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Methods of Assessing the Efficiency of Economic Implementation of The Level of Property Capitalization

Odil Norboyev, Gulnora Abdurakhmanova*

Tashkent State University of Economics, Tashkent, Uzbekistan
*Correspondence: E-mail: o.norboyev@tsue.uz

ABSTRACT

Due to global changes in the global economy, the importance of financing and building an optimal capital structure is increasing. Rapid changes in the exogenous environment and the investment climate led companies to revise their financing strategies. Currently, many financial instruments provide cash inflow but have certain restrictions. The tool that allows us to eliminate them is the mezzanine. However, the existing literature on mezzanine financing does not fully cover this financing method. The novelty of this research lies in determining the financial profile of the borrower company that utilizes mezzanine financing, and in studying the impact of the mezzanine on the market value of a company's equity and its value. Econometric analysis confirms that mezzanine financing is more often chosen by companies with a less attractive financial profile, based on ROA, EBITDA – CapEx cash flow, and beta. In addition, the interconnection between a company's life cycle and its desire to attract a mezzanine loan is revealed. Econometric and empirical analysis allow us to conclude that the market situation, managerial methods within the company, and the operational strategy increase the chances of the effective use of the mezzanine.

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1. INTRODUCTION

Due to a volatile economic environment, the issues of financing and developing the optimal capital structure of companies acquire the highest relevance. Given significant changes in the external environment and investment climate in Russia, the current financial policy and corporate financing strategies may not meet the challenge of the external environment, thus resulting in a deterioration in company performance and subsequent bankruptcy.

At present, there are a lot of instruments that may provide an influx of funds, but all of them have certain limitations, which should be taken into consideration by companies when performing their operations. However, some instruments allow to elimination of these restrictions. The mezzanine, considered in this paper, is one such instrument. The number of deals related to mezzanine financing in 2019–2021 increased more than twice – from 117 in 2019 to 317 in 2021, which is indicative of interest on the part of large and medium-sized companies. The number of transactions grew from RUB 251 billion in 2019 to RUB 837 billion in 2021.

The existing scientific literature offers insufficient coverage of the issues related to mezzanine financing. The purpose of this paper is to analyze the impact of procuring mezzanine financing on a company's future financial profile and its market value. The study is novel in that it defines the financial characteristics of a typical company that raises mezzanine financing, assesses its influence on the market value of equity capital, and reveals the key conditions for an efficient application of funds obtained as a result of such financing. The main research methods comprise econometric analysis, comparative analysis, case study, financial analysis of a company, and the dynamics of various indicators.

The paper includes three sections. In the first section, we perform a theoretical analysis of mezzanine financing, its advantages and drawbacks, and other alternative instruments based on scientific papers and literature by foreign and Russian authors. The second section presents an econometric analysis of several issues of mezzanine and classic financing instruments. The logistic model confirms the hypothesis that companies with a less attractive financial profile are more prone to issue a mezzanine instrument based on the coefficients preceding the Net income margin, ROA, Dividend dummy, EBITDA flow minus CapEx, corporate beta, and Q Tobin indicators. We revealed a relationship between a company's life cycle stage and a drive for procuring mezzanine financing. It is confirmed by the coefficient preceding a company's Revenue CAGR, Q Tobin, and beta. The classic linear model shows that in the case of mezzanine financing, the share of issue in the total corporate debt, the amount of raised funds, and the ratio of issue to company value have a positive impact on company value, while the coupon rate and life of an instrument have a negative impact. In the third section, the case study of actual transactions confirms the results of econometric analysis. It has been found that a favorable market situation, highly qualified management, and an optimal strategy enhance a company's chances of an efficient application of mezzanine financing.

2. LITERATURE REVIEW AND THEORETICAL ANALYSIS

2.1. Mezzanine Financing and Its Types

Mezzanine financing originated in the 1980s in the USA. The concept of mezzanine financing is one of the most advanced and flexible ones and companies use it all over the globe in developed financial markets (it is still gaining momentum in emerging markets).

When banks cannot provide financing for a company or a project because a company fails to meet the requirements and there is a high non-repayment risk, a company needs

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alternative financing sources (Sazonov *et al*., 2016). Mezzanine financing is hybrid financing that combines ordinary debt and equity capital. A Mezzanine is used when a company/project needs financing, but it cannot raise funds in a standard way in the debt market by placing debt securities (bonds), obtaining an ordinary bank loan or placing shares in the equity capital market. In other words, mezzanine financing is raised to implement a large project for which a company typically lacks internal funds. An enterprise turns to a bank and obtains up to 70% of the necessary amount. provided 30% is its funds1.

Generally, the mezzanine is obtained to finance business growth or expansion to various markets to settle M&A, LBO or restructuring transactions, stock redemption, project financing due to lack of internal funds, or in case of elevated risks of company bankruptcy.

Transaction parties. In this type of transaction, as elsewhere, there is a party providing funds for a company or the lender. Besides, there is another party that accepts such funds and tries to use them. In this case, the lender accepts a part of the equity risk to get a potential yield of 25– 30%. The latter is always the borrowing company, while the former may include investment banks, hedge funds, mezzanine financing funds, or a private equity fund.

We should also distinguish two types of providers or lenders that provide financing (Czajkowska, 2015). The first type comprises banks and other financial institutions, mezzanine funds, and institutional investors, while the second one includes PE funds that provide mezzanine financing to their portfolio companies to launch an IPO or to sell internally.

In the majority of transactions, payments consist of the following two parts (Sazonov *et al*., 2016):

(i) payment of interest on the mezzanine loan;
(ii) revenue from the sale of shares by the lender (the lender assumes risk and participates in corporate operations and growth; the transaction is structured employing options and warrants).

