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Investments, liquidity of shares and quality of management

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Abstract

The author examines the complex relationship between stock liquidity, financial flexibility, management quality and investments of Russian public companies. The cost and volume of fixed assets affect the size of an organisation's assets, which, in turn, determines the share price. The share price is an objective indicator of the financial position of the company. The quality of management allows you to assess the company's ability to attract investments. The liquidity of shares has a causal relationship with investments. Financial flexibility affects management's ability to adjust the capital structure in order to attract additional capital investments. In addition, financial flexibility allows the company to respond quckly to investor proposals in the face of restrictive (sanction) measures. The management of Russian companies affects not only the share price (risk adjustment), but also the investment opportunities. The author identifies criteria for management integrity in the implementation of investments. Information asymmetry affects the financial policy of the company. Investment opportunities are favourable under a balanced financial policy and in the presence of high quality property collateral. Companies with a high level of property security have the necessary debt capacity, i.e. the ability to meet their obligations to creditors in a timely manner. Assets determine not only the share price, but also the financial position and investment attractiveness of a commercial organisation. Property security is an important factor in deciding on the choice of funding source, taking into account its price (adverse selection problem). The author presents the evaluation results using a dynamic panel data model (the Arellano-Bond – the generalised method of moments). The model allows us to solve the problem of endogeneity – the correlation of explanatory variables with an error in the regression.

Keywords: liquidity of shares, investments, financial flexibility, information asymmetry, capital structure, adverse selection problem, generalised method of moments.

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投资、股票流动性和管理质量

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简介
文章探讨了俄罗斯上市公司的股票流动性、财务灵活性、管理质量和投资之间的复杂关系。固定资产的成本和数量影响着企业的资产价值，而资产价值又决定着股价。股价是决定公司财务状况的客观指标。通过管理质量可以评估公司吸引投资的能力。股权流动性与投资有因果关系。财务灵活性影响管理层为吸引更多资本投资而调整资本结构的活动。此外，财务灵活性还能使公司在限制（制裁）措施下对投资者的建议做出迅速反应。俄罗斯公司的管理层不仅影响股价（通过调整风险），还影响投资机会。
作者指出了投资时管理层诚信的标准。信息不对称会影响公司的财务政策。在平衡的财务政策和高质量的财产支持条件下，投资机会是有利的。拥有高水平财产支持的公司具有必要的债务潜力，即有能力及时履行对债权人的义务。资产不仅决定股价，还决定商业机构的财务状况和投资吸引力。财产抵押是决定选择融资来源的一个重要因素，要考虑到其价格（逆向选择问题）。作者介绍了使用动态面板数据模型（阿雷利诺-邦德广义矩法）进行估算的结果。该模型使我们能够解决内生性问题--解释变量与回归误差的相关性。
关键词: 股票流动性、投资、财务灵活性、信息不对称、资本结构、逆向选择问题、广义矩方法。

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Introduction

The National Security Strategy of the Russian Federation[1] states that the goals of ensuring economic security will be achieved, inter alia, by accelerating the rate of growth of investment in fixed capital, increasing the availability of credit, protecting and promoting capital investment, and stimulating the use of domestic sources of investment.

A joint-stock company is based on the pooling of capital invested by shareholders in the company's activities (attracted to the organisation as a result of the placement of shares), with the expectation of receiving benefits from its management - an increase in the value of the shares, the receipt of dividends.

The structure of a joint-stock company assumes that the shareholders are an extension of the company itself (alter ego), since the interests of the shareholders are an integral part of the economic interests of the organisation. A shareholder's property rights are inseparable from the company's property rights.

The shareholder is interested in the development and investment attractiveness of the company, its financial stability and the growth of economic indicators that have a direct impact on the value of the company's shares and future capital growth. In addition, the shareholder is obliged to take an active part in the management of the company, since the person who has acquired a block of shares has a natural desire to increase the return on his investment. The shareholder is interested in the fate of his investments: obtaining information on the activities of the joint-stock company, checking the validity of his own forecasts of the development of the share price, including by analysing the documents published by the joint-stock company, monitoring the income due on the shares (dividends), etc.[2]

[1] Decree of the President of the Russian Federation dated 02.07.2021 No. 400 'National Security Strategy of the Russian Federation'. http://www.kremlin.ru/acts/bank/47046.
[2] Decree of the Presidium of the Supreme Arbitration Court of the Russian Federation dated 18.06.2013 No. 3221/13. https://clck.ru/3EAEtL.

The value of shares and their attractiveness to potential buyers (liquidity) is primarily determined by the value of the company's assets and the profitability of the activities carried out with them[3].

The market value of shares is the secondary market price of shares as quoted on the stock exchange. This price is formed during trading under the influence of supply, demand and liquidity of shares[4]. In turn, the liquidity of shares depends largely on the solvency of the issuer.

