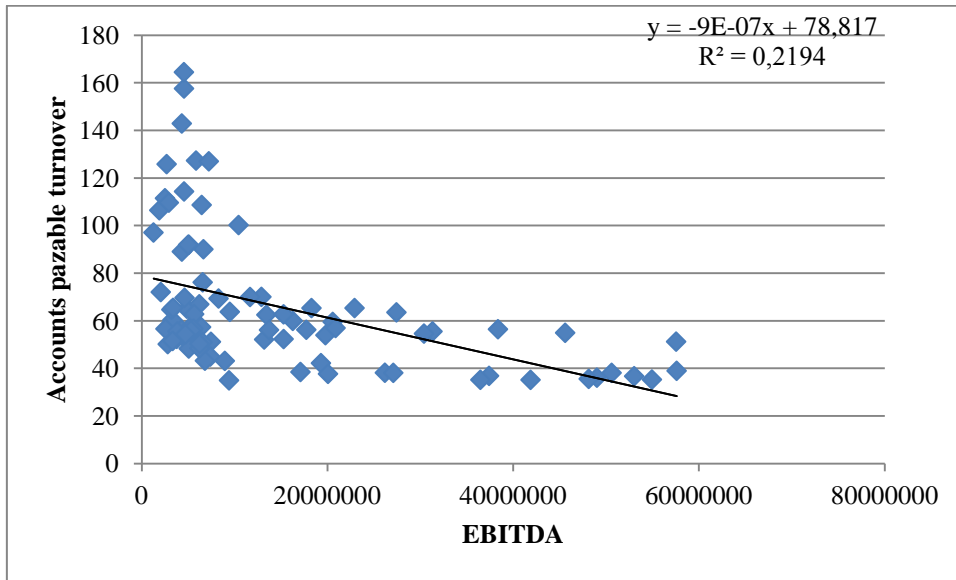
EBITDA and growth of assets



EBITDA and ROA



EBITDA and accounts payable turnover



EBITDA and inventory turnover

