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TRENDS AND OUTLOOKS

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R95 **Russian Economy in 2020. Trends and outlooks**. **(Issue 42)** / [V. Mau et al; scientific editing by Kudrin A.L., Doctor of sciences (economics), Radygin A.D., Doctor of sciences (economics), Sinelnikov-Murylev S.G., Doctor of sciences (economics)]; Gaidar Institute. – Moscow: Gaidar Institute Publishers, 2021. – 668 pp.: illust.

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The review "Russian Economy. Trends and Outlooks" has been published by the Gaidar Institute since 1991. This is the 42th issue. This publication provides a detailed analysis of main trends in Russian economy, global trends in social and economic development. The paper contains 6 big sections that highlight different aspects of Russia's economic development, which allow to monitor all angles of ongoing events over a prolonged period: global economic and political challenges and national responses, economic growth and economic crisis; the monetary and budget spheres; financial markets and institutions; the real sector; social sphere; institutional changes. The paper employs a huge mass of statistical data that forms the basis of original computation and numerous charts confirming the conclusions.

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3.1. The Russian financial market[1]

3.1.1. The stock market in 2020 and Q1 2021

In 2020, after the sudden financial shock in March caused by sales of risky assets by investors against the backdrop of the rising coronavirus pandemic, stock markets in many countries recovered faster than did the economic indicators. The traditional hypothesis that the value of financial assets depends more strongly on future investor expectations than on past events has been confirmed.

As shown in *Fig. 1*, in 2020, among the 36 monitored national stock indexes denominated in different currencies, the positive movement patterns of their returns in per annum terms were demonstrated by the stock index portfolios of only 23 countries. In this connection, the highest returns were linked to the tech-heavy stock indexes: thus, NASDAQ Comp. (CIF) climbed 43.6%; Shenzhen Composite Index (China), 35.2%; and NASDAQ OMX Copenhagen (Scandinavian countries), 28.5%. The poorest performance patterns were typical of those economies that were hit hardest by the pandemic, as well as by the UK economy, which was experiencing the additional difficulties as a result of Brexit. Over the year, the Spain Stock Market Index lost 15.5%; FTSE 100 (UK), 14.3%; the Cyprus Stock Market Index, 13.0%, the Straits Times Index (Singapore), 11.8%; and Greece's Athex Composite Index, 11.7%.

Although, in 2020, Russia's GDP plunged significantly less than the corresponding indices of many developed and developing economies, the RTS Index, which is denominated in US dollars, fell by 10.4%, thus making Russia one of the six countries with the worst-performing stock markets. This happened primarily due to the sharp drop in oil prices and the Russian economy's strong

1 This section was written by *Abramov, A.* , Candidate of Economic Sciences, Director of the Center for Institutions Analysis and Financial Markets, IAES, RANEPA; *Radygin, A.*, Doctor of Economic Sciences, Head of the Center for Institutional Development, Ownership and Corporate Governance of the Gaidar Institute, Director of the RANEPA Institute of EMIT; *Chernova, M*., researcher at the Center for Institutions Analysis and Financial Markets, IAES, RANEPA.