Equity liquidity is the ability to convert a given security into the most liquid asset - cash - at short notice and with minimal transaction costs.

Stock liquidity is an indicator used to analyse investment returns. In addition, no investment strategy or analytical model can exclude the risk of changes in the market situation and fluctuations (shocks) caused solely by external circumstances (e.g. impact of external sanctions on systemically important sectors of the economy, tightening of government monetary policy) that are beyond the investor's control.

In other words, an investor who wants to make a profit has to take into account the instability of the stock market, the price fluctuations and the different types of risk factors, since the specifics of the stock market involve not only making profits, but also financial losses[5].

1. Literature review

As a number of authors note, stock prices influence investment decisions. The stock market discloses the necessary information about securities in the form of market prices. The strength of the market lies in its ability to incorporate information about the company and its investment potential into the share price [Schleifer, Vischny, 1997; Chen, Horstman, 2023]. Some researchers have examined the impact of stock prices on investment [Edmans et al., 2012; Dong et al., 2021]. Studies have been conducted on the causal relationship between investment and stock returns [Titman et al., 2004; Polk, Sapienza, 2009]. Other scholars have noted that stock prices are an objective and key factor in determining a company's financial position [Holmstrom, Tirole, 1993].

In addition to stock liquidity, financial flexibility should be mentioned as a factor determining the economic activity of a company. Financial flexibility is understood as the ability of a company to finance a cash deficit in the shortest possible time with minimal impact of negative external circumstances (shocks). In other words, it is the ability of a company to respond to investment proposals under financial constraints.

Sanctions imposed by foreign countries on a number of Russian companies (in particular, the ban on debt financing of Russian oil and energy companies included in the sample of this study) impose economic and business restrictions, negatively affecting the production process and the ability to meet their obligations to counterparties. At the same time, sanctions (restrictive measures) cannot be considered a normal and predictable business risk, and the overall economic effect of the sanctions imposed can lead to a difficult financial situation in the company.

Financial flexibility is also seen as an important factor in determining a firm's choice of capital structure. For example, [Graham, Harvey, 2001] show that managers cite financial flexibility as a critical factor in the firm's choice of funding source.

Firms retain financial flexibility to pursue their investment opportunities. In particular, flexibility has a much greater impact on capital structure adjustment for firms with attractive investment opportunities [Liu, Shivdasani, 2022]. In addition, financial resources are important for adjusting the capital structure. The firm tries to adjust the timing of capital investment in response to changing conditions [Barry et al., 2022]. Organisations build cash reserves to increase financial flexibility, even in the context of high equity returns [Acharya, Steffen, 2020; Ramelli,Wagner, 2020; Fahlenbrach et al., 2021].

Finally, another important factor in the economic policy of a company is the quality of its management. The quality of management is reflected in all areas of the company's existence. In a sense, a company is what its management has done to it, i.e. the current state of the company and investment prospects are largely determined by the quality of management. In particular, management influences the level of net assets (share price) and financial position[6].

Effective management of an organisation enables a balance to be struck between the interests of shareholders, managers, employees and the public limited company itself. In determining the effectiveness of a manager's actions, the effectiveness of the manager's actions is taken into account.

In particular, the company must have stable financial indicators; there must be no signs of insolvency; there must be no shortage of funds to meet obligations to counterparties; free funds must be used for financing;

[3] Decree of the Arbitration Court of the Moscow District of 04.09.2024 in Case No. A40-32328/2020. https://clck.ru/3EAF7W.
[4] Decree of the First Arbitration Court of Appeal dated 20.08.2024 in case No. A11-1507/2023. https://clck.ru/3EAFN3.
[5] Decree of the Federal Arbitration Court of the Moscow District of 01.07.2009 in Case No. A40-51789/08-97-425. https://clck.ru/3EAFdA.
[6] Decree of the Fourth Arbitration Court of Appeal dated 09.09.2024 in Case No. A10-5639/2017. https://clck.ru/3EAKtE.

there must be no diversion of assets without which the company itself would be in financial difficulty[7].

The price of shares is not a constant value. The growth in the market value of shares traded freely on the securities market depends directly on management policy, which is subject to the influence of unforeseen circumstances, including changes in market conditions (shocks).

In contrast to previous studies, this paper extends the horizon by considering the combined impact of stock liquidity, financial flexibility and management quality on investment. In addition, the regression model presented below includes an indicator of information asymmetry - asset tangibility.

Since the value and amount of fixed assets reflected in the company's financial statements affect the size of its assets, which in turn determine the price of its shares, a decline in the value of fixed assets will affect the attractiveness of the organisation as an investment and the liquidity of its shares[8].

