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Stock Market Reaction to Dividend Announcements: Evidence from the Russian Market

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Abstract

The inquiry into the influence of dividend declarations on the stock values of corporations has been extensively investigated across various countries. The results of these studies have been varied, and there is limited information available on this topic specifically for the Russian market. This paper aims to demonstrate the impact of dividend announcements on the yield of Russian companies' shares. The study utilizes comprehensive data from MOEX for the period of 2008–2021, which encompasses both economic growth and recessionary periods. The results of the study indicate that the effect of decreasing, maintaining and increasing the amount of dividends corresponds to the signal theory. There are differences between industries: there are fairly stable and mature companies on the market that are not subject to significant changes (Electric Power, Oil and Gas industries); shares of companies in the Transport industry and a number of other industries behave more distinctively. In comparison with other studies, this paper analyzes the effect of increasing and decreasing dividends on stock returns using not only event analysis, but also regression analysis. This work adds results to the few available on the Russian market.The main limitations include the small number of variables in the construction of regression models and the limited period of the study. The work is carried out only for the Russian market. The obtained findings can be taken into account by company managers in order to make optimal decisions regarding the dividend policy and enhancing their dividend policies.

Keywords: signaling theory, dividend announcement, abnormal return, event study

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Introduction

The investigation of how capital markets perceive a company's choices regarding the allocation of free cash flow between investments and shareholder dividend payments is a significant research area in the fields of corporate finance and governance. The critical role of dividend decisions in managing a business and maintaining high levels of future dividend payments was first highlighted by J. Lintner in his 1956 paper [1]. The payment of dividends by a company is an important strategic decision, because investors and, consequently, the market may react differently to it, which will undoubtedly affect the stock price. Others also studied the issue, for instance M.H. Miller and F. Modigliani [2], who discovered the conditions under which the share price does not change based on decisions regarding dividends.

This paper aims to demonstrate the impact of dividend announcements on the yield of Russian companies' shares. To provide clarity on the purpose and expected outcomes of this research, it is crucial to formulate a clear research question that addresses the considered topic: How do the dividend changes affect stock market returns of Russian companies? In addition to understanding the general vector of influence, the difference between the degree and direction of influence in a crisis and more stable years for the country's economy is studied. With the aim of achieving the research objective, this study utilizes data on Russian companies from various industries. Notably, previous studies have only been conducted during stable economic periods or crisis years, without any comparative analysis of market reactions during different economic conditions. Thus, this study endeavors to determine whether the effect remains consistent during periods of recession. Therefore, a period that includes both economic deterioration and growth stages was chosen for the study (2008–2021). According to the data on GDP, inflation and unemployment rate, the time period under consideration was divided into two groups: the group of growth and stable years, and crisis years. The first included 2010–2012, 2016–2019, 2021, and the second – 2008–2009, 2013–2015, 2020. Moreover, the authors aimed to prove risk aversion among Russian investors. Since there are studies showing that people's attitude to gains is less pronounced than people's attitude to losses [3], it is fair to assume that the investors' market reaction would be stronger when dividend payouts are announced. Stock prices will depend on this reaction.

As already mentioned, the active study of the impact of news about dividend payments, as well as actual dividend payments on the value of company shares begin in mid-20th century, however, research mostly concerns developed markets, for example, the United States [4]. In regard to the Russian market, a limited number of studies have been conducted, including those by I. Berezinets et al. [5], E. Rogova and G. Berdnikova [6], and T. Teplova [7]. That is, the study of the developing countries' markets, in particular, Russia, is not heeded sufficient attention. Secondly, the authors get different results or make ambiguous conclusions. For instance, in the study of developed markets, M. Karim [8] failed to confirm the market's reaction to dividend announcements. In contrast, other research such as D.-H. Chen et al. [9] and Sh. Taneem and A. Yuce [10] have validated the signal theory, demonstrating that the market responds positively to information about an increase in dividend payments, and negatively – to information about a decrease in payments. There are also those who find the confirmation of a partial effect [11; 12].

This suggests that this topic is worth attention and research, and its consideration may lead to unexpected and interesting conclusions. In addition, the above-mentioned studies of the Russian market do not cover the recent events that have brought uncertainty to the market situation, namely, the COVID-19 pandemic. A study of this period would allow to understand the shifts in investor behavior in the period between crises. The objective of this study is to enhance our understanding of the effects of dividend announcements on the emerging Russian market. To achieve this, the most up-to-date companies' data is used, the impact of the COVID-19 pandemic is taken into account, and the results in different economic conditions are compared. The research aims to provide a new perspective on the correlation between changes in dividends and stock prices in the Russian context. In addition, this study uses not only event analysis, but also regression, taking into account the panel data, which was not obtained in sufficient quantity for research on the Russian market, to understand the attitude of Russian investors to risk in relation to dividends. This work intends to demonstrate that Russian investors have an aversion to risk, which is represented by the share values.

The work is divided into two main parts. The first section is a literature review, which touches on both the theoretical foundations and practical considerations that form the basis of this work, help to select specific data and methodology, and then allow compare the results. The second part is empirical, in which the assumptions about the connection between dividend changes and the returns of companies' shares on the Russian market are tested in practice using event study methodology. This section provides a detailed description of the data, methodology, models used, and results. Next, the limitations and discussions of the results and the conclusion are presented.

Empirical research on market reaction to changes in dividends

In the consideration of the empirical research conducted on dividend payments' correlation with stock prices, it is important to highlight the pioneering work of J. Lintner [1]. He gathered and analyzed data from obtained from the management of 28 companies, investigating the determinants of dividend policy and their impact on firm value. The results showed a significant relationship between these two variables, which was later confirmed by M.J. Gordon [13]. His research demonstrated that dividend payments have a positive effect on share price and can mitigate the risk of price fluctuations.

The results of more recent empirical studies on the impact of the announcement of dividends on the share price

are heterogeneous. Some studies have found a positive effect on the stock price [14; 15]. This result is explained by the theory of preference for dividends or the Bird-in-the-Hand theory, which consists in preferring current consumption to promises of future income; that is, investors consider dividends to be a safer income than the expectation of the company's future growth and future large returns. Others have concluded that there is a negative influence [16; 17]. The authors attributed this result to the absence of long-term growth (signal effect) and tax effect. In addition, the conclusion that dividend payments did not significantly affect the dynamics of stock prices was not uncommon [18–20]. According to researchers, dividends are a reflection of the company's past financial results, and not an expectation of future growth or deterioration. Some authors claimed that the stock prices increase before dividend announcements regardless of the amount of dividends, but when the dividends have already been paid, the stock prices should decrease (Table 1) [11; 15].

Table 1. Summary of Research Results on the Impact of Changes in the Amount of Dividends on the Share Price

Authors	Effect	Comments
Kato, Loewenstein [14]; Baker et al. [15]	Positive effect	This outcome can be explained by the theory of preference for dividends, or commonly known as the Bird-in-the-Hand theory. According to this principle, investors perceive dividends as a more secure source of income compared to the anticipation of the company's future growth and potential high returns
Rane [16]; Uddin, Chowdhury [17]	Negative effect	The authors attributed this result to the absence of long-term growth (signal effect) and tax effect
Adesola, Okwong [18]; Ling et al. [19]	No effect	According to researchers, dividends are a reflection of the company's past financial results, and not an expectation of future growth or deterioration
Grullon et al. [4]; Mahmood et al. [21]; Ham et al. [22]	Effect according to signals	For developed countries, when companies increase dividend payments, there is generally a moderate increase in stock prices, and if there is a reduction, then, accordingly, stock prices fall. The same is true for developing countries
Hu and Ahmed [23]; Taneem and Yuce [10]; Ali [24]	Partial effect according to signals	In developing countries, the compliance of the results of the signal theory can only be related to positive news (about the growth of dividends)
Attig et al. [25]	Significant impact of uncertainty on dividend payments	The companies' dividend policies are adjusted depending on the economic situation
Prakash and Lokesh [26] Ali [24]; Mazur et al. [27]	Greater effect during crisis years	The market response to the dividend announcement during the COVID-19 pandemic is more positive than in previous years. The difference in the reaction during the crisis period depends on the company's industry

Empirical research on the reaction of the Russian market to changes in dividends

Empirical research has been conducted on the reaction of the Russian market to changes in dividends. It is essential to note the findings and works in this area that are specifically related to the Russian market, as this study is about Russian companies.

T. Teplova [7] in her research tested the market reaction to announcements of dividend payments on shares of Russian companies that were traded on the RTS, New York and London exchanges in 1999–2006. The result of data analysis showed that both the Russian and foreign markets reacted negatively to good news (about the increase in dividend payments). This conclusion was partially confirmed in the study by E. Rogova and G. Berdnikov [6], which was already conducted on more modern data (2009–2013). During the period under review, the increase in dividends entailed a negative abnormal return. At the same time, a positive reaction to the announcement was discovered for bad news (about the reduction of dividend payments). The authors also noted that the negative reaction was observed in such industries as oil and gas, metallurgy, mining, and it was most significant in the chemical industry.

In addition, it is worth noting the work of I. Berezinets et al. [28], which focused on the post-crisis period (2010–

2012). The market reaction to good news was consistent with the works discussed above, however, with bad news, the market acted in accordance with the signal theory. The authors concluded that the reaction to bad news was more significant than to good news. They noted that there was a dissemination of insider information, as the market reacted a few days before the announcement of dividends. I. Berezinets et al. [5] explained the negative reaction to the news about the increase in dividends by the specifics of the period under review, since these were post-crisis years with rapid economic growth. H.R. Turaev [29] conducted a similar study, but the period under review was 2010–2014. He obtained similar results for the dividend increase and dividend decrease groups. In addition, he considered the group that included companies with unchanged dividends compared to previous year. The author concluded that there is no significant market reaction for such observations, and the research confirms the signal theory (Table 2).