Let us consider the following mezzanine financing forms:

(i) credit mezzanine characterized by the interest being paid at the end of its period – financing with the option of paying interest at the end of its period;
(ii) warrant2 credit mezzanine – financing employing an instrument that makes the borrowing bank a partner and allows it to participate in the growth of shareholder value;
(iii) equity mezzanine financing in the form of preferred shares – structuring of financing through the repurchase of newly issued preferred shares with guaranteed dividends;
(iv) equity mezzanine with call/put options – repurchase of ordinary shares where a client has buyback obligations with a guaranteed return.

Sazonov *et al*. (2016) defined other mezzanine forms: financing secured by the stock of a company that owns physical assets; financing characterized by the "non-public" participation of an investor who purchases a share in the borrower's company, but assumes no responsibility to the company's lenders; financing secured by issue of convertible bonds that provide for fixed interest payments and repayment of principal debt at the end of the financing period, at the same time offering investors an opportunity to purchase shares of the borrowing company at a pre-determined conversion price instead of repaying the principal debt; financing secured by the issue of preferred shares of the borrowing company, which grant pre-emptive rights to participate in profit-sharing and liquidation value sharing as compared to owners of other company shares.

There are numerous classifications of mezzanine financing, but all of them describe the two main models in one way or another. The first model entails lending characterized by interest and debt "body" payment at the end of the financing agreement's validity period, the

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second model provides for additional issue of securities by the company or conclusion of option contracts to lock the transaction profit at previously stipulated terms.

2.2. Advantages and Drawbacks of Mezzanine Financing

So how do advantages and drawbacks of such financing manifest themselves? Paper (Svedik, 2018) highlights several principal advantages. First, it is an opportunity to attract funds not just for large companies, but also for companies that face difficulties in raising financing due to problems in securing a loan/confirming their ability to make payments in the future. Besides, the costs of primary mezzanine debt servicing are significantly lower than those of the issue of shares or bonds (listing, roadshow, advertisement, etc.). One of the main advantages is the ease of getting financing in comparison to issuing shares, bonds, or obtaining an ordinary bank loan.

At the same time, mezzanine financing has a range of drawbacks, such as a higher required return for a prospective investor for the risk he assumes, transfer of a part of the shares (if the transaction provides for it), and a probable loss of control over the company.

Paper Svedik (2018) names the reduced burden on cash flows during the financing period (a flexible approach to making the payment schedule), ease of obtaining in comparison to a standard bank loan, and distribution of risks between the transaction parties among the main advantages of mezzanine financing. Its drawbacks include the high cost for the company, major risks for the investor/lender, loss of capital by the company owners that force them to give up control, and increase of interest payments due to more long-term use of borrowed funds. Mezzanine investors risk losing their investments in case of a company's bankruptcy (see **Table 1**).

Table 1. Advantages and drawbacks of mezzanine financing.

Advantages	Drawbacks
Significant financial support of internal project implementation	More expensive than an ordinary loan
Improvement of the balance structure and creditworthiness	The money is granted for a limited period, unlike equity capital
Consolidation of capital without dilution of the shareholders share	More stringent requirements for company operation transparency
Non-taxable interest payments	
Greater entrepreneurial freedom for the company	

Thus, the positions of different authors are somewhat alike and somewhat different. Some authors speak of a low cost of such financing in comparison to the initial costs of raising funds using ordinary instruments, others note the large costs due to the high return required because of the elevated risk for the investor who grants a mezzanine loan. *Underlying instruments.* The following instruments are the underlying instruments of mezzanine financing:

(i) preferred shares;
(ii) convertible bonds;
(iii) warrant-linked bonds;
(iv) options.

A preferred share is a share that confers no right to manage a joint-stock company to its owner, but grants privileges such as preferential payments. A convertible bond is a bond that

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accords its owner the right to exchange such a bond for an ordinary share under certain conditions. A warrant-linked bond is a hybrid of two instruments (ordinary bonds and warrants). This instrument allows the investor to buy company securities (in this case – bonds) over a certain period at a certain price which, as a rule, is lower than the market price. An option is one of the most well-known derivative financial instruments. In the case of an option, a share or a bond may be the underlying asset (there are currency options as well). It entitles the owner to purchase/sell the underlying asset after a certain period (expiration date) at a predetermined price.

Comparison tables with alternating financing sources. Sazonov *et al*. (2016) compares mezzanines, bank loans, and direct investments. In his opinion, the mezzanine may be used in almost all cases described in the abovementioned papers, except for joint company buyouts with a direct investment fund. **Table 2** shows the advantages of this instrument over other sources of financing for an enterprise.

Table 2. Methods of Financing of Business Development.

Event	Bank Loan	Financing method	
		Mezzanine Financing	Direct Investments
Working capital financing	+	+	
Business expansion/Capital investments	+	+	+
Lombard financing	+	+	
LBO		+	+
M&A		+	+
Joint company buyout with a direct investment fund			
Manager buyout		+	
Buyout by one of the owners		+	+
Owner's partial cash out		+	+
Investment project for companies using the simplified taxation system		+	+

According to Svedik (2018), the following financing instruments are the most attractive:

(i) passive participation, which means raising large amounts of financing (especially for small companies unable to issue securities) through passive investors who make no claims to active participation in corporate operations through management decisions. It generally suits companies of any size and imposes no restrictions upon the borrowing company as to additional covenants;

(ii) preferred shares allow to attract a large capital and reduce the debt burden at the same time, thus providing a certain advantage for companies with a large debt/EBITDA ratio. They suit large companies, but do not provide the same extent of freedom as passive participation;

(iii) ordinary shares suit medium-sized and large companies, but impose certain limitations, i.e., an opportunity for the investor to participate in corporate operations;

(iv) a subordinated loan suits companies of any size, but the amount of raised capital is limited. It also suits companies that cannot issue securities for some reason. It does not stipulate the lender's opportunity to make management decisions and provides tax benefits.

Thus, mezzanine financing may be defined as the optimal way of raising capital for companies of any size and for any needs (whether it pertains to the purchase of a rival company or its international expansion).