Fixed assets are a guarantee to creditors that the company will fulfil its obligations properly. In other words, the creditor can use them as a control over the borrower's economic activity [Costello, 2019].

The study [Chang et al., 2006] considers the tangibility of assets as an important element influencing the financial policy of the company, and the indicator itself is a determinant of the property security of the loan. Moreover, a company with a high value of fixed assets has sufficient debt potential, i.e. the ability to repay a loan of a certain amount in a timely manner [Lutsenko, 2021].

The article attempts to prove that stock liquidity reduces the level of risk by increasing the range of investment options. In addition, the quality of management policy affects the level of investment. Finally, a favourable investment situation is achieved with a flexible financial policy.

2. Research methodology and sample description

To conduct the study, a sample of Russian public companies was selected for the period 2018-2023. The purpose of the sample was to study the impact of share liquidity, financial flexibility and management quality on investment. The sample included 24 companies from ten key economic sectors with revenues exceeding RUB 10 billion[9] and financial statements prepared in accordance with international standards (IFRS). The companies' shares are traded on the Moscow Exchange PJSC. The following industries are represented: agriculture, oil and gas, food industry, ferrous and non-ferrous metallurgy, electric power, construction, trade, transport, telecommunications.

The number of observations for each Russian public company is differentiated (for some the period is 2018-2021, for others 2020-2023), so the data are unbalanced. Econometric calculations were performed using the Stata statistical package.

Table 1
Descriptive statistics

Variable	Mean value	Standard deviation	Minimum value	Maximum value
Investments (*Invest*)	0.077	0.052	0.01	0.29
Tangibility of assets (*PPE/A*)	0.436	0.238	0.02	0.89
Company size (*Assets*)	13.076	1.676	9.40	17.1
Financial leverage (*Lev*)	0.617	0.241	0.16	1.00
Total dividend payments (*Dividend*)	0.038	0.053	0	0.29
Liquidity of shares (*Liquidity_stock*)	12.158	1.855	8.50	15.90
Financial flexibility (*Flex*)	0.488	0.251	0.02	1.00

Source: The author's calculations are based on Stata.

[7] Decision of the Eighteenth Arbitration Court of Appeal dated 13 September 2024 in Case No. A07-4179/2018. https://clck.ru/3EALDh.
[8] Decree of the Ninth Arbitration Court of Appeal dated 12.10.2023 in Case No. A40-239027/16. https://clck.ru/3EALey.
[9] Order of the Federal Tax Service of the Russian Federation dated 16.05.2007 No. MM-3-06/308@. https://clck.ru/3EALtY.

2.1. Description of variables

When evaluating the regression model, a dependent (explained) variable was used - investments, which allows us to analyse the company's investment opportunities.

Some independent (explanatory) variables were borrowed from studies [Hoberg, Maksimovic, 2015; Chen, Horstman, 2023]: asset tangibility, firm size, financial leverage (an indicator of management quality) and dividend payments (a determinant of financial constraints).

The following independent variables are also included in the model: stock liquidity and financial flexibility.

Investment - the ratio of the cost of creating and acquiring tangible and intangible assets to the total value of assets.

The indicator of information asymmetry is the tangibility of assets (*PPE/A*) - the ratio of fixed assets to the total value of assets. This indicator allows the organisation to select capital taking into account its price.

The size of the company is the natural logarithm of the balance sheet total. This indicator is a determinant of the company's *Asset* security when applying for debt financing.

One indicator of management quality is financial leverage (*Lev*) - the ratio of total debt to total assets.

The total dividend payout ratio is the ratio of dividends paid to the total value of assets. This indicator is an indicator of financial constraints, as profit is not only a source of dividend payments but also a reserve for financing investments.

The liquidity of shares (*Liquidity_stock*) is the natural logarithm of the market capitalisation of assets. The method of calculation has been proposed in [Amihud, 2002].

Financial flexibility (*Flex*) is the ratio of cash and short-term financial investments to total assets plus one minus the financial leverage value. The calculation is based on the methodology of [Barry et al., 2022].

The independent variables are lagged one year. Descriptive statistics are presented in Table 1.

The capital structure of a Russian company is, on average, 62% debt and 38% equity. On average, for every ruble of total assets, there are 7.7 kopecks of investments and 43.6 kopecks of fixed assets.

2.2. Model evaluation and analysis

Below is a regression model estimating the impact of stock liquidity, financial flexibility and management quality on investment:

$$Invest_t = a_0 + a_1(PPE/A)_{t-1} + a_2(Assets)_{t-1} + a_3(Lev)_{t-1} + a_4(Dividend)_{t-1} + a_5(Liquidity\_stock)_{t-1} + a_6(Flex)_{t-1} + \varepsilon_t$$

where t - period of time for the company, a_0 - regression constant, a_1, a_2, a_3, a_4, a_5, a_6 – regression coefficients, ε – random error.