Table 2. Summary of Research Results on the Impact of Changes in the Amount of Dividends on the Share Price for the Russian Companies

Authors	Effect	Comments
Rogova and Berdnikov [6]; Teplova [7]	The reverse effect of the signal theory	An increase in dividends is a signal of a decrease in the company's investment opportunities, which leads to a decrease in value
Berezinets et al. [5]; Berezinetset al. [28]	Partial effect according to signals	The reaction is negative to both types of events (increase and decrease in dividends), but it is more significant to "bad" news. There was the impact of the dissemination of insider information due to the reaction before the event
Turaev [29]		Negative market reaction to both dividends' growth and reduction, lack of reaction to unchanged dividends

Research design and results

Hypotheses

The study examines the market reaction used to calculate the indicator of abnormal return on companies' shares. The literature review showed that although the results of researchers vary, but the majority of works related to this subject reach conclusions in full or partial accordance with the signal theory [10; 12; 21; 23; 27; 29]. In accordance with the signal theory for dividends, the higher dividends can be considered a positive signal for the market, the lower dividends imply a negative market reaction, and if the dividend amount is the same as expected market should not react. Therefore, in accordance with the signal theory and with works such as H.R. Turaev [29], Sh. Taneem and A. Yuce [10], in which similar hypotheses were put forward, the three basic assumptions are developed:

H1: An announcement of increased dividends on average causes a positive market reaction and an announcement of reduced dividend payments on average causes a negative market reaction.

H2: An announcement of unchanged dividend payments on average does not significantly influence the market.

Some research highlights the influence of dividends on the market, both in a general sense and when taking into account the specific industries in which companies operate. Notably, a study conducted by E. Rogova and G. Berdnikov [6] revealed that dividends in the Fuel and Energy and Metallurgy sectors do not have a substantial impact on stock quotes, in contrast to other industry sectors. This information allows to draw the following hypothesis:

H3: Different industries react unevenly to the announcement of a change in dividend amount.

Several studies were conducted that focused on the economic state of the country during the reviewed period. In addition, some works considered the COVID-19 pandemic. According to the results obtained by J.F. Abreu and M.A. Gulamhussen [30] and N. Attig et al. [25], the market reaction and the dividend policy of companies can vary depending on the state of the economy. N. Prakash and Y. Lokesh (2021) [26] demonstrated a stronger reaction to positive changes in dividends and a stronger reaction to negative changes in the dividend amount. In this regard, the statements presented below concerning crisis periods and growth periods in general and specifically for the COVID-19 pandemic period are composed:

H4: In years of crisis, in particular, the years of the COVID-19 pandemic, the influence of both positive and negative news is stronger than at other times.

Y. Yang et al. [3] note that people are generally more sensitive to loss than to gain. In their research, they estimated the ratio of losses to people's reactions to gains and found that the subjective impact of losses is about twice as great as that of gains. Based on the above, the following hypothesis has been formulated:

H5: The negative effect of the announcement of lower dividend payments on the share price is stronger than the positive effect of announcement of higher dividend payments.

The methodology and data found and analyzed to verify the assumptions made are described below.

Methodology

The basic or fundamental work for this research is the study of R. Ball and P. Brown [31], which uses the announcement of the financial results of companies as an event, and the capitalization as the object of influence, that is, we can

say that the performance indicators have an impact on the market price of companies. Different events can act as events, such as news related to financial statements, changes in management, mergers and acquisitions, and so on. However, dividend announcements are also often of interest, have been studied quite often [8; 32] and are also discussed in this paper. If we consider the works of interest in terms of the essence of the methodology, we can mention the study of A.C. MacKinlay [33], which offers a five-step algorithm and is the standard for such studies, so this study also relies on it. Data analysis by event study involves several steps, which will be described below.

Division of events into groups. To apply the method of event study, the data are pre-divided into three groups of events: "bad", "neutral" and "good". Due to the presence of major changes in the amount of dividends, an increase or decrease of less than 5% does not seem significant. The results are checked at different classification thresholds. Therefore, in accordance with the approach used in the work of C. Andres et al. [34], events are classified into three categories depending on the indicator of the surprise of the dividend payment with a threshold of 5%. This option enlarges the group of "neutral" events and allows it to be used in the analysis. "Bad" events refer to news that results in a 5% or greater reduction in dividend payments compared to initial projections. Conversely, "good" events denote the news of a growth in dividends by 5% or more compared to initial projections. The group of "neutral" events includes those news that had no effect on the size of dividends compared to the expectations, or the change is within 5% downward or upward.

The distribution into groups occurs depending on how the amount of dividends has changed relative to what was expected. In this paper, a naive model is used, which assumes that the amount of expected dividends is equal to the amount of last year dividends, that is,

$$Expected\ dividends_{naive,t} = Dividends_{t-1}, \#(1)$$

where t is the year under consideration, and t–1 is the year preceding the year t.

Definition of the event and selection of the event and estimation window. The event that potentially affects the change in the companies' stock returns in this paper is the annual announcement of Russian companies to pay dividends between 2008 and 2021. The dividend announcement refers to the day of the board of directors meeting. This is the day when the information about the number of dividends and the date when the dividend payment may occur is provided to the market for the first time. It is on this day that market participants find out what dividends they can receive, whether dividends have decreased compared to last year, remained the same or increased. They form their attitude to such news, and their subsequent behavior may be reflected in changes in the companies' stock prices. This day is important for companies because it can affect their value.

The event window is a time window for observing stock prices. The selection of the event window duration is contingent upon the extent of the event's impact, namely whether it is a protracted or brief influencing factor. Dividend payout announcements can be categorized as a group of events with a potentially short-term impact. A time window of 3 [34] to 21 days [7] is typically used for such an event. In this paper, an event window of 11 days is used, as in E. Rogova and G. Berdnikova [6] and I. Berezinets et al. [28], since it can be considered optimal to capture the impact of the event and not lead to unnecessary noise unrelated to the event. Thus, the event announcement occurs at zero time period ($t_0 = 0$), and t_1 and t_2 (event window bounds) are –5 and 5, respectively.

The estimation window is a time window for estimating model parameters that does not overlap with the event window. A review of studies on the topic in question showed that a window of 100 to 300 days is chosen as the window of estimation.

Calculation of actual and normal returns. The following formula is used to estimate actual stock returns ($R_{i,t}$):

$$R_{i,t} = \ln\left(\frac{P_{i,t}}{P_{i,t-1}}\right), \#(2)$$

where $P_{i,t}$ – share price of company i on day t of the event window; $P_{i,t-1}$ – the share price of company i on day t–1 of the event window. The daily quotes of the companies' shares, namely the daily closing prices, are used to estimate the yield.

The term "normal return" refers to the expected return that a company's shares would generate in the absence of any extraordinary events. To estimate this normal return, the market model is typically utilized, which assumes a linear correlation between the return of the market and the yield on the share of the organization. The following equation represents the market model:

$$E\left(R_{i,t}\right) = \alpha_i + \beta_i \bullet R_{m,t} + \varepsilon_{i,t}, \#(3)$$

where $E(R_{i,t})$ – the expected return on the stock of company i on day t; α_i – intercept for company i; β_i – slope coefficient for company i; $R_{m,t}$ – market index return on day t; $\varepsilon_{i,t}$ – a random error value. The coefficients α_i and β_i are estimated using the method of least squares (OLS). The Moscow Stock Exchange Index for the corresponding period is used as a market index. The returns for it are calculated in the same way as for the shares of companies.

The calculation of abnormal return (AR) for each day within the event window. AR is determined by subtracting the expected return from the actual one over the period of the event window, which can be computed using the following formula:

$$AR_{i,t} = R_{i,t} - E\left(R_{i,t}\right) = R_{i,t} - \alpha_i - \beta_i \bullet R_{m,t}, \#(4)$$

where $AR_{i,t}$ – the abnormal return of company i on day t; $R_{i,t}$ – the actual profitability of company i on day t; $E(R_{i,t})$ – the normal (expected) return of company i on day t.

Calculation of cumulative abnormal return (*CAR*), average abnormal return (*AAR*) and average cumulative abnormal return (*CAAR*). In order to avoid accounting for random

changes in returns, abnormal returns are accumulated in the interval included in the event window and averaged over the entire sample of events. The cumulative abnormal return is calculated using the formula:

$$CAR_i(t_1,t_2) = \sum_{t=t1}^{t_2} AR_{i,t}, \#(5)$$

where $CAR_i(t_1,t_2)$ – the accumulated abnormal return during the event window period; $AR_{i,t}$ – the abnormal return of company i on day t; t_1 – the lower boundary of the event window (–5); t_2 – upper boundary of the event window (5). If a positive value is obtained, we can conclude that the event in question creates firm value, i.e., there is a positive effect.

This study uses not one event, but a group of N homogeneous events. In this case, the abnormal return is averaged over the entire sample. The average abnormal return (AAR) for day t is found as follows:

$$AAR_t = \frac{1}{N} \bullet \sum_{t=1}^{N} AR_{i,t}. \#(6)$$

In addition, the values for each event are aggregated, that is, the average cumulative excess return ($CAAR$) is calculated as the sum of the average excess returns on the days of the event window:

$$CAAR(t_1,t_2) = \sum_{t=t1}^{t_2} AAR_t. \#(7)$$

The significance of the announcement of dividends on the market can be better understood by analyzing the indicators of average abnormal return and cumulative average abnormal return. Therefore, it is imperative to determine whether these indicators are statistically significant. For this purpose, the paper uses a cross-test, which has also been applied in such works as, for example, H.R. Turaev [29], C. Andres et al. [34]. When conducting this t-test, t-statistics are calculated to check the following hypotheses:

H0: $AAR(t_1;t_2) = 0$ or announcements of dividend payments do not result in abnormal returns.

H1: $AAR(t_1;t_2) \neq 0$ or announcements of dividend payments result in abnormal returns.