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2.3. Areas of Mezzanine Financing Application

There are three main objectives for obtaining mezzanine financing. Each of them is substantiated by hypotheses. Econometric, comparative analysis and case study methods have been used to confirm or reject these hypotheses.

The first objective is to increase company value, which may be achieved by the purchase of a new related business (horizontal differentiation), the development of new markets, or the purchase of a business unrelated to the core business (conglomerate).

The hypothesis stating that company value depends on optimal capital structure (econometric analysis (EA) was proven by J. Marszalek using regression trees. He analyzed the dependence of the date of bond redemption and the period to its conversion and concluded that this type of bond helps to achieve the optimal capital structure, which has a positive influence on long-term values. The hypothesis proposed by Karpenko and Blokhina, according to which an increase in company value depends on the plans to issue convertible instruments (comparative analysis (CA), stated that an issuer was granted additional capital to use for investment purposes or to decrease the probability of a company's bankruptcy. Olivier *et al*. (2018) assert that the date of callable bond redemption plays a greater role in company performance than the date of redemption of non-callable bonds (case study). As per Abhyankar and Dunning (1999), convertible bonds are most attractive for rapidly developing companies with an unstable financial status (econometric analysis (EA). However, an increase in the company value does not depend on the plans to issue convertible bonds and the redemption date, which contradicts the previous two hypotheses.

The second objective consists of providing financing for large projects, for example, the establishment of a new business unit or the development of a new product. Thus, based on the hypothesis proposed by Czajkowska (2015), the mezzanine is more effective when an ordinary loan (case study) cannot be obtained, while as per hypothesis set forth by Sazonov *et al*. (2016), the mezzanine is an important alternative financing source for large and medium-sized companies (CA). They prove that when an ordinary bank loan is inaccessible, mezzanine financing becomes attractive, since it is much easier for the company to obtain due to the absence of numerous restrictions (such as bank covenants), on the one hand, but on the other hand, it is much more expensive. Hypotheses proposed by Yoo *et al*. (2018), Stein (1992) and Svedik (2018) have been validated by comparing mezzanine to alternative financing sources. They state that convertible bonds have more advantages in terms of financing than the issue of shares and ordinary debt securities (case study); mezzanine is more favorable than raising funds through ordinary debt and equity capital (CA); and that combinations of project and mezzanine financing may be more efficient for project financing than these instruments applied separately (EA).

The third objective is to achieve the optimal capital structure (Kazmierczak, 2017). Thus, for companies with heavy debt, placement of ordinary or preferred shares is one of the few ways of raising funds without increasing debt. Kazmierczak (2017) put forward the following hypotheses to substantiate this objective:

(i) optimal capital structure is achieved by issuing convertible bonds;
(ii) callable convertible bonds are issued by companies with a lower ROA;
(iii) companies are more willing to issue ordinary bonds than convertible ones;
(iv) all companies try to reduce the probability of bond conversion.

All the above-mentioned hypotheses have been confirmed by econometric analysis. These models create the basis for the econometric analysis carried out in the following section.

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3. METHOD

3.1. Data Description

The main purpose of econometric analysis is to determine the financial standing of the companies that decide to raise mezzanine financing. To solve this problem, we cooperated with a mezzanine financing expert to select a set of indicators for which we needed to collect data. For all indicators described below, we present a mean value for the three years preceding the start of mezzanine financing usage. First, we selected one set of financial status indicators, then we expanded it in the course of an in-depth study.

The primary analysis indicators are as follows:

(i) revenue growth – a general indicator of corporate business operations over three years;
(ii) average EBITDA margin, EBIT, Net Income – these indicators allow to trace business profitability at several levels in comparison to revenue, respectively;
(iii) ROE (Return on equity) is a ratio of net income to equity capital that shows the profitability of corporate capital;
(iv) ROA (Return on assets) is a ratio of net income to all corporate assets that represents the efficiency of a company's asset use to generate profit;
(v) EBITDA – CapEx – cash flow fewer capital expenditures, which shows the amount of funds available to the company before considering financial obligations;
(vi) EBITDA/Interest is a ratio that shows whether the company has sufficient profits to pay interest;
(vii) Q-Tobin is a ratio of the company's market value to its replacement asset value that shows whether the company is underestimated or overestimated;
(viii) Total Debt/Equity is an indicator that shows the evaluation of financial leverage and equity capital ability to cover all outstanding debt obligations;
(ix) Net Debt/EBITDA is an indicator of corporate leverage that shows the number of years a company needs to settle its debt if the net debt and EBITDA remain unchanged.

Additional indicators include the following:

(i) Total asset turnover – the asset turnover ratio shows the number of days required for asset turnover with the current level of proceeds;
(ii) CapEx/Total assets is a ratio of capital expenditures to the mean volume of company assets;
(iii) Beta is an indicator that shows the interrelation between systematic risk and expected return on assets;
(iv) The coupon rate is the annual income of an investor in possession of a bond;
(v) Dividend Yield is a coefficient that represents the number of dividends paid by the company annually relative to stock price;
(vi) Dividend Dummy is a binary variable that reflects a company's dividend payouts.

When the list of financial indicators was determined using the Capital IQ analytical platform, we selected a dataset of financial indicators of the companies that issued mezzanine instruments and ordinary bonds from 2000 to 2022.

To define financial indicators that influence company decisions on mezzanine financing, we built a classic linear regression.

3.2. Descriptive Statistics

Descriptive statistics of companies that issued mezzanine instruments and ordinary bonds are presented in **Table 3**.

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Table 3. Descriptive data statistics.