The regression model is estimated using the instrumental variables method - a dynamic panel data model.

To obtain significant coefficients (in terms of their predictive power), the model must be free from problems such as heteroscedasticity, multicollinearity and autocorrelation.

One of the advantages of panel data estimation (Arellano-Bover/Blundell-Bond estimation using the generalised moments method) is the mechanism for automatically cleaning the regression from multicollinearity. In this way, we avoid the problem of endogeneity of a possible correlation of the explanatory variables with the error term in the regression model.

Lagged variables are used as instruments in the regression model.

Heteroscedasticity can also lead to incorrect conclusions from the model. The pooled data method avoids this problem by removing heteroskedasticity. In other words, the values at different times should be independent and identically distributed, and the regression residuals should look like 'white noise'.

To check the consistency of the estimates obtained, it remains to test the model for the absence of autocorrelation (stationarity of the time series) by means of a test for autocorrelation of the first and second order residuals.

The Arellano-Bond test or the test for first and second order autocorrelation is presented in Table 2.

Table 2
First and second order autocorrelation test

Order	Z	Prob > z
1	–1.666	0.0957
2	–1.112	0.2661

The test results presented in Table 2 indicate that the null hypothesis of no autocorrelation of the residuals is satisfied. Based on the model presented, consistent and high quality estimates have been obtained and it appears to be correct.

The coefficients obtained in the regression model, significant at the 5% level, are presented in Table 3.

Table 3
A model examining the impact of liquidity, financial flexibility and management quality on investments of Russian public companies

Independent variables	Coefficient	$P>\|Z\|$
PPE/A	0.082	0.000
Assets	– 0.017	0.014
Lev	0.167	0.012
Dividend	– 0.098	0.150
Liquidity_stock	0.014	0.001
Flex	0.150	0.026

Note. Number of observations - 86.
Source: The author's calculations are based on Stata.

In addition, the Sargan test for the limits of over-identification was carried out. It is based on the assessment of the validity of the instruments (the possible presence of a correlation of explanatory variables with an error). The validity category determines the appropriateness of the instruments selected for evaluation.

The Sargan test shows that the selected instruments in the model are valid. The null hypothesis regarding the effective use of the instrumental variables matrix cannot be rejected, as the p-value is above the 5% significance level and is 36.13%.

All independent variables, except the total dividend payout ratio, are significant at the 5% level and the structural model appears to be correct.

High stock returns are associated with increased investment opportunities, financial flexibility and capital investment (positive relationship between stock liquidity, financial flexibility and investment).

The author agrees with some researchers that corporate investment improves the value of stock liquidity while reducing its risk level: a high level of investment is associated with high stock returns [Eisfeldt, 2004; Becker-Blease, Paul, 2006; Derrien, Kecskes, 2013].

At the same time, one cannot agree with the authors of [Titman et al., 2004; Polk, Sapienza, 2009] that higher investment values are associated with lower future stock returns. Investment opportunities are favourable when there is a flexible financial policy and high quality property security (positive relationship between financial leverage, flexibility, tangibility and investment). Larger companies have easier access to debt financing (negative relationship between company size and investment). The high liquidity of the shares gives the company a broad perspective when approaching an investor, as it is the investor who focuses on the quality of the company's management.

The management of public companies acts actively and prudently, positively influencing investment opportunities (positive relationship between financial flexibility, leverage and investment). The management influences the share price by adjusting the risk taking into account the information signals from the stock market, which is confirmed by the positive relationship between asset tangibility and investments [Lutsenko, 2024].

The information asymmetry associated with the security of ownership (an indicator of asset tangibility) allows the company to attract capital at a lower price. The company's ownership makes it possible to solve the problem of adverse selection - the choice of capital taking into account its price.

The author partially agrees with [Chen, Horstman, 2023] that the share price influences management's investment decisions. However, as mentioned above, the stock price is not the only factor determining management's financing decision. Information asymmetry (tangibility of assets) and financial flexibility must also be taken into account.

Conclusions

The paper attempts to prove the extended influence of factors such as stock liquidity, financial flexibility and management quality on the investments of Russian public companies. The share price creates an economic image of the company and makes it possible to extend the financing horizon and attract investment for the implementation of activities. Financial flexibility influences the active adjustment of the capital structure for the subsequent attraction of capital investment. Information asymmetry (tangibility of assets) also influences management policy in the area of financing, since tangibility is an indicator of the creditor's ownership security. Russian public companies are striving for a balanced financial policy in the context of restrictive measures and tight monetary policy. High stock liquidity allows companies to identify investment opportunities. Finally, corporate assets allow them to choose financing in terms of price, thus solving the problem of adverse selection.

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