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Study of the Reaction of Stock Markets to the Cancel Culture Phenomenon in Relation to Russia

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Abstract

Suspension of business in Russia by most foreign corporations after the events of 24 February 2022 led to the fact that the social phenomenon of "cancel culture" is now also considered within the framework of global economy and finance. In recent years, the IT industry is appraised as one of the fastest-growing, and the study of its reaction to global events is highly relevant. Using the Event Study method, this study proves that there is no significant impact of the declaration of the Russia-Ukraine conflict on US stock market dynamics of IT companies with branches in Russia. The analysis of individual cases from the sample of companies shows that the companies' decision to suspend or continue business in Russia depended only on the presence of a significant share of revenues in Russia, the degree of reputational and sanctions risks, and the specifics of corporate ESG policies. The model is limited by the sample and period of analysis. In order to verify model reliability, we applied the t-test that determined the significance of the results. The research is of practical relevance because internationally operating companies may use its data to evaluate risks and make strategic decisions.

Keywords: cancel culture phenomenon, event study, case study, cumulative abnormal return, reputational risks

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Introduction

The declaration of the special military operation (SMO) on 24 February was one of the milestone global events of 2022. The ongoing international conflict entailed wide-ranging consequences in geopolitics, military sphere and economics. Economic sanctions were imposed on the Russian Federation, including restrictions on import and export of goods and services. In this context, many international companies operating in the Russian market decided to sell their Russian branches or cut investments in the Russian economy. According to the Yale CELI List of Companies, as of today over 1000 companies have publicly announced they are voluntarily curtailing operations in Russia in compliance with international sanctions and for other reasons [1]. Nevertheless, some companies opted to continue their business in our country.

In view of the current events the term "cancel culture" began to gain traction in relation to Russia. It has been studied as a social phenomenon before, and only since 2022 it has been considered in terms of the global economy. In spite of multiple studies from this angle, this topic is still significantly understudied. In particular, in the majority of relevant papers the main markets affected by sanctions are manufacturing and energy. The novelty of the present paper consists in the analysis of the influence of the global event of the SMO declaration on the IT industry, which is considered one of the most rapid-growing and insufficiently explored ones. Besides, as long as there is a lack of corresponding research, we have analyzed the relationship between global events and companies' financial and non-financial factors that may influence their decision to withdraw from the domestic market or continue their business in Russia.

The purpose of the paper is to study the reaction of the American stock market to the cancel culture phenomenon in relation to Russia using the example of the IT industry.

In order to achieve the purpose in hand, we have to accomplish the following objectives:

1) study the existing hypotheses about the market reaction to global events (SMO, sanctions, etc.), the cancel culture phenomenon, the influence of financial and non-financial factors on a company's value generation;
2) develop a methodology to study the influence of the declaration of the SMO on international companies' behavior and justify the choice of the IT industry for the research;
3) study the reaction of the stock market of American IT companies to the declaration of the SMO on 24 February 2022 applying event study or cumulative abnormal return (CAR) analysis;
4) subsequently perform a case study of representative IT companies from the studied sample for financial and non-financial factors;
5) analyze the influence of the selected financial and non-financial factors on the companies' decision to suspend or continue their business in Russia.

The research object is the price dynamics of public American IT companies' stock.

The research subject is the factors that influence the IT companies' decision concerning continuation or suspension of their business in the Russian market.

The research methodology implies event study, which will allow to determine the stock market reaction to the event of 24 February 2022 using IT companies as an example. Besides, during case analysis we will perform a review of companies from the viewpoint of the influence of financial and non-financial factors on the decisions to continue or wind down their IT business in the Russian Federation.

Review of Current Economic Research of the Cancel Culture Phenomenon

Event Study

Event study is considered to be the most effective scientific tool for study of the impact of specific events on the dynamics of the price of public companies' shares. However, presently there is a lack of relevant studies that apply this method because in 2020–2023 there were only two key events that triggered a strong reaction of the global market: the COVID-19 pandemic at the end of 2019 – beginning of 2020 and the declaration of the special military operation on 24 February 2022 [2].

For the event study we chose the dates of the official announcement stating COVID-19 was a global pandemic, and the declaration of successful vaccine testing in the USA as the event dates for calculation of expected returns. We analyzed 59 aviation companies from the sample (over 30% are from the USA and China) with high liquidity in stock markets. As a result, we revealed a negative reaction of stock prices to the declaration of the pandemic and a positive impact on the stock market of the announcement of COVID-19 vaccine efficacy in the USA. However, due to limitations of the sample of companies these conclusions cannot be applied to the industries other than the aviation industry.

Some research gaps were filled in by later papers related to analysis of the event that is similar in terms of its global impact – the declaration of the SMO in Ukraine on 24 February 2022. This event launched a strong instantaneous response of stock markets in various countries. The majority of studies established that the main markets which have "suffered" were the manufacturing industry and energy, as well as financial institutions.