The following formula is used to calculate t-statistics:

$$t_{AAR_t} = \sqrt{N} \frac{AAR_t}{\sigma_{AARt}}, \#(8),$$ where N – number of events;

AAR_t – average abnormal return; $\sigma^2_{AAR_t}$ – the standard deviation for the average abnormal return, which is calculated as follows:

$$\sigma^2_{AAR_t} = \frac{1}{N-1} \sum_{i=1}^{N} (AR_{i,t} - AAR_t)^2. \#(9)$$

For $CAAR$, statistics are calculated in a similar way, that is, for testing H0: $CAAR = 0$ t_{CAAR_t} is obtained as follows:

$$t_{CAAR_t} = \sqrt{N} \frac{CAAR_t}{\sigma_{CAARt}}, \#(10)$$

where $\sigma^2_{CAAR_t}$ – estimated variation for the cumulative average abnormal return on the sample:

$$\sigma^2_{CAAR_t} = \frac{1}{N-1} \sum_{i=1}^{N} (CAR_{i,t} - CAAR_t)^2. \#(11)$$

Testing the risk aversion of investors in the Russian market. In our paper we also want to test the hypothesis concerning investors' risk aversion. We hypothesize that the announcement of a dividend increase leads to a certain percentage increase in stock prices (x). At the same time, the announcement of a dividend cut leads to a larger percentage decrease in stock prices (y) because of investors' risk aversion. Thus, if a company announces a positive dividend surprise, the company's stock price rises by x%. If the dividend surprise is negative, then the company's share price decreases not by x%, but by y%. In this case $y > x$.

This assumption stems from the fact that investors are inherently risk-averse. It is logical to assume that risk-averse investors would react actively to the news of a negative dividend surprise, which would lead to a significant decline in stock prices.

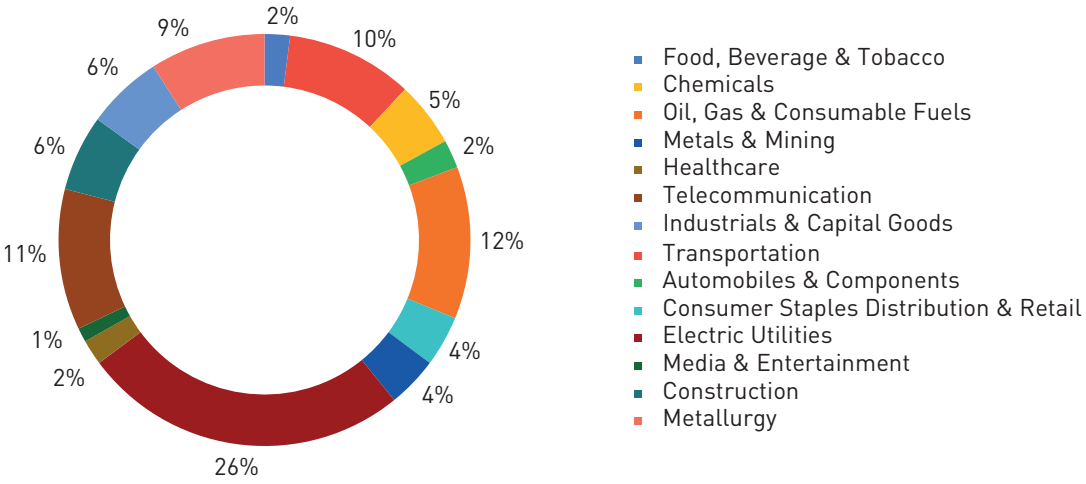
To confirm the hypothesis that the announcement of a dividend payout increase leads to a certain positive effect on stock prices, and the announcement of a dividend payout decrease leads to a stronger negative effect on stock prices due to investors' attitude towards risk, we plan to use regression analysis to calculate the coefficients of positive and negative news' impact on cumulative average abnormal return. Thus, an attempt will be made to confirm that investors in the Russian market are risk averse.

Data

The study examines Russian companies; therefore, the sample includes companies that are traded on the Moscow Stock Exchange or on the Moscow and St. Petersburg Stock Exchanges and make dividend payments. Initially, 214 companies were included in the sample. The sample included companies that paid annual dividends in 2008–2021. However, several data selection criteria were imposed. First, the sample does not include the companies that can be classified as illiquid, namely those that have not been traded on the market for more than two weeks. The paper does not select a strict liquidity criterion, e.g., daily trading in stocks (for example, [6]), only the largest and most well-known companies are most often continuously traded on the Russian market. This approach allows to remove companies with truly irregular trading patterns, but at the same time leave enough data. Secondly, in Russian practice, companies often pay dividends based on the quarterly results, from retained earnings, unplanned and so on. For this work, only the dividends paid according to the results of the year (or annual), were left in the dataset. Also, those observations were not taken into account if there were events like consolidation or splitting of shares in the year for which dividends were paid [28]. Third, financial sector companies are excluded due to the presence of features different from the real sector of the economy. In addition, it should be noted that the aforementioned announcements do not take into account other significant news that can affect

stock prices, such as profit announcements. After carefully selecting data in accordance with specific criteria, our final sample consisted of 66 companies and 452 dividend payment announcements. It's worth mentioning that the sample encompasses various sectors of the economy, with 14 industries represented (Figure 1).

Figure 1. Distribution of companies from the sample by industry



The period from 2008 to 2021 is selected as the study period since it includes both crisis years and periods of recovery and stability. Information about their belonging to the group of crisis or stable years is included in the analysis, which allows to make conclusions about the presence or absence of differences in the market reaction to the announcement of dividends in different periods of the state of the country's economy.

For the purpose of event analysis, the data which includes the names of the companies, their respective industries, the date of dividend payment announcement, and the total amount of dividends paid over the years under consideration have been gathered. Using this information, each event has been categorized into one of three groups – "Bad", "Neutral", or "Good" – based on a comparison of actual dividends with expected dividends or dividends from the previous year. Our analysis has revealed that there were 154 events categorized as "Bad", 86 events classified as "Neutral", and 212 events indicating an increase in dividend amount, which fall under the "Good" category.

The paper also uses methods for panel data (Fixed effects model), so it is necessary to determine which variables are included in the model. The dependent variable is CAR(T) or cumulative abnormal return for the event window T, which is 11, as indicated in the part before. The explanatory variable is Dividend change, which is defined as the relative change in actual dividends compared to expected dividends, that is, it is found by the following formula:

$$Dividend\ change = Dividend - Expected\ dividend, \#(12)$$

where Dividend is the actual amount of dividends; Expected Dividend is the amount of dividends for the previous year.

To obtain more accurate results, additional variables are included in the model, they are the variables of interest, such as:

- According to A. S. Amin et al. [35], the size of a firm can be measured by the logarithm of its capitalization. It is conjectured that the firm's size may not have any impact on CAR(T) or may have a negative effect. This is because bigger companies typically have a longer operating history, better control, and more liquid shares.
- The profitability of the company, expressed as ROA [35], and lagged for one year. It is assumed that ROA has a positive effect on CAR(T).
- The firm's age, expressed as a logarithm of the age of the company, to control for maturity [35].
- Tobin's Q is a market valuation indicator that measures the market price of a share on the day of the dividend payment announcement relative to the book value of one share at the end of the preceding year [36]. It is utilized to gauge investors' expectations regarding a company's growth and investment opportunities. Typically, this indicator is expected to have a negative impact on the dependent variable. This is due to the fact that the market reaction to dividend growth is higher for companies that possess fewer investment opportunities.
- The Debt-to-Equity (D/E) ratio is a crucial financial indicator that calculates the ratio of a company's total debt value to the value of its total equity at the end of the year preceding the change in dividends [36]. This ratio provides insights into the financial risk that a company carries. A higher D/E ratio implies a higher financial risk, which lowers the chances of increasing dividends. Therefore, a favorable outcome is anticipated, as the market reaction tends to be stronger with higher D/E ratios.
- Dummy variable to reflect the state of the economy, equal to 1 for the period of crisis and 0 for the period of recovery or stability.

Results

The reaction of the Russian market to the change in dividends for the entire sample and for three types of events

To begin with, the average abnormal return, cumulative average abnormal return indicators and the corresponding t-statistics for the entire sample as a whole were calculated. The results of this analysis are shown in Table 3. In general, a significant increase in abnormal return on the Russian stock market is observed 4 days before the announcement (at t = =–4 AAR = 0.33%; significant at the 5% level) and on the day of the announcement of the amount of dividends and one day after (at t = 0 AAR = 0.39% and at t = 1 AAR = 0.21%; significant at the 10% level). The CAAR value demonstrates a similar market reaction and by the end of the event window under consideration turns out to be equal to 1.15%, which is significant at 1% level. It can be concluded that the market reaction is generally positive as AAR around the event is more than 0 and CAAR is positive by day 5 after the announcement. That is, when companies provide information to the public about the amount of dividends, the market has an instant positive reaction to this news.

Table 3. AAR, CAAR, t-statistics for the whole sample

Day of event window	AAR, %	t-value (AAR)	CAAR	t-value (CAAR)
–5	–0.02	–0.21	–0.02	–0.21
–4	0.33	2.49**	0.30	2.04**
–3	0.05	0.52	0.36	1.93*
–2	0.11	0.90	0.47	2.07**
–1	0.06	0.44	0.52	2.01**
0	0.39	1.71*	0.91	2.71***
1	0.21	1.65*	1.13	3.10***
2	–0.13	–1.27	0.99	2.70***
3	–0.13	–1.41	0.86	2.32**
4	0.14	1.34	1.00	2.56**
5	0.15	1.25	1.15	2.73***

*Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

The first group of events, which included the observations where the difference between dividend payments compared to last year exceeded 5%, is considered. Table 4 shows the results for this group. First, it can be noted that the largest average abnormal return (AAR) occurred on day 0, that is, on the day of the announcement of the decision to pay dividends and of their amount; the abnormal return is 1.38% on this day and it is significant at the 1% level. This means that when information that the company intends to pay larger dividends than it did last year, that is, than expected, becomes available to the public, the market reacts positively to this news. On the next day, on average, there is also a significant 10% positive market reaction (AAR = 0.34%). On the second day after the event, the abnormal return is –0.36% (significant at the 5% level). However, on the 5th day after the event, the AR again becomes significantly positive. The same situation is observed before the event. That is, it can be noted that on average the market demonstrates a positive abnormal return with small negative deviations 2 days before and 2 days after the announcement of dividends.