Variable	Number of Obsevations	Mean	Standard Deviation	Minimal	Maximum
Revenue Cage	10.698	0.1426843	0.4628762	-1.976431	19.03343
EBITDA margin	10.777	-0.2645232	18.211640	-1244.917	1.832809
NI margin	10.777	-0.4772140	20.351360	-1495.405	32.90036
ROE	10.760	0.0351310	0.8110236	-50.32527	10.04037
ROA	10.770	0.0150030	0.1185521	-2.508596	2.08468
Asset turnover	10.985	0.0060094	0.0060094	0	0.071242
CapEx/total assets	10.760	0.0573549	0.0573922	0	0.5942256
EBITDA – CapEx	10.985	847.05550	2987.9040	-14,064.68	38582
Total debt/total assets	10.760	0.3387827	0.1830465	0	1.771294
Q-Tobin	10.760	1.1284250	4.0038740	0	362.9334
D/E	9.696	1.1413630	2.1397550	0	109.1696
Dividend yield	11.243	0.0162133	0.0207334	0	0.2992307
Net debt/EBITDA	10.868	3.3155450	27.871220	-1,197.893	1,705.048
EBITDA/interest	10.762	38.699650	999.90050	-15,608.79	76,261.61
Beta	10.970	0.9064686	0.6186393	-10.615680	4.228360
Coupon rate	10.216	0.0389504	0.0293433	0	0.160000
Dividend dammi	11.243	0.5197011	0.4996339	0	1

Approximately 40% of this sample consists of mezzanine instrument issues, the rest of the sample comprises examples of issue of ordinary shares. In the course of further regression building, this will allow us to determine which financial indicators have the greatest impact on a company's decision-making on the issue of mezzanine. Then we used the companies' market capitalization indicator over five years to determine the effect of mezzanine financing.

After the initial analysis of the sample's average ratios, one may note that in case of a positive cumulative average annual growth in the previous three years, the mean marginality values of EBITDA and Net Income are negative, which indicates certain operational difficulties in companies. Besides, one may observe that the ROE mean value (about 3.6%) is below average in all industries. It is significantly lower than the mean value in all industries and ranges from 10 to 13%. However, it should be noted that the mean value of the EBITDA – CapEx flow takes on a positive value; the mean value of EBITDA/Interest = = 38.7x. This means that on average companies' EBITDA is sufficient for interest payouts. Besides, the average leverage (D/E) of companies in this sample amounts to 1.12. Consequently, the average debt load is not so large.

The next stage of research entails building a logistic and linear regression and interpreting the obtained data to accept or reject the hypotheses.

3.3. Empirical Analysis

The first objective of empirical analysis is to determine the influence of financial indicators on the probability of the issue of mezzanine instruments. To solve it, one has to build a logistic regression. As a result, we will form an understanding of the financial profile of companies that use mezzanine financing. Researchers Stein (1992) carried out a similar empirical analysis to evaluate the enhancement of investment opportunities by raising mezzanine financing. However, we expanded the set of indicators and used the generated hypotheses to achieve an altogether different goal. As long as there are two scenarios in the sample – issue of a

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convertible bond (mezzanine instrument) and ordinary bond – the use of a logistic regression seems optimal.

Based on the mezzanine instrument sphere analyzed above, two hypotheses have been put forward to address unexplored issues before building a logistic regression.

H1: Convertible bonds are issued by companies with a less attractive financial profile as compared to issuers of ordinary bonds.

H2: Issuers of convertible bonds have fewer growth opportunities than issuers of ordinary bonds.

The studied logistic regression model where a dummy variable with the parameters of 0 – issue of a mezzanine instrument and 1 – issue of an ordinary bond is an independent variable is as follow equation (1):

$$\text{Ln}\,[p/(1-p)] = \beta 0 + \beta 1\text{Revenue\_growth} + \beta 2\text{Total\_asset\_turnover} + \beta 3\text{ROE} + \beta 4\text{ROA} + \beta 5\text{Ebitda\_margin} + + \beta 6\text{Total debt/Equity} + \beta 7\text{Ebitda-Capex} + \beta 8\text{Ebitda/Interest} + + \beta 9\text{Capex/Total\_assets} + \beta 10\text{Net\_debt/Ebitda} + \beta 11\text{Beta} + + \beta 12\text{Q-tobin} + \beta 13\text{Coupon\_rate} + \beta 14\text{Dividend\_yield} + + \beta 15\text{Dummy\_dividend} + \beta 16\text{Net Income margin} + \beta 17\text{Total debt/Total assets} + \varepsilon, \quad (1)$$

where *p, in this case,* is the probability of issue of a mezzanine instrument. Based on the results of the built model, pseudo-R2 amounted to 27%, however, to ultimately verify the adequacy of the developed model and applied sample for the logistic regression, we performed the chi-squared test and Hosmer-Lemeshow goodness-of-fit test.

The logistic model confirms the statistical significance of the majority of presented financial indicators at a 1% significance level. This suggests that after primary analysis at least hypothesis H1 is not rejected yet, however, it may be defined more precisely. EBITDA/Interest was at a 5% significance level. The indicators of business profitability and efficiency (EBITDA margin, ROE, Asset turnover), as well as the leverage indicator (D/E), were statistically insignificant. It means that not all indicators are indicative of corporate financial performance and they may not influence the decisions on the issue of a mezzanine instrument in every instance.

Based on the signs that precede the coefficients, one may conclude that when corporate operations improve, i.e. the revenue, market capitalization (Q-Tobin), and EBITDA increase along with the beta value, a company is more likely to aim at issuing mezzanine instruments. We may make the following conclusions based on the obtained data. This set of financial characteristics is mainly typical of companies at the earlier stages of their lifecycle (youth and prime). Such companies grow rather rapidly, their market value is high and when these companies face a high risk, the correlation of their value to the market increases.

From the investors' point of view, such companies have a high credit rating when ordinary bonds are concerned. However, if a company demonstrates a growth potential that may be forecasted based on market fluctuations, participation in mezzanine financing will allow investors to profit from the growth of a company's shareholder value. The presence of an equity component in the mezzanine instrument provides for this opportunity. Because of the assumptions that companies are young and have a growth potential, hypothesis H2 should be rejected because in this case, the result suggests the opposite: companies aiming to issue a mezzanine instrument often have growth potential.