Thus, some papers [3; 4] study the influence of the Russia-Ukraine conflict on energy markets. Analysis of *CAR* before and after the beginning of the SMO shows a strong positive impact of this event, especially on the energy market. However, on a global scale the event had a negative impact on the economy of many countries engaged with Russia to a greater or lesser degree. For instance, I. Yousaf et al. [5] studied the impact of the beginning of the Russia-Ukraine

conflict on the economic situation in the Group of Twenty (G20) and other individual financial markets in the first days of the SMO. Pooled analysis showed a significant negative impact of the Russia-Ukraine conflict on these countries' stock markets on the day of the event on 24 February 2022 and after the event. Country analysis found out that stock markets of Hungary, Russia, Poland and Slovakia were the first to respond to the expectation of military activities in Ukraine, showing negative return in the days immediately preceding the declaration, while other countries' markets deteriorated in the days after 24 February. However, up to the present time the particular factors which could cause a positive or negative market reaction have not been revealed.

Influence of the Cancel Culture Phenomenon on Corporate Decisions of Foreign Companies

Social research defines cancel culture as behavior in a society or group, especially in social networks, when it becomes conventional to reject completely or withdraw support for someone in response to unacceptable actions or statements. After the declaration of the SMO, the cancel culture phenomenon manifested itself on a global scale. Since the beginning of the SMO, over 1200 companies publicly declared the end of their operations in the Russian market, thus, supporting the cancel culture trend towards Russia [1]. Consequently, in this paper we have considered scientific research of the cancel culture phenomenon within an economic context.

Thus, O. Tosun and A. Eshraghi in their paper studied the reaction of the financial market to the announcement that companies had decided to stay in two weeks after the SMO had begun [6]. As a result, they found out that foreign companies that continued operations in Russia in spite of sanctions and public disapproval undermined their market performance. The portfolio of the companies that stayed is inferior to the portfolio of the companies that left. Besides, investors impose significant market penalties on the remaining companies.

In addition, a lot of American corporations limited their business operations in Russia after the SMO had begun. The exit announcement is preceded by a negative trend of accumulated returns which changes its vector the next day after the announcement [7]. These results are in line with the idea that companies prefer to limit their presence in Russia in response to operational and reputational consequences, while stock return stops decreasing immediately after the exit announcement.

In general, there is currently a lack of papers which that offer a breakdown by industry, more up-to-date information, or an analysis of the consequences for the global economy. In addition, these papers do not assess the influence of financial and non-financial factors on companies' decision to withdraw from the Russian market, as well as on the corporate market value.

Influence of Non-Financial Factors on Company Value

The study of the impact of non-financial factors, in particular, corporate governance factors on creation of company value has become a separate topic. Some authors revealed a positive relation between corporate governance and financial performance both in India and Persian Gulf countries [8]. In particular, it was demonstrated that efficient corporate governance practice is related to higher return on assets and return on equity in these regions. However, we should mention a lack of studies dedicated to the impact of reputational and sanctions risks as well as other non-financial factors on strategic decisions of the company.

Table 1. Classification of hypotheses on the basis of literature analysis

Topic	Research gap	Hypotheses
Event study	Insufficiency of studies dedicated to the IT sector	H1: Declaration of the SMO produced a significant impact on the American stock market of IT companies
Cancel culture	No analysis of the impact of financial factors on companies' decision of exiting the market and corresponding influence on the company's market value	H2: American IT companies are governed by financial aspects when making corporate decisions on continuing business in Russia
Impact of non-financial factors on the company value	Insufficiency of studies of the impact of reputational and sanctions risks as well as other non-financial factors on corporate strategic decisions	H3: Such non-financial factors as reputational and sanctions risks have a significant impact on decision-making concerning continuing operations or withdrawal from Russia

Source: compiled by the authors.

The factor of corporate decision-making guided by behavioural finance is one of such non-financial factors. Some studies produce evidence that public companies in stock markets often act irrationally and in conflict with market forecasts, which ultimately yields higher returns [9]. These anomalies are especially frequent at times of economic uncertainty and crises conditions, when corporate management is more prone to risk which, as is commonly known, increases return on investment. Thus, the theoretical basis of behavioural finance contradicts the well-known market

efficiency hypothesis, which presumes that fluctuations in the securities market are caused only by new events related to companies and investors' response to them [10; 11].

On the basis of analysis of academic literature and revealed research gaps in regard to the three chosen topics we defined the main hypotheses of the present research (Table 1).

We decided to apply the following methodology to study the postulated hypotheses:

H1: event study using the sample of American IT companies from the Yale CELI List of Companies;

H2: case study, i.e., building predictive financial models of the selected companies to define the impact of revenue share in Russia on the company value;

H3: case study, i.e. a qualitative evaluation of the impact of individual factors of corporate governance and behavioral finance on decision-making concerning curtailing or continuing business in Russia.

Study of the Stock Market Reaction to the Declaration of the SMO

Description of the Sample of Companies

Event study aimed to verify the first hypothesis (H1) in this paper was based on the highly publicised research as it played a significant role in the study of international companies' exodus from the Russian market. A team of experts from the Yale School of Management experienced in financial analysis, economics, accounting, strategy, management, geopolitics and Eurasian relations created a unique dataset that comprises a list of international companies that have made various decisions concerning their operations in Russia [1]. The list was originally published on 28 February 2022 when just a few dozens of companies declared their exit from the Russian market. Since then, it has been continuously updated.