As for cumulative average abnormal return, there is clearly a positive trend towards an increase in the indicator from –2 days to 1 days. After the day of the event, the CAAR gradually decreases to the 4th day of the event window. Almost all values except t = –5 are significant. That is, the cumulative average abnormal return increases sharply on the exact day and on day after when companies announce an increase in dividends, but then decreases significantly for the market for t = 2 (Figure 4). In general, over the period of 11 days around the event (CAR(–5; 5)), the average abnormal return accumulates to a value of 1.98%. It is believed that if the value of CAAR is positive, then value has been created as a result of the event.

Table 4. AAR, CAAR, T-statistics for the Dividends Increases

Day of event window	AAR, %	T-value (AAR)	CAAR, %	T-value (CAAR)
–5	–0.12	–0.67	–0.12	–0.67
–4	0.24	1.57	0.15	0.83
–3	0.20	1.37	0.36	1.45

Day of event window	AAR, %	T-value (AAR)	CAAR, %	T-value (CAAR)
–2	–0.37	–2.39**	–0.01	–0.04
–1	0.27	1.65*	0.25	0.78
0	1.38	3.57***	1.64	3.33***
1	0.34	1.81*	1.98	3.54***
2	–0.36	–2.34**	1.62	3.00***
3	0.09	0.72	1.72	3.12***
4	–0.15	–0.96	1.56	2.69***
5	0.42	2.58**	1.98	3.15***

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

For a group of events classified as neutral, it turned out that AAR is significant at the 5% level only 3 days before the announcement of the unchanged amount of dividends and is equal to 0.49% (Table 5), and is significant at the 10% level 3 days after the event (AAR = –0,38%). That is, according to this indicator, the market reacts positively before the event, perhaps counting on the good news, and then with a delay after learning that the dividends remain the same, the market shows a significant negative result. In addition, CAAR(–5; 5) demonstrates fairly rapid growth and by the end of the event window, the indicator is 1.46% and is significant at the 10% level.

Table 5. AAR, CAAR, T-statistics for the Unchanged Dividends

Day of event window	AAR, %	T-value (AAR)	CAAR, %	T-value (CAAR)
–5	0.04	0.15	0.04	0.15
–4	0.46	1.82	0.49	1.33
–3	0.49	2.38**	0.98	2.19**
–2	0.32	1.37	1.30	2.41**
–1	–0.17	–0.64	1.13	2.01**
0	–0.01	–0.03	1.12	1.85*
1	0.50	1.65	1.62	2.60**
2	–0.38	–1.73*	1.24	1.77*
3	–0.07	–0.29	1.17	1.74*
4	0.25	1.18	1.41	1.97*
5	0.05	0.25	1.46	1.91*

* Significant at the 10% level; ** Significant at 5% the level; *** Significant at the 1% level.

The third reviewed the results obtained for the announcements of a reduction in the amount of dividends. Table 6 shows the indicators of AAR and CAAR, as well as the corresponding t-statistics for this group of events. A test of the hypothesis about the difference between AAR and zero showed that at the 5% significance level in the period t = –3 and t = 3, that is, 3 days before and 3 days after the announcement of the reduced amount of the dividend payment compared to the previous year: at the 10% significance level in the period t = 2. Moreover, the AAR value on these days is negative (at t = –3 and t = 3 AAR = –0.53% and AAR = = –0.42%, respectively; at t = 2 AAR = –0.34%). That is, perhaps insider information is used 3 days before the event, and there is a delayed significant reaction to the decrease in dividends. Also, Figures 3 and 4 clearly demonstrate that in the event window (–5; 5) around the announcement of a negative change in the amount of dividends, there is a negative market reaction in 2008–2021. There is an increase in return in the market on average only 3 days after the announcement of a reduction in the amount of dividends.

Table 6. AAR, CAAR, T-statistics for Dividend Decreases

Day of event window	AAR, %	T-value (AAR)	CAAR, %	T-value (CAAR)
–5	0.01	0.08	0.014	0.10
–4	0.24	0.90	0.255	0.87
–3	–0.53	–2.53**	–0.272	–0.79
–2	0.38	1.44	0.108	0.25
–1	0.08	0.26	0.187	0.35
0	–0.21	–0.64	–0.020	–0.05
1	–0.20	–0.91	–0.221	–0.37
2	–0.34	–1.74*	–0.563	–0.85
3	–0.42	–2.45**	–0.988	–1.66*
4	0.33	1.75*	–0.656	–0.94
5	–0.03	–0.14	–0.688	–0.93

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

The reaction of the Russian market to changes in dividends in different industries

The largest industries represented in this study are Electric Power, Oil and Gas, Telecommunications and Transportation. The above-mentioned four most frequently examined industries were used in the analysis, as well as a group that includes all other sectors. The group of other goods includes industries such as Metallurgy, Industrial & Capital Goods, Metals & Mining, Chemicals, Retail, Construction, Healthcare, Food, Beverages & Tobacco, Automobiles & Components and Media & Entertainment. The results showed several significant differences between industries. First, the most stable industries, which have almost no reaction to the announcement of dividends, are Electric Power and Oil and Gas. For the Electric Power industry, the AAR turned out to be significant at the 5% level only on the t = –2 (AAR = 0.56%), and for the Oil and Gas Industry there was no significant reaction. In addition, the graph with CAAR for different industries (Figure 5) demonstrates that they are closest to reaching zero for this indicator, especially the Oil and Gas industry. Moreover, the Transportation industry is most noticeably dissimilar. It demonstrated a clear and rapid upward trend, while the AAR turned out to be positively significant in the 1st and 4th days after the event. But for Telecommunications Services, the situation is the opposite, and on the 2nd and 5th days after the event, there is a negative market reaction to the event. Thus, market dynamics generally coincide for different industries, however, the Telecommunications sector and the Transport sector are distinguished.

If we consider these industries to adjust dividends in an upward direction, then all industries have positive dynamics of cumulative average abnormal return till the day of the event (Figure 3). For all industries, CAAR increased on day 0, and prices subsequently decreased. However, the results were significant only for Transport and Telecommunications. As for the negative changes in the amount of dividends, a strong decrease in abnormal return for other industries (other than the four under consideration) to t = = –1 and the increase in CAAR starting from the day of the announcement (Fig. 4) is apparent. Many industries belonging to the "Other" group are not mature, so investors are willing to sacrifice immediate benefits in the form of dividends in favor of making a profit in the future. In this case, companies can invest money in development and postpone dividends. Among industries belonging to the "Other" group, dividends are traditionally comparatively small in the market relative to Oil and Gas and Telecommunications, and therefore investors are weaker to react to changes, i.e., these changes are insignificant relative to the dividend per share. The decline is also observed for the Oil and Gas industry, but it is not significant. The Telecommunication industry demonstrates a significant increase in AAR on the day of announcement, but then a significant negative value on day 3. And for the Transport industry, on the contrary, after the day the market receives information, there is a significant increase in abnormal return.

Figure 2. Cumulative Average Abnormal Returns for Different Industries (all data)

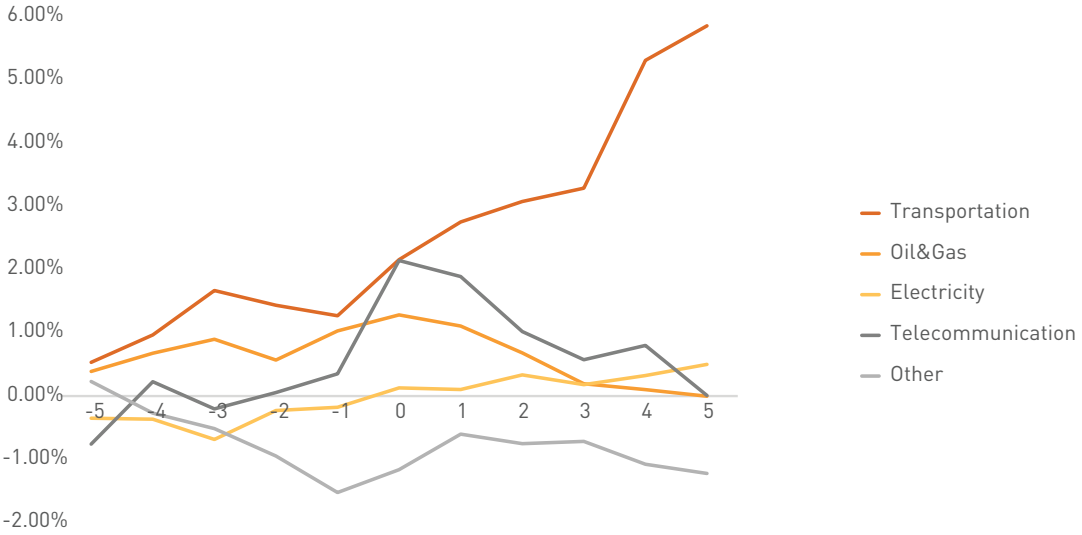


Figure 3. Cumulative Average Abnormal Returns for Different Industries (increase in dividend amount)