An increase in the value of other financial indicators in this sample is more likely to become a signal for the company to issue ordinary bonds. Generally, hypothesis H1 is not rejected based on the first model but needs a more precise definition. Thus, companies with a less attractive profile will issue convertible bonds, however, the following indicators will be

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considered the indicators of the attractiveness level: Net income margin, ROA, Dividend dummy, EBITDA – CapEx flow, Total debt/Total assets, as well as a company's beta because its growth increases the company's commitment to issue a mezzanine instrument. This issue is considered in more detail in the third section using the example of case analysis.

Defining the influence of the mezzanine instrument issue on corporate market capitalization.

After defining the financial profile of the companies that decided to issue mezzanine instruments, it is necessary to perform an empirical analysis of how the use of mezzanine may influence their corporate financial profile.

To solve this problem, two classic linear regressions are presented to demonstrate how mezzanine financing influences corporate market value. The market capitalization of companies five years after the issue is the dependent variable in these models. Five years was selected based on the assumption that a company will be unable to change its operations immediately after obtaining mezzanine financing using the raised funds, rather, it will need time.

The following indicators have been added to the current sample for linear regression models:

(i) The coupon rate is the coupon rate for a convertible bond (the indicator has been used in the logistic regression);
(ii) The offering amount in this case is the amount of money raised by employing the issue of convertible bonds;
(iii) The tenor period is the maturity term of an issued bond;
(iv) Offering amount to Market cap is a ratio of obtained funds to a company's market capitalization that helps to understand how critical the raised amount is;
(v) Offering amount to Net debt is a ratio of the obtained funds to corporate net debt that allows to compare the corporate debt amount with the amount of raised funds;
(vi) Conversion premium is the difference between the convertible bond price and the market value of ordinary shares into which such bond may be converted;
(vii) The conversion ratio is a conversion coefficient that shows the number of shares into which a bond may be converted.

The linear regression model has been built for two situations: the issue of an ordinary bond and a mezzanine instrument. It provides an opportunity to compare these situations and distinguish between the influence of an ordinary bond and a mezzanine on a company's market capitalization. The model is as equation (2):

$$\text{Market cap 5Y after} = \beta 0 + \beta 1\text{Tenor} + \beta 2\text{Coupon rate} + + \beta 3\text{Offering amount}. \quad (2)$$

After building the regression, we obtained the following results from the two scenarios (**Tables 4 and 5**).

The explanatory power of the model, i.e. R2 in the case of convertible bonds takes on the value of 0.0094 and in the case of ordinary shares – 0.0352, which is below 10%. Based on this evidence, we may conclude that other factors have a strong impact on a company's market value within five years.

Table 4. Convertible bond model data.

MC5yearsafter	Coefficient	Standard Deviation	T	P>|t|
Coupon rate	-127,672.2	22,539.86	-5.66	0.000
Offerinf amount	0.0876267	0.0866445	1.01	0.312
Tenor years	-69.95156	86.21081	-0.81	0.417

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Table 5. Data of the model for ordinary shares.

MC5yearsafter	Coefficient	Standard Deviation	T	P>|t|
Coupon rate	-606575.7	67252.06	-9.02	0.000
Offerinf amount	3.929689	0.6591785	5.96	0.000
Tenor years	3315.133	243.921	13.59	0.000

It should also be noted that for the companies issuing ordinary bonds, the ratios are significant at any level. It means that these parameters influence the market value during the selected period. However, in the case of a mezzanine instrument, only the borrowing rate has any impact (at any significance level), besides, in this case, the influence is smaller and has a smaller negative impact than in the case of ordinary bonds. To refine this conclusion, we have considered the borrowing rates in detail. Thus, we can see that in the case of the issue of convertible bonds, the average coupon is less than in the case of ordinary bonds because it is possible to convert bonds into shares. This fact explains the reasons for the difference in the extent of influence on company value.

The second model was built only for convertible bond issue cases and has restrictive covenants to enhance accuracy. So, the sample comprises companies with a bond maturity period under or equal to ten years. Besides, we excluded the situations when the conversion premium and the conversion ratio equaled 0.

The developed model is as equation (3):

$$\text{Market cap 5Y after} = \beta 0 + \beta 1\text{Tenor} + \beta 2\text{Coupon rate} + + \beta 3\text{Offering amount} + \beta 4\text{OA / MC} + \beta 5\text{OA / ND} + + \beta 6\text{Conversion premium} + \beta 7\text{Conversion Ratio}. \quad (3)$$

The conversion rate and premium turned out to be insignificant at all levels. The positive influence of the issue's share in corporate debt is significant (at a 10% level). From the economic point of view, this may be because a company may use a part of the raised funds to refinance the debt and reduce its debt level. The coupon rate is also significant at all levels, and we know that the converted bond rate is less than the ordinary bond coupon. This means that a smaller coupon rate offers the company an opportunity to use the saved amount to develop the company. We can also note from the viewpoint of corporate development that a large amount of raised funds expands a company's horizon of planning and implementation of investment projects. At the same time, the ratio of issue to a company's market value is negative. It is shown in the model that presents the risks of a company's insolvency.

According to the conducted empirical analysis, we may reject hypothesis H2, which states that issuers of convertible bonds have fewer growth opportunities, unlike issuers of ordinary shares. Hypothesis H1 is accepted, but with certain adjustments: it is confirmed for the following indicators: net income margin, beta, EBITDA/Interest, Q – Tobin, and Dividend dummy.

Besides, we have revealed a correlation between the choice of an instrument of financing and the lifecycle stage. We describe it in more detail in the final section.

4. RESULTS AND DISCUSSION

This section is dedicated to the study of the influence of mezzanine instruments on corporate operations based on two cases. The examination of these cases includes the analysis of the financial indicators of the borrowing company, as well as the qualitative characteristics of the situation.