Initially, the classification of companies according to their decision consisted of two groups: "withdraw" or "remain". However, at present there are five categories of companies assessed on the basis of grades from *A* to *F* depending on the completeness of their exit from the Russian market (Table 2).

Table 2. Categories of companies on the Yale CELI List

Company category	Description
A	Withdrawal
B	Suspension (curtailing the majority of operations, leaving a loophole for a comeback)
C	Scaling back
D	Buying time (postponing new investments/developments)
F	Digging in

Source: Yale CELI List of Companies.

At the date of selecting the companies for analysis (December 2022), the Yale CELI List consisted of over 1300 foreign companies from various industries (manufacture, consumer goods, energy, marketing etc.) and countries. US companies had the biggest share among them. The category revealed that the majority of foreign companies retained the opportunity to return to Russia (*B* category). 96 of these companies pertained to the IT sector, and the share of American companies among them was 56%.

The second place is occupied by IT companies that have completely withdrawn from Russia (45 firms in category *A*), with the majority incorporated in the USA (53%). Such companies (Cisco, Canva, Accenture, Slack etc.) run the highest reputational risks if they continue their business in Russia and may be deprived of their business assets through nationalization. Companies assigned the *C* and *D* categories (18 and 11, respectively), for example, Asus, Paypal, Amadeus IT Group, Adobe, Lenovo, etc., are exposed to other risks, such as loss of profitability, supply chain disruption, end of manufacturing and sales of some products. 12 IT companies from the *F* category of the list: AnyDesk Software, Honor, Cloudflare, Check Point Software Technologies Ltd. etc. disobeyed the request to exit or curtail operations.

Thus, US IT companies are forced to pull out of the Russian market, first of all, because they have to sustain their brand image and maintain their reputation. However, when making such a decision, companies often leave open the possibility of return which is indicative of an indirect influence of certain external factors.

In the present paper the sample consists of 60 companies that have exited the market. They are divided into categories A and B with 25 and 35 companies, respectively; and 22 companies that have stayed in the Russian market and pertain to categories *C*, *D* and *F*. It is important to note that in order to expand the sample of the remaining companies (*C*, *D*, and *F* categories) we decided to consider the industries related to the IT sector, such as telecommunications and IT-oriented industrial companies (as a rule, they pertain to the manufacturing industry).

In the present research we have used the corporations directly related to development of advanced IT solutions for oil and gas, aviation and other similar sectors: Schlumberger Limited, Aspen Technology, L3Harris Technologies, General Electric. Telecommunications are the second additional category. This industry is represented by Iridium Communications Inc. (telecommunications equipment), Match Group Inc. (dating application), Seagate Technology Holdings pic and Western Digital Corporation (development and manufacture of data storage solutions), E2open Parent Holdings Inc. (provider of cloud solutions for network supply chains). All of the above companies are engaged directly or indirectly in information technology.

After we have selected the sample of IT companies, an event study methodology was created.

Event Study Methodology

Event study is a way to assess the impact of a certain corporate or macroeconomic event on the stock price [12]. Multiple studies confirm the efficiency of this method.

However, the following basic prerequisites should be observed to perform it:

1) capital market efficiency, i.e., any news concerning the events should get to the market quickly and in their entirety, and have an effect on companies' stock prices [11];
2) unpredictability of the studied event from the market participants' viewpoint;
3) isolation from other effects, i.e., the presumption that within the considered time interval the event is the only one that could influence the stock price.

Event study is carried out in several stages. In the first instance, events are selected; in our case it is a single event: the declaration of the SMO on 24 February 2022. The research object is the daily dynamics of stocks in the sample compiled of American IT companies that have remained in the Russian market or pulled out of it.

Choosing the estimation period length and the event window is an important factor that influences the results of event study. We have chosen the optimal estimation period interval of 120 days, although there is no consensus among researchers concerning the length of this period.

The researchers are also divided on the issue of the event window length; the following versions are offered in the papers: (–1; +1), (–5; +5), (–10; +10), (–20; +20) etc. However, the following windows of (–10; +10), (–5; +5), (–3; +3) are the most frequently used ones. They guarantee trustworthy results.

At the second stage, real return within the event window is calculated by the natural logarithm formula:

$$y_t = ln\frac{P_t}{P_{t-1}},$$

where y_t – real stock return; P_t – closing share price on day t; P_{t-1} – closing share price on the day before t–1.

We also calculate normal stock return on the basis of the window preceding the event window which does not include the considered event.

In order to calculate normal (expected) stock return, we applied three statistical methods found in the literature sources that we have studied earlier:

Mean return method, which implies calculation of return as the arithmetic mean for the previous period (120 days in our case), where the same return is used for all event windows:

$$\widehat{y_t} = \frac{1}{120}\sum_{t=-21}^{t=-141} y_t,$$

where $\hat{y}_t$ – expected company stock return on day t; $\sum y_t$ – sum of real stock returns on day t.

Market model that defines stock return on the basis of market portfolio sensitivity, beta is used as the sensitivity factor. The advantage of this method over the previous one lies in the fact that a change of normal return is implied within the event window:

$$\widehat{y_t} = \hat{a} + \hat{\beta} \cdot x_t,$$

where $\hat{y}_t$ – expected company stock return on day t; $\hat{a}$ – constant; $\hat{\beta}$ – factor of sensitivity of company shares to index profitability; x_t – index profitability.