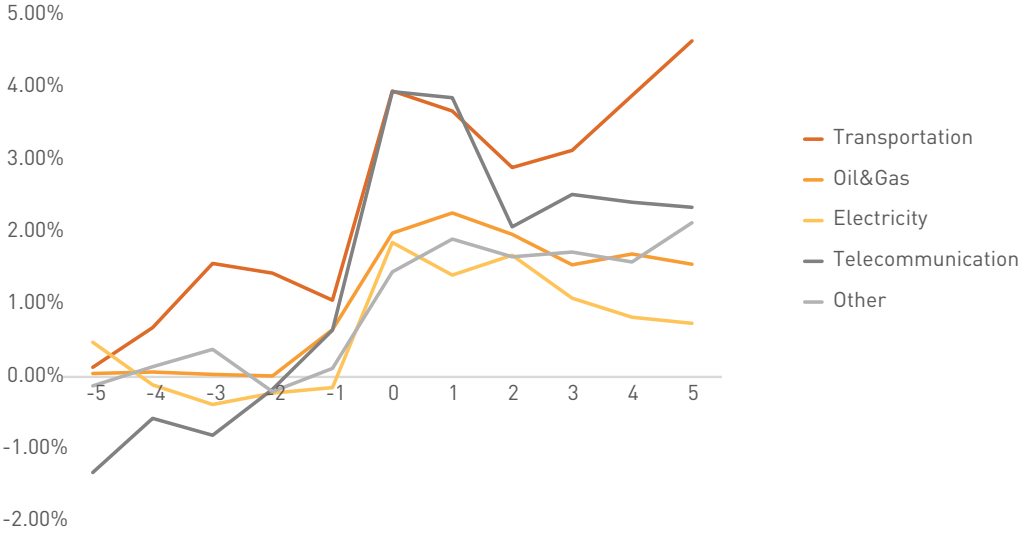
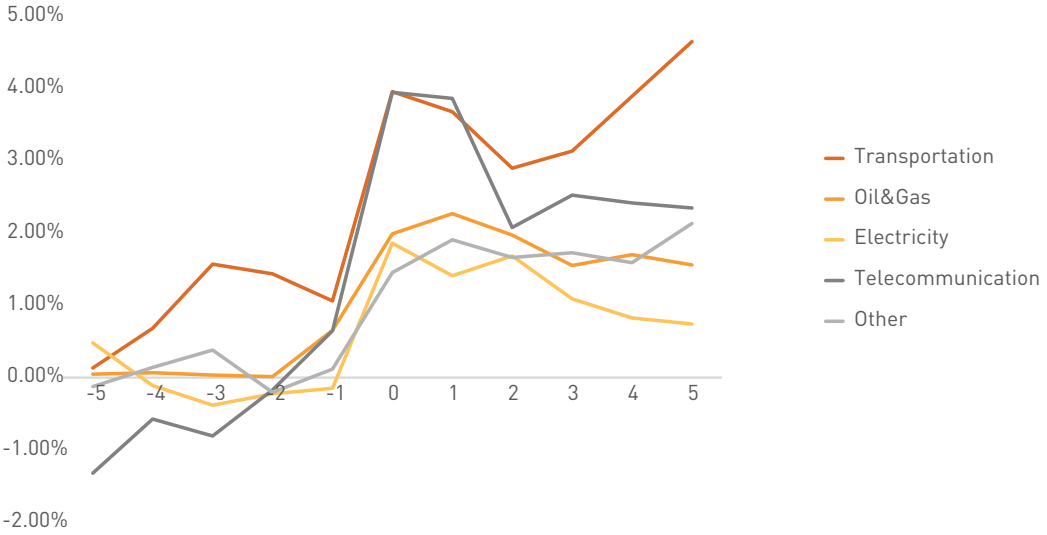


Figure 4. Cumulative Average Abnormal Returns for Different Industries (decrease in dividend amount)



Response of the Russian market to changes in dividends in the years of crisis and growth

Let us consider the results of the Event Study on a sample of Russian companies for crisis and non-crisis years. The years 2008–2021 were used for analysis. Based on the indicators of the index of physical volume of GDP, inflation and unemployment rate, the following years were included in the group of crisis years: 2008, 2009, 2013, 2014, 2015, 2020, and the following years distinguished by stability or growth were included in the group: 2010, 2011, 2012, 2016, 2017, 2018, 2019 и 2021. The crisis years were 2008 and 2009, as 2008 saw the U.S. mortgage crisis and a drop in oil and metal prices. These events had repercussions for financial markets around the world, affecting Russia as well. In the summer of 2008, the Russian stock market collapsed. At that time Russian companies had a record volume of foreign debts. The state had to intervene to support companies and prevent the collapse of the economy. In 2014–2015, there was a drop in world oil prices, and the country was still having a hard time because of the sanctions that were imposed after the annexation of Crimea. Dependence on energy resources had a negative impact on the country's economy when global oil prices fell sharply. In 2020, Russia was in the phase of overcoming the consequences of the COVID-19 pandemic. The crisis years were characterized by a drop in the physical index of the country's GDP, an increase in inflation and unemployment (Figure 5).

Figure 5. Macroeconomic indicators of Russian market

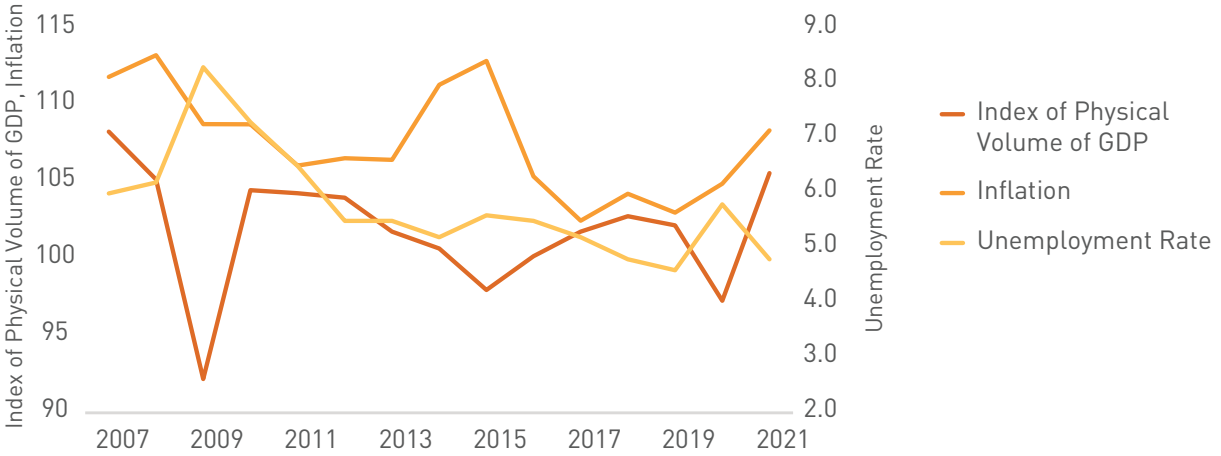
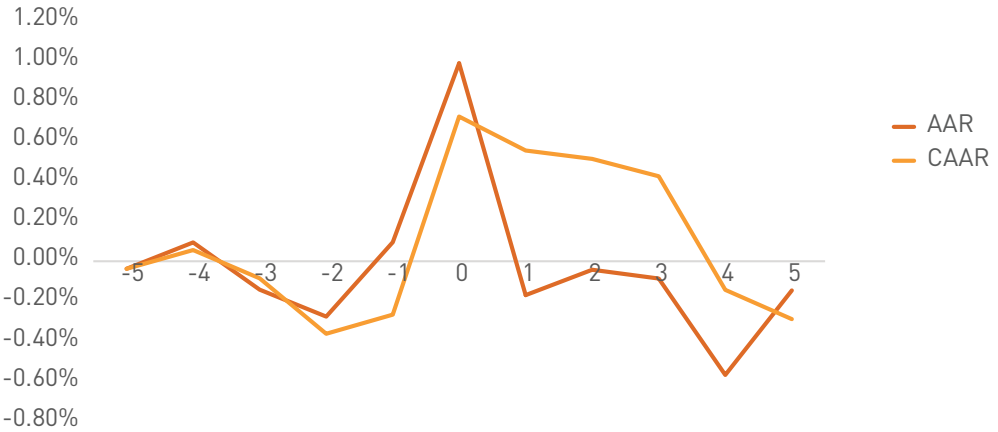


Figure 6. Cumulative Average Abnormal Returns and Average Abnormal Returns for Stable Years Group (increase in dividend amount)



News related to dividend announcements, as in the analysis above, were divided into good, neutral and bad. First of all, let's analyze the market reaction to announcements of increased dividends on the selected time horizon, characterizing stability or growth. For clarity, graphs of the behavior of Average Abnormal Return (AAR) and Cumulative Average Abnormal Return (CAAR) in the event window were created (Figure 6).

Testing of the hypotheses showed that the Average Abnormal Return is significantly different from zero on day t = 0 at the 10%-level of significance. In the meantime, the values of the Average Abnormal Return on day 0 are positive, so we can say that the increase in dividends was met with a positive response from investors, indicating their immediate reaction. We can see the gradual decrease of CAAR on the graph of the Cumulative Average Abnormal Returns from the day of the announcement of the dividend increase. The tendency for the Cumulative Average Abnormal Return to decrease from the day of announcement to the end of the observation is clearly visible in Figure 6. By the 11th day of the event window, the Cumulative Average Abnormal Return reached the value of –0.3%.

Below we consider the reaction of the Russian market to the announcement of an increase in dividend payments during the crisis years.

The results obtained during the analysis show that the Average Abnormal Return is significantly different from 0 on the day t = 0 at the 5% significance level and on the day t = 2 at the 10% significance level. In the meantime, the value of the Average Abnormal Return on day t = 0 is positive, but on the day t = 2 it is negative. The Russian market shows an immediate positive response to the news of increased dividends in the crisis periods, but then investors act cautiously again. The graph of Cumulative Average Abnormal Return shows the gradual increase of CAAR from the day of the announcement of the increased dividend amount (t = 0). Figure 7 clearly shows an upward trend in the Cumulative Average Abnormal Return from the day of the announcement of the increased dividend value until the end of the observation. By the 11th day of the event window, the Cumulative Average Abnormal Return reached the value of 2.02%.

The following is a discussion of the results obtained by analyzing neutral news about dividend announcements during periods of stability or growth. In such news, the change in the amount of dividends for the year does not exceed 5% in both positive and negative directions (Figure 8).