Financial analysis implies an evaluation of the key elements of the corporate financial profile – dynamics of revenue, EBITDA, net income (substantiated by operating indicators of

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the borrowing company in kind), as well as debt load indicators – Net debt / EBITDA and EBITDA / Interest. It also refers to the econometric part of the paper concerning the distinctive features of borrowing companies (logit-regression) and the value of borrowing companies (the least squares method regression). Output with financial indicators is the result of financial analysis.

Consideration of the qualitative characteristics of the case allows us to define the final result of a mezzanine deal and assess the internal (management quality, strategy efficiency) and external (macroenvironment, market situation) profiles of the borrowing company. SWOT analysis sums up the research.

The first case is that of a company operating in the market of doors and tumbler plate locks. It offers an example of a company's distressed debt refinancing with option profitability calculated into the transaction.

4.1. Case 1

4.1.1. History of Transaction

The key parties in the case are company X (borrower), mezzanine fund Y, and several of the largest banks of the Russian Federation (top 100 of the banking system) that have concluded a refinancing agreement. Company X is one of the main participants in the lock and door market, it is the market leader with a 25% share and ranks among the TOP 3 participants in the steel door market with a share of 1% (the market leader accounts for 3%). Company X develops rapidly and implements an aggressive investing policy of quick branch network expansion.

In 2012–2014 company X had two key lenders in its loan portfolio (hereinafter Bank 1 and Bank 2). In the summer of 2013, Bank 1 offered to refinance multiple small credit lines and buy out other banks' loans to provide a syndicated loan. In December 2013 company X was notified that all contractual relations should be broken off due to a management change in Bank 1. Consequently Bank 1 limited lending and forced Bank 2 to refinance and sell its debt to it. As a result of controversies between the Cornerstone lenders company X lost access to current assets, which led to a default.

Under such circumstances, Company X considered two options: 1) turning to fund Y to conclude a mezzanine financing transaction; and 2) going bankrupt and selling assets to pay according to lenders' claims. Alternative financing sources were unavailable because of the company's insufficient credit quality. After the end of Q2 2015, a mezzanine financing transaction was made.

4.1.2. Nonfinancial Analysis of Case 1

4.1.2.1. Internal analysis of the market

A distinctive feature of the steel door and tumbler plate lock market where company X operates is its saturation. The market structure is subject to frequent changes; the leader's share ranges from 2 to 3%. It means that it is a highly competitive market characterized by frequent introduction of new equipment, search for new sales channels, development of a dealer network, optimization of business processes, and operating costs.

First of all, it is necessary to note the market volume dynamics since 2012. Up to 2014, the market had been rather steady and demand amounted to 3.3–3.4 million units per year. In 2014 as a result of the import reduction policy the product volume decreased by 1 million units. To meet the market needs, domestic production volume grew annually by an average of 300,000 units up to the end of 2015, but in 2016 it fell by 11% due to contraction of demand. According to the DISCOVERY Research Group analytical agency, the steel door market

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in Russia in 2015 amounted to RUB 83.0 billion (maximum for 2010–2015), but it decreased to RUB 67.0 billion in 2017 due to a drop in population's solvency and a delayed effect of the sale of new buildings. 76% of the market in 2015 consisted of domestic manufacturers, with this share growing to 86% in 2019. Major market participants are Torex with a 16% market share, companies Le Grand (16% of the market), and Guardian (9% of the market).

The lock market is characterized by a high product differentiation, nevertheless, the competition is not as strong as in the door market. At the same time, the lock market is related to the dynamics of the steel door market because tumbler plate locks are complementary goods.

Let us elaborate on the product range and target users of these goods. Markets of this type are differentiated greatly in terms of products and are subject to rapidly updating trends due to frequent changes in quality and safety regulations. As a result, companies have to change their strategy often, and upgrade production facilities, thus improving the flexibility of the manufacturing process and adapting actively to market trends.

There are two main market consumer segments: B2B and B2C. The volume of consumption by construction companies or B2B is significantly higher, however, this segment is less marginal because construction companies prefer the low cost of doors in the prejudice of differentiation.

4.1.2.2. Internal analysis of the company

Company X is the apparent leader in the market of tumbler plate locks with a share of 25%, in the door market its share amounts to approximately 1% due to saturation and a highly competitive environment. At present, the company is in the "prime" stage of its lifecycle. It means that it has a well-defined structure, and each employee has a clear set of functions. The company controls a manufacturing cluster near Nizhny

Novgorod has been automating production since 2011. For instance, equipment that manufactures 20,000 doors per month without human involvement has been installed. The products include five different door model ranges with over 100 finishings.

Sales through distributors have been an important sales channel up to 2014, but later the company decided that it needed to focus on its retail stores and a stable network of small distributors to ensure the best results. Despite the underuse of facilities, the company managed to preserve its growing profit margins by up to 30% in 2014 due to its focus on profitable orders.

By 2015, Company X managed to establish cooperation with many federal-level construction companies (similar to PIK) and to enter foreign markets. Nevertheless, the development of B2B sales slowed down due to the ongoing legal defense of the company's assets after the default of 2014. Since the end of 2015, active TV marketing has been carried out to increase sales (see **Figure 1**).

Company X needed significant funds in 2012–2014 to establish distribution channels, and it implemented an aggressive credit policy to finance its investment program. It resulted in a large debt on bank and lease payments amounting to RUB 1,082 million, which was followed by a mezzanine financing transaction conducted with fund Y (see **Figure 2**).

After making the transaction, the company demonstrated positive dynamics of specific revenue per sales point, however, since the end of 2016 the company has experienced problems with door retail. They are related to a general market slowdown in the market, as well as to management problems (long time required to replace managers from Moscow and understaffing of sales personnel.) By mid-2017 the company failed to overcome the generally negative trends in retail despite a significant increase in the marketing budget.