Capital asset pricing model (*CAPM*). It is a one-factor model as well as the market model. It is applied to evaluate shares or assets by means of analysis of the risk and expected return ratio. *CAPM* is based on the idea that investors gain additional expected return (risk premium) if they take additional risk. Just as in the market method, beta is used as the sensitivity factor. It was found for each company in publicly available sources. The equation is as follows:

$$\widehat{y_t} = \underline{r_f} + \beta \cdot (r_m - \underline{r_f}),$$

where $\hat{y}_t$ – expected company stock return on day t; $\underline{r_f}$ – risk-free rate of return (return of annual American government bonds); β – factor of the asset's sensitivity to change of market return; $(r_m - \underline{r_f})$ – risk premium.

At the third stage, according to each method, we calculated abnormal return (*AR*) as the difference between normal and real return:

$$AR_t = y_t - \widehat{y_t},$$

where AR_t – abnormal company stock return on day t; y_t – real return of a share; $\hat{y}_t$ – expected stock return of the company on day t.

The resultant stage of analysis is the calculation of *CAR* and test of statistical significance of the obtained indicators. *CAR* is calculated as the sum of abnormal returns within the event window period:

$$CAR = \sum_{t=T_1}^{t=T_2} AR_t,$$

where *CAR* – cumulative abnormal company share return; AR_t – abnormal return of company's stock price on day t.

T-test is applied to verify the zero hypothesis: whether mean abnormal return equals zero:

$$T - value = \frac{CAR}{\sqrt{VAR(\sum AR)\bullet n}},$$

where *CAR* – cumulative abnormal return of company share; $\acute{o}^2$ (*VAR*) – variance of the sum of abnormal returns of company stock price on day t; n – window length.

Consequently, at a certain significance level of 1.96 the hypothesis is confirmed or rejected, i.e. we may assert that the event produces or does not produce influence on stock return within the considered window.

Analysis of the Event Study Results

After uploading the necessary sample data, we performed the primary analysis of the shares' dynamics, in particular, we compared the mean closing prices for the entire researched period, periods before and after the event. Analysis revealed that after the event the price of 49 companies that have withdrawn from the Russian market (*A* and *B* categories) came down. As for the rest of the companies (*C*, *F*, *D* categories) in percentage terms, similar to the previously mentioned categories, indicators of 82% of companies decreased after the event (18 out of 22 companies).

Nevertheless, stock price dynamics yield no significant results, therefore this study is not meaningful because, first, it does not take into consideration any other factors, second, it is too primitive. For this reason, at the next stage we conducted event study. Its results are interpreted below.

In the first instance, we may conclude that there is no single trend for all companies: the impact on each one is individual. *CAR* shows the cumulative effect of the event which has taken place within the event window. As a result of the analysis, we determined that *CAR* for the whole sample of companies is distinct from zero, hence, the event has influenced the stock price.

In our case, depending on the event window span and the method of normal return calculation, we have obtained different results not just for the whole sample, but for the same company as well. *CAR* also changes conspicuously depending on the chosen size of the event window: the bigger it is, the higher the probability of influence of other external and internal factors on stock returns.

However, it is important to establish not just the existing influence, but its significance as well. To that end we carried out a *t*-test: if the obtained *t-value* exceeds in modulus a threshold of 1.96, the influence is significant, if the value is lower – it is insignificant. On the basis of analysis of the test results, we may assert that only 37% of the entire sample of the companies that have withdrawn from Russia (22 companies out of 60) showed significant values in the *t*-test. Among the remaining companies, only 27% showed significant results (6 companies out of 22).

One of the reasons for such results may be the specific nature of the considered event, which led to the structural crisis. Consequently, a small number of significant results of the event study in this case may also be indicative of the specific character of the IT industry, which has not been affected as much as many others (for example, banking).

Besides, the majority of significant results are based on returns calculated by means of the market method with the event window (–3; +3) and using *CAPM* with the event window of (–10; +10). The market model differs from *CAPM* by the additional limitations imposed by *CAPM* on the model: $\hat{\alpha}$ (constant, the point of intersection of the optimal regression line drawn through stock returns and NASDAQ return, which is set equal to the risk-free rate. Variance of a random value will exceed that of the market model, hence, the *t*-test performed will theoretically yield "weaker" results than the market model. At the same time, in the majority of academic research studies the market model, which implies no such limitations, and *CAPM* most often yield almost the same final result. In our case, the market model is less effective than *CAPM*, therefore we choose *CAPM* for further analysis of the event.

In order to determine the nature of the event impact on stock dynamics, the *CAR* of the sample of companies with a significant influence according to the *t*-test is compared to zero: a positive *CAR* suggests a positive influence of the event on the market, while a negative value implies a negative impact.

We see that according to *CAR,* 13% of the companies that have left demonstrate a negative impact of the event on the market, while 17% of the companies that have pulled out of the market show a positive influence of the event.

Taking into consideration the small number of tested companies that have left Russia and showed a negative or positive impact of the event, we cannot assert with confidence that the event really produces the indicated effect on companies included in categories *A* and *B*. Consequently, the first research hypothesis (H1) is rejected for the sample of the companies that have withdrawn from the market.