Figure 7. Cumulative Average Abnormal Returns and Average Abnormal Returns for Years of Crisis (increase in dividend amount)

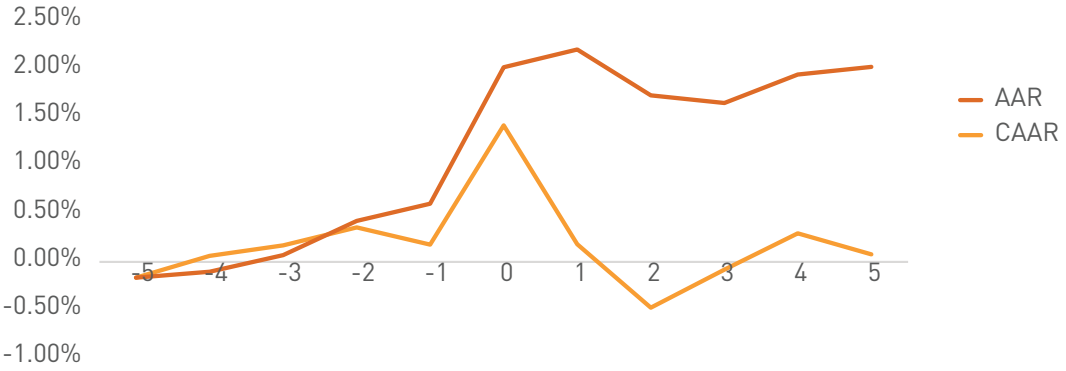
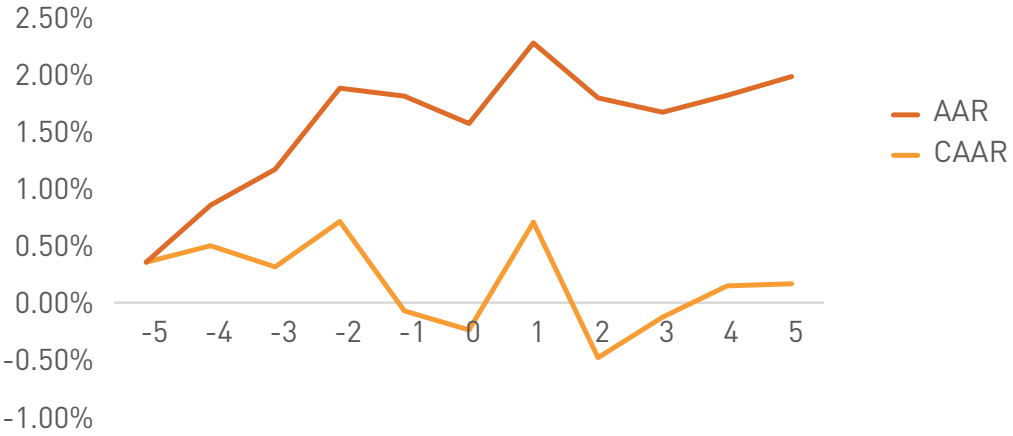


Figure 8. Cumulative Average Abnormal Returns and Average Abnormal Returns for Stable Years Group (the amount of dividends is constant)



For the group of events categorized as neutral, it turned out that two days before the announcement of an unchanged dividend, the AAR reaches 0.71%, which is significant at the 5% level. Then, it is significant at the 10% level on the day t = 1 and has a positive sign. But, then on the day t = 2 AAR is significant at the 5% level with a negative sign. Nevertheless, CAAR(–5; 5) shows stable growth and by the end of the event window the indicator is equal to 2%.

Below is a chart with the results of analysis on neutral news during the crisis years (Figure 9).

n the group of crises years, the analysis did not reveal a single day when the announcement of a slight change in the amount of dividend payments significantly affected the reaction of the Russian market. In the meantime, on the graph of Cumulative Average Abnormal Return we can see the fluctuation of CAAR. By the 11th day of the event window the Cumulative Average Abnormal Return value is almost negative.

Below we will consider the results of the analysis of bad news, i.e., announcements of reduced dividend payments during periods of stability or growth. Graphs of changes in the Average Abnormal Return, as well as the Cumulative Average Abnormal Return in the event window are shown in Figure 10. According to the graph, we can conclude that the "bad" news on the segment of stable years causes a negative reaction of the Russian market.

Figure 9. Cumulative Average Abnormal Returns and Average Abnormal Returns for Years of Crisis (the amount of dividends is constant)

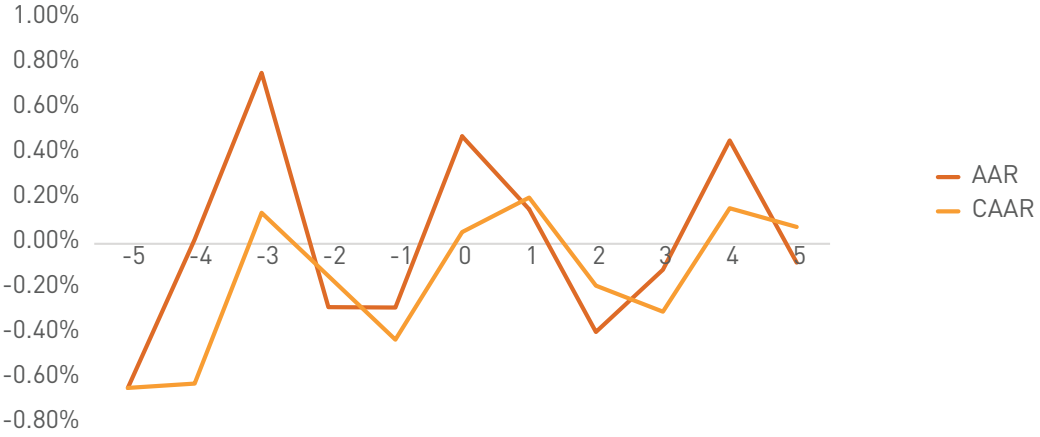


Figure 10. Cumulative Average Abnormal Returns and Average Abnormal Returns for Stable Years Group (decrease in dividend amount)

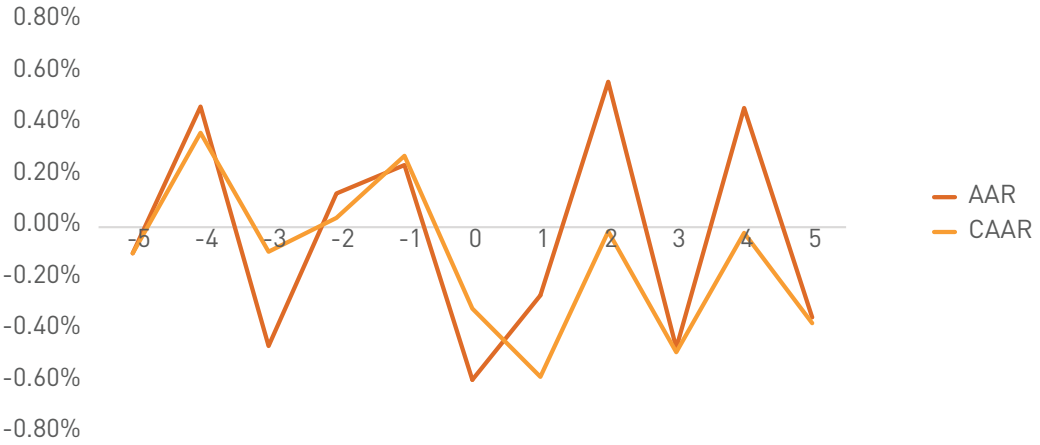
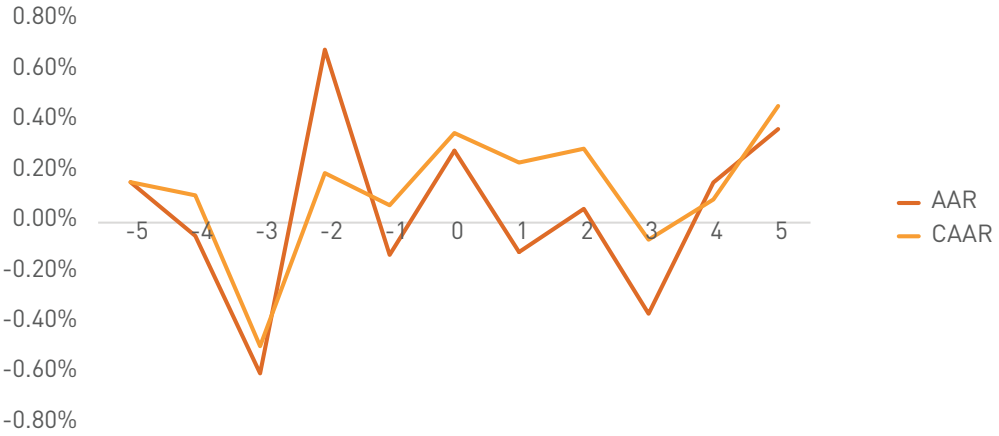


Figure 11. Cumulative Average Abnormal Returns and Average Abnormal Returns for Years of Crisis (decrease in dividend amount)



Testing of the hypotheses showed that at the 5% significance level the Average Abnormal Return is significantly different from 0 at day t = 2, at the 10% significance level at day t = 3, and at the 5% significance level at day t = 4. The Average Abnormal Return on day t = 2 is positive, but negative on day t = 3 and again positive on day t = 4, suggesting an unequivocal response to dividend declines announced during periods of stability or growth. The graph of the Cumulative Average Abnormal Return shows some jumps in values in the event window, with mostly negative values. At the same time, there is a gradual decrease in the Cumulative Average Abnormal Return on the day of the announcement, after which there is a fluctuation among values. The study has shown that announcements of reduced dividends convey negative information to the Russian market, resulting in a negative Cumulative Average

Abnormal Return on Russian company shares. This finding aligns with the signal theory of dividends. Below we will examine how the Russian market reacted to the news of reduced dividend payments during times of crisis, based on the analysis of the results.