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Company X is a leader in the lock and steel door market. Its brand is identifiable in the B2B and B2C segments; the company offers a differentiated range of products that satisfies the needs of a wide range of customers. At the same time, its financial standing is unstable due to an aggressive credit policy implemented in 2012–2014. A large debt load and unavailability of current assets have a negative impact on the company's financial indicators. A production decline at the time of turning to fund Y is indicative of possible problems and decreased yield in the future. To improve the situation, first, company X has to focus on its market strategy and change it, thus increasing sales and the number of sales channels. It is also necessary to settle legal disputes to create an image of a reliable contractor and to increase B2B sales.

The main threat for company X is bankruptcy due to a default to lenders. Besides, due to its incorrect financial and marketing strategy, the company faced the threat of loss of its market share, which may result in a decrease in its proceeds.

Thus, company X encountered difficulties that made it raise mezzanine financing to continue normal functioning. To improve the current situation, it is necessary to apply the ST (Strength-Threats) strategy to mitigate the threats by using the strengths. To implement this strategy, the following steps should be taken: change the market strategy and study new sales channels; reinforce management teams with new employees; use new modern promotion channels.

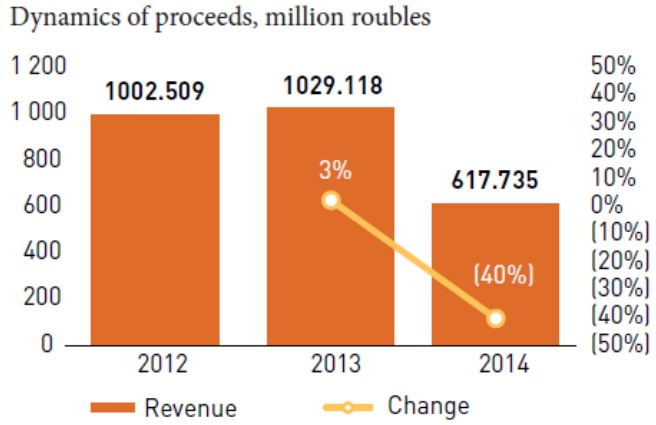

Figure 1. Dynamics of the value of company X in 2012–2014.

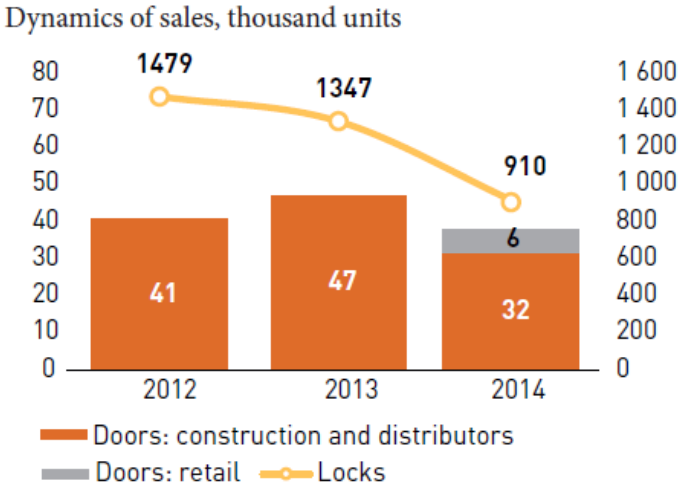

Figure 2. Physical indicators of company X in 2012–2014.

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4.1.3. Financial Analysis of Case 1

In 2012–2013 proceeds of company X remained unchanged, amounting to ~ RUB 1 billion due to the preservation of sales volumes with an insignificant rearrangement of the sales structure between the segments of doors and locks in kind and the preservation of the company's pricing policy. In the steel door segment, the company's sales increased in 2013 by 15% as compared to 2012 due to a favorable market environment: 1) the number of commissioned apartments in the

Uzbekistan in 2013 increased by 929,000 (+20% in comparison to 2012); 2) the share of domestic manufacturers in the Russian market grew from 56 to 58% due to a better quality of steel doors in comparison to foreign manufacturers mainly represented by Chinese contractors. In 2013, sales of company X showed a slowdown of 9% in the lock segment in comparison to 2012, when the situation was the opposite: the share of domestic manufacturers decreased and the share of Chinese suppliers grew. In 2014 revenue fell sharply by 40% – down to RUB 618 million. Revenue dynamics are due to a significant drop in sales (–19% in the door segment and –32% in the lock segment), which was caused by the crisis of 2014. One of its consequences was the slowdown of the commissioning of new buildings and the deterioration in consumer demand for apartments. In its turn, it brought about a contraction of the door and lock market. The dynamics of these indicators are presented in Figures 1 and 2.

In 2012–2013 the financial result of company X as reflected by EBITDA amounted to ~ RUB 200 million. EBITDA margin was stable at an approximately ~20% level, and in 2014 despite a reduction in business volume, EBITDA margin grew to ~30% due to the focus on more profitable retail orders. Improvement in operating efficiency concerning the unfavorable macroeconomic situation is indicative of high-quality crisis management and an ability to optimize branch operations quickly. Nevertheless, according to the data obtained during the financial due diligence review performed to conduct a transaction, an independent advisor proposed EBITDA corrections for 2013–2014. The advisor calculated the following amount of reserves for this period: 1) depreciation of inventory by ~ RUB 22 million due to no inventory movements over one year; 2) accrual of reserves for questionable debts of ~ RUB 56 million in 2013 and of ~ RUB 71 million in 2014. It should be noted that a classic understanding of EBITDA (Operating income + D&A) implies that this indicator is provided without deduction of non-cash income and expenditures (Schweser, CFA level 1). Nevertheless, it is common practice to leave non-cash income and expenditure items out of calculations for a more accurate statement of the cash flows received by the company. For this reason, corrections offered by the advisor should be incorporated into the EBITDA calculation.

At the same time, the advisor's comments call attention to potential future problems of company X in the manufacturing process (in case of confirmed impossibility of using the inventory) and cooperation with contractors (if the contractors fail to fulfill their obligations to company X). The dynamics of EBITDA and adjusted EBITDA (concerning the advisor's comments) are shown in **Figures 1** and **2**.