The analysis results indicate that according to *CAR,* 9% of the remaining companies show a negative influence of the event on the market. At the same time, 17% of the remaining companies indicate a positive impact of the event.

We also cannot state for sure that there is a certain impact of the event on companies from categories *C*, *D* and *F*. Consequently, the first research hypothesis (H1) is rejected for the sample of remaining companies.

The performed event study suggests the following conclusions:

CAR distinct from zero is indicative of a general accumulated effect of the event within all event windows;

1) most often significant results of the *t*-test were obtained in the case of *CAPM* use, but the share of significant results that correspond to the hypothesis is very small;
2) if we choose another event date, for example, announcement of sanctions in the IT industry on 08.05.2022, we will not get a larger share of significant results because stock dynamics in this period remained within the same limits as in the study as at 24.02.2022;
3) no crash in the American market of IT companies' stocks as a result of the SMO declaration is observed.

Based on the event study results, we reject hypothesis H1 of the present research. Thus, the event of 24 February 2022 produced no significant influence on the American stock market of IT companies. Factors other than market shocks were behind the companies' decision to curtail or continue their business in Russia. These factors are analyzed in the next section.

Analysis of Influence of Financial and Non-Financial Factors on the Decision of Foreign Companies to Close down or Continue their Business in Russia

Case Study Methodology

On the basis of the event study results, at the present stage of the research we decided to consider financial and non-financial factors of companies by means of case study. The companies for this study are selected premised on the following criteria:

1) focus on the results of event study, in particular, significance of the *t*-test results, however, the company should pertain to one of the categories (departed or remaining companies), as well as differ in terms of the nature of the event impact (positive or negative);
2) pertain to the same IT industry, but differ in the lines of business, so that we could assess the reasons behind the decisions of the companies from different sub-industries;
3) information transparency, high openness of companies will allow for efficient data analysis.

The group of companies that have pulled out of Russia consists of the largest IT companies from a variety of sub-industries: Visa – the largest financial corporation in the bank card industry, Nvidia – a technology company, graphic processor and system-on-a-chip designer. The group of remaining companies comprises: Activision Blizzard – one of the largest computer gaming and entertainment corporations, Schlumberger – global supplier of technology, information solutions and integrated project management in the oil and gas industry.

For the case study we chose the factors influencing corporate decisions that are most frequently used in academic literature and mentioned in news and reports as reasons substantiating company decisions.

In the first instance, we considered the financial aspects of the selected sample: one of the most important indicators is the share of revenue earned in Russia. So, the smaller the share of Russia in the consolidated revenue, the easier it is for a company to exit the market.

Another financial factor, the significant amount of company's assets in the Russian Federation, also plays a large part. In this case, the risk is posed by the threat of their loss as a result of probable nationalization. Therefore, companies make a decision to pull out of the Russian market or sell their assets to another organization, which is bound to maintain operations for a year.

In order to verify the significance of the RF revenue share factor, we developed two financial models for each company: the first one mirrors the current situation (i.e., in 2022 the basic model for the companies that have left was built exclusive of the Russian revenue share, and for the remaining companies – inclusive of the RF revenue), while the second model presents a hypothetical reverse situation. In order to evaluate the factor's influence, we accepted a benchmark of the 10% difference in the appraisal value of company stocks between the basic and hypothetical scenarios of the models.

Qualitative evaluation was applied to consider the following non-financial factors: corporate brand; influence of risks, institutional investors, terms of ESG policies (environmental, social and corporate governance); additionally, we verified the behavioural finance theory as a decision-making factor.

From the viewpoint of the impact of possible risks, we considered the sanctions and reputational risks.

With regard to stakeholders, we studied the company's largest institutional investors and their relations with political groups (government). The larger the number of politically charged stakeholders, the stronger the direct influence on the board of directors and the decision to exit Russia.

As the last criterion, we verified the behavioural finance theory according to which the initial expectations of a company related to further operations with regard to the event are compared to the actual decision of the company over time. Consequently, if immediately after the event there are forecasts with positive expectations in corporate reports or press releases, but several months later new information is published indicating the company's withdrawal from the market, the behavioral finance factor in the theoretical framework is confirmed (an irrational decision inconsistent with the expectations has been made). A reverse situation of confirming the hypothesis of the behavioral finance impact: immediately after the event the company made negative forecasts, but finally opted to stay in the market. At the same time, the agent's rational behavior, when negative or positive expectations are in line with actual negative and positive decisions, tacitly rejects the hypothesis of the influence of the behavioral finance factor on the decision.

In conclusion of the quantitative and qualitative analysis we revealed the factors that most significantly influence corporate decisions.

Results of Case Study

The first considered company from the category of the firms that have exited the market with the negative impact of the event is Visa. The company was incorporated in 1958 and has become a dominant player in the global payment industry. As at 2021, Visa operated in 200 countries and processed billions of transactions annually.

The basic prerequisites to develop forecast financial models for Visa to verify the significance of the revenue share factor are:

- assumption of the 5% annual revenue growth rate since 2024;
- the current assets' and short-term liabilities' growth rate corresponds to the revenue growth rate;

- use of discounting parameters from publicly available sources [13–15].