In the group of crisis years the analysis did not reveal a single day when the announcement about the reduction of dividend payments significantly affected the reaction of the Russian market. In addition, in Figure 11 we can see that in the event window (–5; 5) around the proclamation of the negative dividend change there is a negative market reaction, but after day t = 3 there is an increase in CAAR. By the last day of the event window CAAR = 0.46%.

Russian market reaction to dividend changes: attitude to risk

In the regression analysis of all types of dividend changes (negative and positive), three types of regressions were built: Pooled OLS, Fixed Effects and Random Effects. The F-test, The Breusch and Pagan test, and The Hausman test were then conducted to choose between the three types of regressions listed. The test results showed that the Fixed effects model was the best. This approach allows controlling for unobserved company characteristics due to heterogeneity when it is constant over time.

Table 7 shows the results of the regression with fixed effects for all types of events, for positive events and for negative events separately. First, turning to the effect of changes in dividends, we can note that in all three cases there is a significant result (for all types of changes and for positive changes in dividends at the 10% level of significance, and for negative changes at the 5% level of significance). In general, the change in the amount of dividends by 1 ruble entails an increase in CAR by 0.020 percentage points. In a situation when actual dividends are higher than expected dividends, the dividend increase entails 0.052 change in CAR. However, when a smaller dividend change is considered, an increase in Dividend Change results in a 0.185-point decrease in CAR. Commenting on the control variables for the regression as a whole, we can note that only the logarithm of capitalization (firm size) (–0.018), company age (–0.048) and economic status of the country (0.016) were significant. That is, the increase in the first two indicators lead to a fall in CAR, and the last one – to an increase in CAR, which generally coincides with expectations. Thus, the regression results show that the negative news have a stronger and negative impact on the excess returns, while the positive changes also have an impact, but a positive and weaker one. It can be concluded that investors are more afraid of negative results than happy about positive news. Therefore, we can assume that investors in the Russian market are rather risk-averse. The results obtained with the help of the regression also serve to confirm the verification of Hypotheses 1 and 3 about the market reaction to an increase and decrease in the amount of dividends, respectively.

Table 7. Regression results for the whole sample and groups of positive and negative dividend changes

	For the whole sample	For positive changes in dividends	For negative changes in dividends
		CAR(11)	
Dividend Change	0.020* (0.008)	0.052* (0.025)	–0.185** (0 .054)
Logarithm of Capitalization	–0.018** (0.005)	–0.008 (.029)	–0.048 (0.040)
ROA	0.049 (0.149)	0.378* (0.131)	–0.468 (0.419)
Logarithm of Company's Age	–0.048* (0.017)	0.053* (0.028)	–0.023* (0.012)
Logarithm of Tobin's Q	–0.006 (0.021)	–0.007 (0.030)	0.032* (.0128)
D/E ratio	–0.001 (0.007)	–0.005 (.008)	–0.012 (0.025)
Economic State	0.016* (0.005)	0.027** (0.012)	0.049** (0.017)
R-squared	0.086	0.112	0.143

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Russian market reaction to dividend changes before and during the COVID-19 pandemic

Let us first consider the results that characterize the pre-pandemic period (Figure 12).

In the pre-pandemic period, the analysis did not reveal a single day when the announcement of a slight change in the amount of dividend payments significantly affected the reaction of the Russian market. In the meantime, the Cumulative Average Abnormal Return sharply increased on the day of the announcement of the increase in dividend payments and by the end of the event window maintained this level of growth (7.90%).

The following are the analysis results of neutral news in the pre-pandemic period.

Figure 12. Cumulative Average Abnormal Returns and Average Abnormal Returns for Pre-Pandemic period (increase in dividend amount)

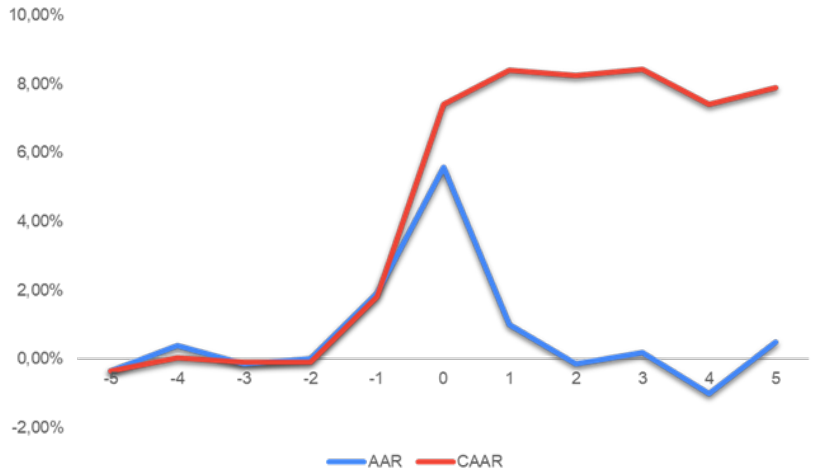
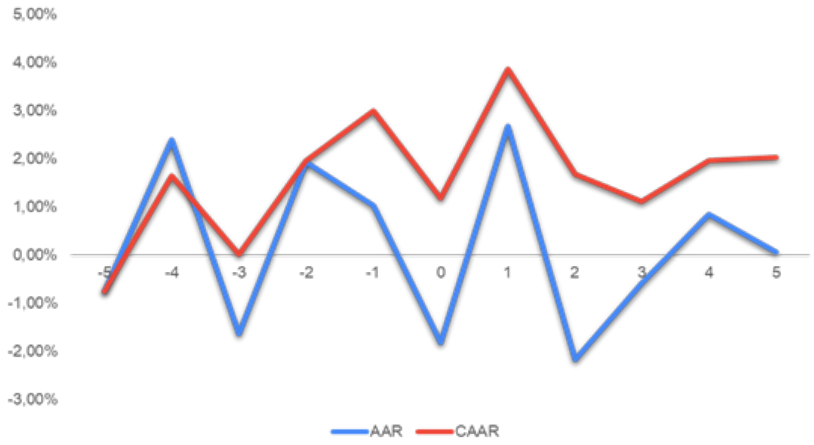


Figure 13. Cumulative Average Abnormal Returns and Average Abnormal Returns for Pre-Pandemic period (the amount of dividends is constant)



As can be seen from the above Figure 13, throughout the event window, the market perceives the announcement of an unchanged value of the dividend as a neutral signal as the graph of the Average Abnormal Return fluctuates around zero. There is no clear upward or downward trend in this time series. This implies that, on average, shares of Russian companies do not receive excess returns in response to the announcement.

We will discuss the outcomes resulting from the announcements of reduced dividend payouts made during the period of COVID-19 pandemic.

Testing of the hypotheses showed that at the 1% significance level the Average Abnormal Return is significantly different from zero on day t = 0, at the 1% significance level on day t = 2, and at the 5% significance level on day t = 3. On day t = 0, the value of the Average Abnormal Return is negative. However, it becomes positive on day 2 before turning negative again on day 3. The graph of the Cumulative Average Abnormal Return (Figure 14) shows a jump-like behavior of values in the event window.

The following are the results of the Russian market's reaction to good news during the pandemic period (Figure 15).

Figure 14. Cumulative Average Abnormal Returns and Average Abnormal Returns for Pre-Pandemic period (decrease in dividend amount)

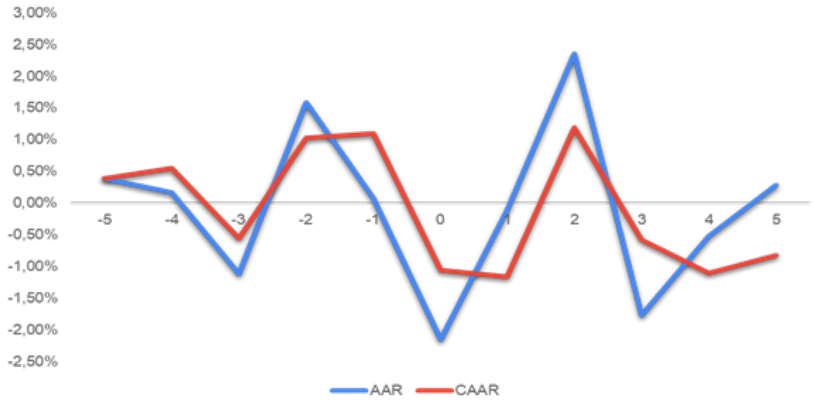


Figure 15. Cumulative Average Abnormal Returns and Average Abnormal Returns for Pandemic period (increase in dividend amount)

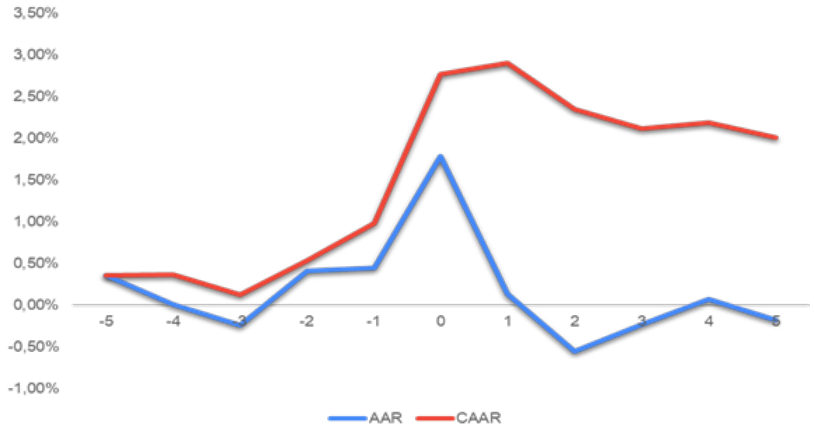
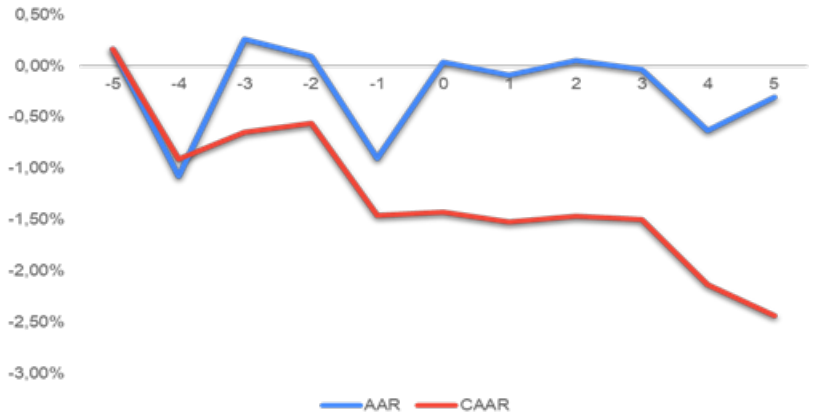