4.2. Case 2

4.2.1. Record of Transaction 2

Due to the restrictions on the data about the transaction, new designations for related information were introduced. Presumably, there are four main parties to this transaction. Bank A, its subsidiary company AB, holding C, and shareholder D, which controls the holding and the subject of the case – company Z.

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Bank A established company AB. D was a shareholder of holding C. Company AB was granted a loan of $10 million. The received amount was contributed to the authorized capital of company Z. Thus, a new shareholder AB emerged with a 3% share in company Z. Then a retroactive agreement was signed, which structurally resembled REPO – holding C undertook to purchase 3% of shares from company AB after the expiration of the mezzanine financing transaction.

The payment schedule under this transaction contemplated a target return for bank A. Besides, bank A financed the entire group of companies to support their operations and helping to boost production. In 2015, investments in company Z increased up to €40 million in the form of a loan extended to company AB, which forwarded the money to a company outside of company Z's sphere of operations. This company repaid the loan to bank A. Since the loan was granted to company AB, bank A increased its share of direct ownership up to 16%, and another 35% of shares was a guarantee for the entire transaction, providing control in case of a default.

4.2.2. Nonfinancial Analysis of Case 2

External analysis of the 2012–2018 market. Since the mezzanine financing transaction was concluded in 2013, let us consider the company's macroenvironment from 2012 to 2018. For a long time. the food market in the region has been developing rather unevenly. So, the growth rate of product manufacturing was low. The maximum annual increments in the production volume did not exceed 1.8–2%, the average increment rate was 0.4–0.5%. This was related to the limitations of the product's raw material base, and the country's climate since the fodder base and livestock population used further in the production chain depend on the weather.

In 2012 after a drop in production by 0.3% in 2011, the Russian market for this product recovered and even grew by approximately 3.5% in comparison to the previous year. At the same time, in the context of Russia's accession to the WTO and a crisis in the country caused by increased expenses for livestock keeping that resulted in livestock reduction, foodstuff production volume in 2013 was at the minimum level since 2000 and amounted to 30.5 million. However, after imposing an import embargo in 2014 for various types of foodstuffs, domestic production share started growing and amounted to 31.8 million tons by 2017. Since the end of 2013, the share of Russia's self-sufficiency concerning this food product started growing, increasing from 76.5% in 2013 to 82.4% in 2017. The main part of the needs for this product was satisfied by import from Europe and the CIS (Belarus and Kazakhstan), although it should be noted that the share of CIS countries in the import grew from 40 to 80% after the embargo was introduced.

4.3. Discussion

Mezzanine financing is one of numerous market instruments for raising funds, which combines the characteristics of debt and equity capital. In the majority of cases, mezzanine is obtained to implement a large project, for which a company typically lacks its funds or when the company is unable to get an ordinary bank loan.

Compared to alternative financing sources, the mezzanine is easy to attract, has a flexible payment schedule, and has an improved structure of balance and creditworthiness. However, it has some shortcomings, for example, a higher required return for a prospective investor to offset the risk he assumes, transfer of a part of the stock (if the transaction presupposes it), and a probable loss of control over the company.

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The econometric analysis performed in the present paper enabled us to generate two hypotheses that answer the previously unresearched questions.

(i) H1: Convertible bonds are issued by companies with a less attractive financial profile than issuers of ordinary bonds.
(ii) H2: Issuers of convertible bonds have fewer growth opportunities, unlike issuers of ordinary bonds.

Based on the obtained data, we may make the following conclusions. This set of financial characteristics is mainly typical for companies at earlier stages of their lifecycle (period of youth and prime). Such companies grow rather rapidly, their market value is high, and the value of high-risk companies correlates with the market in a stronger way

Hypothesis H1 was confirmed: convertible bonds are issued by companies that have a less attractive financial profile than issuers of ordinary bonds. Confirmed indicators of the financial profile attractiveness are Revenue CAGR, Net income margin, ROA, Dividend dummy, EBITDA – CapEx flow, Total debt/Total assets, Q Tobin, Coupon rate, EBITDA/Interest, as well as the company's beta since its growth increases the company's striving to issue a mezzanine instrument.

From the investors' point of view, such companies have a high credit rating in the case of ordinary bonds. However, if a company demonstrates a growth potential that may be forecasted based on market fluctuations, participation in mezzanine financing will enable investors to profit from the company's growing shareholder value. The presence of an equity component in the mezzanine instrument provides for it. If one assumes that companies may be young and have growth potential, one should reject hypothesis H2 because in this case, the result suggests the opposite: companies aiming to issue a mezzanine instrument may have growth potential.

Besides, case analysis did not confirm the obtained conclusion that companies that tend to issue mezzanine instruments may be less mature. The case study revealed that using mezzanine financing instruments has a positive influence on the financial profile of a borrowing company (in terms of credit metrics), and the market value of equity capital provided that the following conditions are met: 1) a company's growth potential after the mezzanine transaction is concluded; 2) a favorable market situation; 3) highly qualified top management and an efficient corporate strategy.

In the paper we describe a typical company that raises mezzanine financing, evaluate its influence on the market value of equity capital, and define the key conditions for an efficient application of funds provided in the framework of such financing.

The research was restricted by the amount of publicly available information on mezzanine financing transactions, the multiplicity of the types of mezzanine financing, and the confidentiality of case study data.

5. CONCLUSION

The assessment of the efficiency of the economic implementation of property capitalization involves a multifaceted approach. Key methods include financial analysis, which examines the profitability and return on investment, and market analysis, focusing on market trends and property values. Additionally, efficiency can be gauged through cost-benefit analysis, assessing the economic benefits relative to the costs incurred in capitalizing properties. Performance metrics, such as occupancy rates and asset utilization, also provide insight into how effectively properties are capitalized. Integrating these methods offers a comprehensive view of the efficiency in capitalizing properties, ensuring informed decisions

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and effective management of economic resources. This approach not only maximizes returns but also supports sustainable growth in the property sector.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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