In order to develop the second model for a hypothetical situation of continuing business as usual in Russia for Visa, we added the RF revenue share (4%) to the reporting value of revenue for 2022; besides, the operating expenditures for the same year were reduced due to the absence of deconsolidation expenses ($60 mln.) [16]. After comparing the results of evaluation of the two models for Visa, we obtained the difference of 2% in the stock prices in these cases (below the benchmark), i.e., we may assert that withdrawal from Russia had no impact on the company's stock price.

One of the key factors that define the Visa brand awareness is its universal presence. Over the years the company has been investing significant amounts in marketing and advertising and has also gained a reputation of an innovative corporation. Staying ahead of the times and offering advanced payment solutions, Visa managed to retain its position as the leading brand in payment technologies.

In its income statement for 2022 the company disclosed 20 risk factors and indicated that the largest number of risks was present in the category of Legal and Regulatory risks (35%) [16]. Given that Visa is engaged in payment technologies, it is subject to a wide range of laws and regulations, including data protection legislation, financial norms and antimonopoly law. In order to reduce regulatory risks, Visa applies a set of measures, including compliance assurance programs, lobbying and interaction with regulatory authorities.

Reputational risks arise due to the perception of Visa by stakeholders including customers, sellers, investors and regulatory authorities. Any public actions which harm the Visa brand image may significantly influence its reputation and public confidence in the company. To manage reputational risks, Visa employed a set of measures, including reputation management programs, crisis communication plans and transparency initiatives.

Speaking of the influence exerted by stakeholders, it may be noted that the share of independent institutional investors in Visa is rather large (98.68%) and includes such funds as The Vanguard Group, BlackRock, Inc., FMR etc.

The factor of the company's ESG policy impact on decision-making is also significant. Visa launched programs to issue cards for Ukrainian users, Visa Foundation provided a grant of $2 million to the U.S. Fund for UNICEF for humanitarian assistance and helps refugees to obtain employment, actively broadcasting its position in integrated reporting.

The behavioral finance theory is rejected in this case because the company declared its withdrawal in March 2022, and then wound down its business completely, cutting off its services for Russian customers abroad. Visa exited the Russian market at its own business initiative, but under the threat of secondary sanctions. Thus, the company acted rationally: the expectations after the event were negative, so it announced its withdrawal from the market.

We also analyzed NVIDIA, which is among the companies that have pulled out of Russia, and considered the principal financial aspects. The first aspect is assets in the territory of the Russian Federation. Since 2003 the company had a business unit in the Russian Federation, but in October 2022 it wound down all operations and closed down the Russian office. The second important financial indicator is revenue. The company's direct sales in the Russian Federation were insignificant. In the 2022 financial year it amounted to approximately 2% of total sales and 4% of sales of games [17]. Then we performed quantitative analysis.

For NVIDIA we applied the same approach as for Visa, developing two financial models inclusive of and exclusive of revenue in Russia.

The key prerequisites for the NVIDIA model forecast were as follows:

- assumption of the annual growth rate of revenue of 20% in 2023–2027 on the basis of analysts' predicted values taken from publicly available sources [18];
- the current assets' and short-term liabilities' growth rate is defined on the basis of data on revenue;
- use of discounting parameters from publicly available sources [13; 19; 20].

In order to develop the second model for the hypothetical situation of continuing business in Russia for NVIDIA we added the RF revenue share (2%) to the reporting value of revenue for 2022, besides, the operating expenditures for the same year decreased by $16 mln (deconsolidation expenses), according to the report for the 3rd quarter [21] .

After comparing the two models, we obtained the difference of 3% in stock prices of these cases (below the 10% benchmark), i.e., we may assert that the end of operations in Russia has no impact on the stock price.

Speaking of non-financial aspects, for example, NVIDIA business model, we may say that this is more of a business-to-business model (*B2B*). NVIDIA's products are in strong demand among client companies. Technologies in the spheres of video gaming industry, professional imaging, high performance computing and automobile industry, where NVIDIA's on-board computers are used as the foundation for self-driving cars, gained widespread use.

One of important criteria that have influenced the company's decision to exit the Russian market was the reputational and sanctions risks. The reputational risk is interrelated with the corporate brand. Since NVIDIA is a technological leader, it is rational for the company to avoid the risk of loss of stakeholders' confidence. It also runs a high sanctions risk, making it impossible for NVIDIA to effect direct sales in Russia.

The share of institutional investors is 68.04% [22]. An analysis of the list of investment funds generally demonstrates that there is no political pressure on them or their management.

The ESG factor impact on the company is strong. In its annual reports NVIDIA emphasizes that it has supported Ukraine after the beginning of the conflict, it is involved in volunteering and has donated over $22 mln for these purposes.

The behavioral finance theory is rejected in this case because the company opted to exit the market having initially negative expectations of the impact of the event that took place on 24 February. Thus, NVIDIA acted rationally, which ultimately led to no adverse effect on its operations.

Another company we examined is Activision Blizzard, which is known for its video games and was founded in 2008 as a result of a merger of Activision and Vivendi Games. We chose Activision Blizzard because it represents a rather large and prospective IT sub-industry – the gaming industry – and is distinguished by the specific character of its business operations.

The major part of company's revenue (approximately 82%) is generated by the content distributed by digital on-line channels, while retail channels gain about 6% and other sources account for 12% [23].