Figure 16. Cumulative Average Abnormal Returns and Average Abnormal Returns for Pandemic period (the number of dividends is constant)



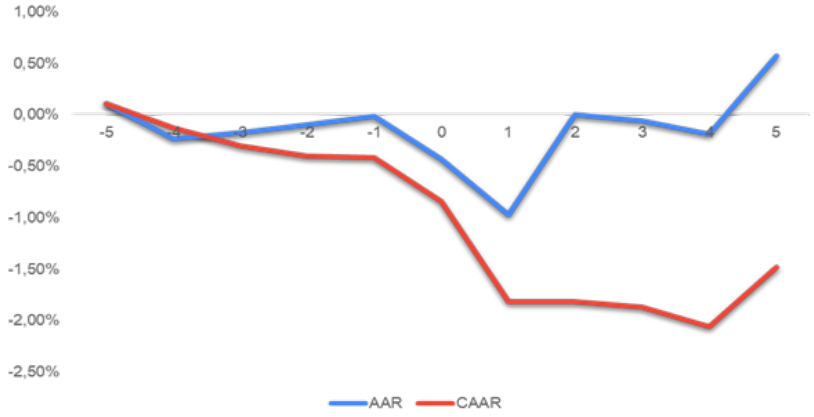
In the pandemic period the analysis did not reveal a single day when the announcement of a rise in the volume of dividends being paid out significantly affected the reaction of the Russian market. A sharp increase in CAAR on the day of the announcement of the increased dividend is apparent in the graph of the Cumulative Average Abnormal Return, by the end of the window of events CAAR = 2.01%.

Next, we examine the neutral news about the dividend announcement during the COVID-19 pandemic period.

The graph of the Average Abnormal Return in Figure 16 shows fluctuations around zero without a clear upward or downward trend within the event window. This suggests that the announcement of an unchanged dividend value does not result in an Average Abnormal Return in Russian company shares and is instead seen as a neutral signal by the market. Additionally, there are no significant values of the Average Abnormal Return. Shareholders whose dividends remain unchanged typically only receive normal yield during the event window.

Below we consider the results of the Russian market reaction to the announcements on reduction in dividend payments during the pandemic of COVID-19.

Figure 17. Cumulative Average Abnormal Returns and Average Abnormal Returns for Pandemic period (decrease in dividend amount)



Testing of hypotheses showed that at the 5% significance level the Average Abnormal Return is significantly different from zero on day t = 1. Moreover, the value of the Average Abnormal Return on day 1 is negative. The announcement of a reduced dividend value negatively affects stock returns soon enough. The graph of the Cumulative Average Abnormal Return (Figure 17) clearly shows a decreasing trend in the event window. In the meantime, the study's findings show that the announcement of reduced dividends has a negative impact on the Russian market, resulting in a decrease in the Cumulative Average Abnormal Return. The value further drops to –1.48%. This supports the signal theory of dividends and suggests that such announcements convey negative information to investors, leading to a negative excess return on shares of Russian companies.

Discussions and Limitations

Summarizing the results of the previous section, some conclusions can be drawn. The results of the analysis of the group of positive variations in dividend payouts showed that in 2008–2021, there was an immediate positive reaction on the market to the company's increase in dividends compared to what was expected. This result corresponds to the signal theory, which states that information about an increase in dividends is a signal from the company's managers to the market that the company expects an increase in cash flows and financial results.

The main conclusion that can be drawn based on the analysis of two groups of years (stable years or growth and crisis periods) is the following: the Russian market reacts more strongly to news regarding the reduction of dividend payments during periods of stability and growth, rather than during periods of crisis.

An increase in dividends leads to an increase in the share price. This conclusion corresponds to the works of Sh. Mahmood et al. [21], Sh. Taneem and A. Yuce [10]. However, the results cannot be correlated with most of the results of studies conducted on Russian companies, because they have the opposite results [5; 6; 7; 28]. This may be due to the fact that this paper considers a different time period from earlier works and the degree and direction of market reaction may have changed.

The results of the analysis of the group of "bad" events show that the announcements of the Russian companies about the reduced amount of dividends entail a negative reaction of the market, that is, they lead to a negative abnormal return on company shares and it confirms the signal theory. The results obtained correspond with the conclusions obtained in the works of I. Berezinets et al. [28], Sh. Mahmood et al. [21]. For part of the work on the Russian market, the opposite result was obtained [6; 7]. However, this difference can be explained by the fact that the works are mainly considered either only the years of recovery, or only the crisis years. The conclusions confirm the Hypothesis 1 posed in the study.

As for the group of neutral dividends changes, it is not easy to draw an unambiguous conclusion. On the one hand, the CAAR indicator is significant at the 10% level by the end of the event window, and it is positive. On the other hand, abnormal return is not significant on the day of the event and the first two days before and after it. Based on the second reason, it can be concluded that, on average, the announcement of an unchanged amount of dividends does not entail the occurrence of abnormal returns on shares of Russian companies and is not perceived by the market as a whole as a negative or positive signal. Thus, hypothesis 2 about the absence of a market reaction with a constant amount of dividends was confirmed. This result corresponds to the theory of signals, according to which the market should not react to such events, and to numerous works on this topic [21; 29]

For share prices of companies in the electric power and oil and gas industries, there is a trend – when companies announce the amount of dividends to be paid, in general, this amount does not differ significantly from the expected yield of their shares. Companies in these industries are more stable and are in the maturity stage. The transport industry generally reacts more strongly than others to the event under consideration, the reaction does not correspond to the signalling theory with dividend reduction. During the analysed period there is a clear distinction between firms from different sectors of the economy, which confirms hypothesis 3.

The analysis showed that the Russian market reacts stronger to bad news about dividend payments in periods of stability and growth than in periods of crisis. But the reaction is ambiguous, and, there probably is an element of speculation in the market during the announcement of dividend payments. The results obtained correspond with the conclusions obtained in the works of I. Berezinets et al. [28], Sh. Mahmood et al. [21].

During years of crisis, holders of shares whose dividend value remained unchanged receive, on average, only the normal yield in the event window. The signal theory of dividends suggests that the market does not receive any significant information that would result in excess returns on a company's shares when the company announces that the dividend value will remain unchanged. Therefore, the behavior of the yield aligns with this theory. This result corresponds to the theory of signals, according to which the market should not react to such events, and many works on this topic [29].

The Russian market reacts more strongly to bad news about dividend payments in periods of stability and growth, but not in periods of crisis. Perhaps investors are prepared for a worsening situation in periods of crisis, which entails a relatively weak reaction to a reduction in dividend payments. Similar results, where the market reacts more strongly to bad news regarding dividend payments in periods of stability and growth rather than in periods of crisis, are also found in M. Mazur et al. [27]; J. Cho et al. [11]

The impact of higher and lower dividend payments was more pronounced during the COVID-19 pandemic than during the pre-pandemic period. This is more distinct in relation to bad news. So, the part of Hypothesis 4 concerning pandemic and pre-pandemic periods was confirmed.

Neither at the time of COVID-19 pandemic, nor in the pre-COVID-19 times, did the market react significantly to announcements of higher dividend payments. Nor was there an abnormal reaction to announcements of unchanged dividends. This result corresponds to the work of H.R. Turaev [29], M. Mazur et al. [27]; H. Ali [24]

This study could be useful to investors trading in the Russian market. From the division of years into periods, it is clear that at least once every three years there are events that consistently lead to crises in the country. Investors would benefit from studying the market reaction to changes in stock prices that follow the announcement of changes in dividend values, broken down by period, industry, etc..

Using regression analysis, we tested the hypothesis that the negative effect of lower dividend payment announcements on the share price is stronger than the positive effect of higher dividend payment announcements. This hypothesis was confirmed. The coefficient on announcements of lower dividend payments is negative. The coefficient on dividend payout announcements is positive, but it has a weaker effect on stock prices than the negative coefficient on dividend payout decrease announcements. Thus, investors are more reactive to negative events, i.e., dividend payout declines, than to positive events (dividend payout increases). That is, they tend to avoid risk rather than seek it out. Hypothesis 5 was confirmed.

Table 8. Summing up the results of hypothesis testing

Hypothesis	Conclusion
Hypothesis 1	Hypothesis is not rejected
Hypothesis 2	Hypothesis is not rejected
Hypothesis 3	Hypothesis is not rejected
Hypothesis 4	The hypothesis about the years of crisis and stability is rejected, the hypothesis about the period before and during the COVID-19 pandemic is not rejected
Hypothesis 5	Hypothesis is not rejected

Turning to the limitations, it can be noted that, first, the paper considers a limited number of variables and limited number of years. Secondly, the work is carried out only for the Russian market. In addition, the paper uses a naive approach to determining the expected dividends, that is, the dividends of the previous year are used, rather than the forecasts of analysts closer to the announcement date. However, in the work of I. Berezinets et al. [28], the results show that there are no significant differences between the approaches, that is, both are acceptable.

Companies making decisions on the allocation of capital should consider the results obtained in the work and adjust decisions depending on the state of the economy. This will help them maximize the wealth of shareholders and, accordingly, get a greater value of the company, because the announcement of changes in the amount of dividends significantly affects the profitability of company shares.

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