In March 2022, the company announced the suspension of new sales in Russia as a response to the news of the launch of the SMO. At the same time, the company de facto continues its operations in Russia because the games released before 24 February 2022 are available to Russian users.

In the quantitative analysis, i.e., a financial model of financial factors in decision-making, the main assumption is the annual revenue growth rate of 5% since 2024. The current assets' and short-term liabilities' growth rate also corresponds to the revenue growth rate; discounting parameters are taken from publicly available sources [13; 24; 25].

In order to develop the second model for a hypothetical situation of business suspension in Russia we deducted the RF revenue share of 5% from the reporting value of revenue for 2022. After comparing the two models, we revealed that the difference in stock prices in these cases amounted to 31%. It exceeds the control benchmark of 10%, i.e., the factor of the Russian revenue share has a significant impact on the dynamics of Activision Blizzard stock and the company's corporate decisions related to business in Russia.

It is one of the largest computer games producers, whose products are highly recognizable. Also, last year Activision Blizzard was often mentioned in mass media because Microsoft declared its intent to purchase the company for $68.7 bn [26]. The future value of the company depends directly on the success of this deal, therefore at the moment reputational risks exert a serious influence on corporate decisions.

Activision Blizzard has a large share of institutional investors independent from the government (84.76%) and the management is not exposed to political pressure [27]. None of the board members has occupied positions in government bodies or was engaged in politics.

The impact of the ESG policy factor on corporate decisions is considered average because the company increases all donations made by its employees to charities that help Ukraine. However, the company does not declare its position directly in the integrated reports because it plans to resume sales in Russia after the end of the SMO.

Theory of the impact of behavioral finance in this case is partially confirmed:

- company management expressed its negative expectations of the impact of the SMO launch on the business in Russia;
- the company made the decision to suspend sales of new developments in March 2022, while continuing to support Russian users of the existing products, preserving the share of Russian revenue and maintaining its presence in the Russian market.

Thus, in spite of suspension of some operations, in actual fact the company stayed in the Russian market. The impact of the negative expectations from the current events on the company's decision was not strong enough to make it withdraw from the market completely. So, the company made a partially irrational decision to stay in the market despite the risks and benefited from the market abandoned by competitors.

The last company used in the case study is Schlumberger Limited – an American oil and gas giant represented in over 120 countries, including Russia. This company has been selected for the study for several reasons:

- the company represents a specific IT sub-industry: creation of IT infrastructure for oil extraction;
- the company presents one of the most interesting cases in the study of the impact of the event of the SMO launch: in March 2022 the company declared a complete suspension of all operations in Russia, however, in about 6 months it fully reactivated its Russian business operations under its brand after it had re-registered legal entities as owned by the local management.

Similarly to previous cases, we performed a quantitative analysis of the impact of the revenue share factor in the form of a financial model. The model's main forecast prerequisites are the accepted assumption of the annual revenue growth rate of 5% since 2024. The current assets' and short-term liabilities' growth rate also corresponds to the revenue growth rate, discounting parameters are taken from publicly available sources [13; 28; 29].

In order to develop the second model for a hypothetical situation of business suspension in Russia for Schlumberger, we deducted the RF revenue share (6% taking into account the 23% growth in 2022) from the reporting value of consolidated revenue for 2022. Also, operating expenditures for the same year were increased due to the addition of deconsolidation expenses (assumption of sale of the company's Russian assets at a 50% discount from the fair value).

After comparing the results of the evaluation of the two models, we discovered a difference of 11% in stock prices in these cases (exceeding the 10% benchmark), i.e., in this case we also observe the impact of the RF revenue share factor on the Schlumberger's stock dynamics and, hence, on corporate decision-making concerning the business in Russia.

The significant factor of Schlumberger's Russian assets should also be noted. The company's fixed assets in Russia amount to approximately $0.3 billion (5% of the total

amount of the entire group of companies). First of all, these assets comprise factories and plants [30]. This factor along with revenue is evaluated as one of the principal ones for the company because Schlumberger technologies and the demand for them were the main reason for the company's return and business reactivation.

The aspect of Schlumberger recognizability is ambiguous, although the company has enormous weight in the oil and gas industry, renders over 20% of all oilfield services in Russia and is the industry leader in the country.

Political and reputational risks and risks of country instability are the main business risks in Schlumberger's risk management system. In spite of the fact that at the date of the event study performed in this research Schlumberger belonged to category *F* of remaining companies (i.e., the ones continuing business in the Russian Federation without limitations) on 10 May 2023 the company declared a set of measures that should have ensured a normal course of operations in Russia. The main reason behind the decision was industry sanctions prohibiting to provide to Russia certain technologies of similar western companies. The company will also restrict the access of the Russian office to certain products and internal documents of the group of companies. Thus, Schlumberger management complies with the international sanctions requirements, but at the same time preserves its position in the Russian market and continues to provide services to Russian companies. Thus, the impact of political risks is considered low, while the impact of reputational and sanctions risks is assessed as high in regard to the decision on continuing or winding down business operations in Russia.

The factor of government participation in several investment funds (Deutsche Bank AG (2%), JP Morgan Chase & Co., S&P Global Inc. (<5%)) produces no significant impact on the company management when corporate decisions are made.

In this case, there is no ESG policy impact on the decisions of the Schlumberger management because the company does not take a clear political stand in its integrated reports or publish data on other humanitarian initiatives concerning the Russia-Ukraine conflict.

The hypothesis of the behavioral finance impact on the decisions of the Schlumberger management is true for this case because the company made an irrational decision to stay in the market with negative expectations concerning the impact of the event of 24 February. As at March 2022, the company expressed its concerns about continuing its business in Russia because the management had negative expectations and declared openly that they are closing down their business in the Russian Federation. At the same time, in fact the company has continued rendering services in Russia and still operates with minimal restrictions. This is an action that contradicts the management's expectations and is anomalous with this background. The company benefited from the decision to stay in the Russian market: at the end of 2022 the company recorded a 23% increase in revenue because its competitors had left the market.

The conclusions of analysis of the Visa, NVIDIA, Activision Blizzard and Schlumberger cases are presented in Table 3. An analysis of the degree of the impact of the selected factors showed that in their decision-making companies are guided by the RF revenue share in the total consolidated amount, rather than other financial factors. This factor turned out to be significant for Activision Blizzard and Schlumberger.

After an analysis of corporate governance factors, we found out that sanctions and reputational risks are of importance in decision-making of all considered companies. Terms of ESG policies turned out to be important for two of the four companies: Visa and NVIDIA. The recognizability factor also produced a high impact on making corporate decisions for Visa, NVIDIA and Activision Blizzard.

Table 3. Evaluation of the degree of influence of financial and non-financial factors on companies' corporate decisions

Company	Degree of influence of the considered factors						
	Financial factors		Non-financial factors				
	Revenue share	Assets share	Recognizability	Risks	Institutional investors	ESG policy	Behavioral finance
Visa	Low	Low	High	High	Average	High	Low
NVIDIA	Low	Low	High	High	Low	High	Low
Activision Blizzard	High	Low	High	High	Low	Average	Average
Schlumberger	High	High	Average	High	Low	Low	High

Source: compiled by the authors.

In the present paper we performed two types of research: an event analysis of dynamics of American IT companies' stocks before and after the declaration of the SMO on 24 February 2022, as well as a case study by way of quantitative and qualitative analysis of financial and non-financial factors of the sample of the companies which have exited the market and the remaining companies.

On the basis of the results of event study, hypothesis H1 was rejected: the SMO declaration did not exert a significant impact on the American IT companies' stock. Hypotheses H2 and H3 were confirmed. The remaining companies selected for the cases are governed by financial aspects, in particular, the RF revenue share when they make corporate decisions on whether to continue business in Russia. From the point of view of non-financial factors, reputational and sanctions risks have the greatest impact on companies' decisions.

Thus, the cancel culture phenomenon in relation to Russia did not influence the dynamics of the American IT industry stock, and the companies' decision to exit the market or continue business in Russia depends on whether a company has a significant share of revenue in the RF, on the degree of reputational and sanctions risks, the recognizability factor and specific features of ESG policy.

Conclusion

After the beginning of the SMO, foreign companies revised their strategy of presence in the Russian market. After the abovementioned events the cancel culture phenomenon in relation to Russia took on a global economic meaning.

We reviewed literature sources in three key areas: study of the stock markets' reaction by means of event study, consideration of the cancel culture phenomenon in its new interpretation, defining the factors that influence corporate decision-making. We also examined the reaction of the American stock market to the cancel culture phenomenon in relation to Russia using the rapid-growing IT industry as an example, established a methodology and applied it to study the impact of the event of 24 February 2022 on the dynamics of company stocks, and substantiated the choice of the technology industry for the research. Then, on the basis of the event study, both positive and negative results of the event impact were revealed for certain categories of companies. Hypothesis H1 was rejected, i.e., the declaration of the SMO exerted no significant impact on the American IT companies' stock.

Then, as a part of the case study, qualitative and quantitative evaluation of four IT companies was carried out. The companies were selected on the basis of the event study results. As a result, hypothesis H2 was confirmed: the RF revenue share is of great importance for companies when they make a decision whether to continue business in Russia or wind it down. The smaller the revenue share in the RF, the higher the probability of a foreign company's exit from the market without serious losses.

Hypothesis H3 was partially confirmed: the most significant decision-making factors are the degree of reputational and sanctions risks, the company recognizability factor and the specific features of ESG policies. At the same time, the behavioral finance theory which implies a comparison of the company's initial expectations to its actual decision was completely confirmed only for one company among the ones used as an example.

In conclusion, some limitations detected during the research should be noted, and the possible ways to expand and make the present paper more profound should be suggested.

First, taking into consideration the specific character of the industry and constantly updating the data, the company sample for the event study is insufficient in size. In addition, in this research we have not considered the multifactor event study models that are necessary for the expanded analysis and additionally take into consideration such indicators as, for example, the size of the analyzed company.

In the future, the researchers performing a case study may also consider the impact of other non-financial factors, for example, CEO's and board of directors' characteristics. The impact of financial aspects on corporate decisions may be analyzed in a more comprehensive way. For example, the factor of reputational and other relevant risks may be taken into consideration from the quantitative point of view for the purpose of forecasting in the financial model.

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