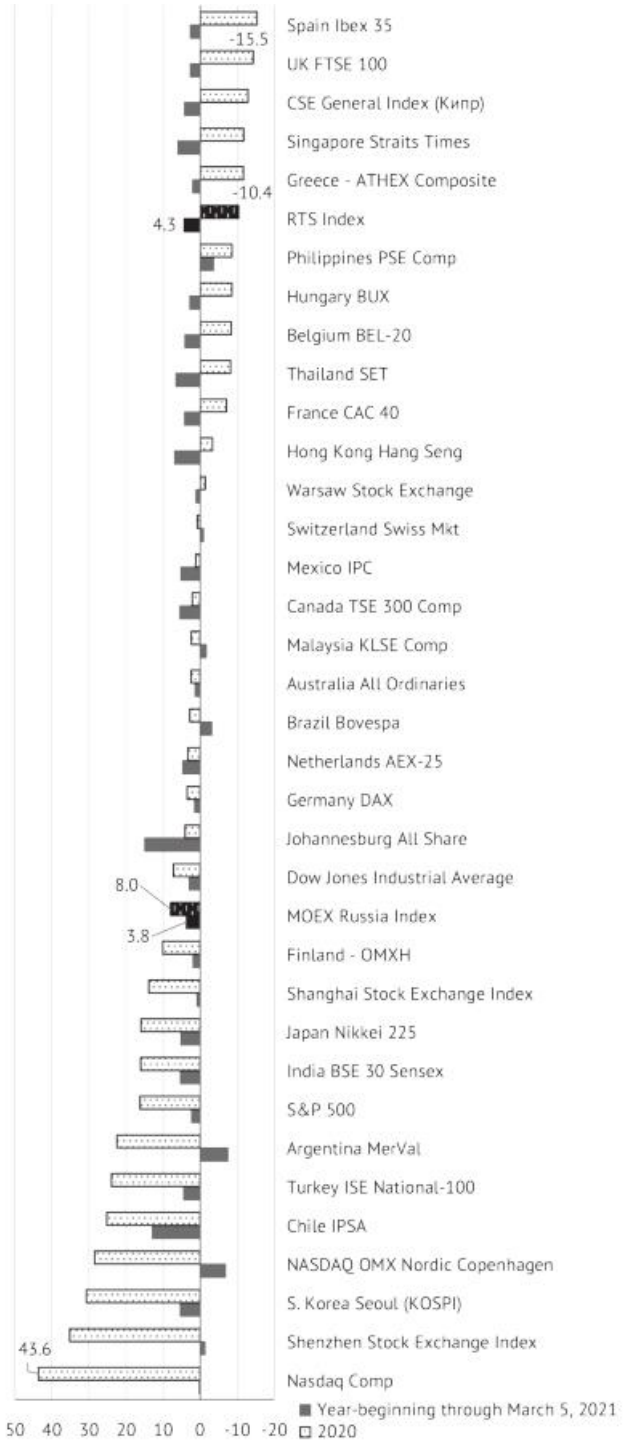


Fig. 1. The returns of 36 world stock indexes on major exchanges, 2020 and 2021, as of March 5, as % per annum

Source: own calculations based on data released by The Wall Street Journal.

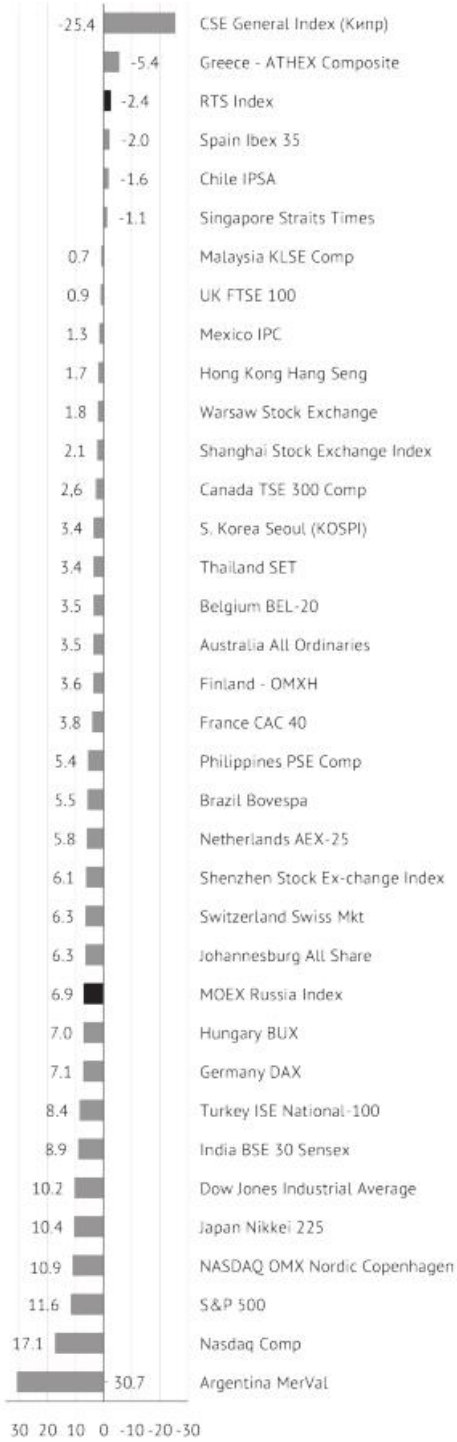


Fig. 2. The geometric mean return of 36 world stock indexes on major stock exchanges over the period 2010–2020, as % per annum

Source: own calculations based on data released by The Wall Street Journal.

dependence on exports of raw materials. During the first two months of 2021, Russia's both national stock indexes were growing at above average rates. As of March 5, 2021, the return of the RTS Index stood at 4.3%, and that of MOEX Russia Index, at 3.8%, which was the upshot of the faster growth of oil prices in response to the global economic recovery coupled with the influence of OPEC+ on oil production, as well as the relative stabilization of the ruble exchange rate.

Over the 10-year time horizon from 2010 to 2020, the geometric mean return on investments in Russian stocks denominated in US dollars turned out to be among the worst in the group of 36 world stock indices (*Fig. 2*). The average annual return of the RTS Index amounted to -2.4%, i.e. it was slightly better than the corresponding indexes of the countries that had been experiencing long-term financial crises - Greece's Athex Composite Index, with its annual return of -5.4%, and Cyprus Stock Exchange General Index (CSE), which on average declined by 25.4% over the year. The long-run negative return of the RTS Index has to do with to the low returns on materials stocks in face of the protracted stagnation in the growth rate of prices for those raw materials that the issuers of those stocks export, as well as the ruble weakening.

Over the same period, the average annual return of MOEX Russia Index rose to 6.9%, which happened in the main in response to the ruble weakening, and not to the performance of the stock issuers.

As shown in *Fig. 3*, in 2020 the Russian ruble exchange rate against the US dollar fell by 16.2%, thus demonstrating one of the deepest plunges among the national currencies of the 27 countries and regions included in our sample. Considering that, compared with many other countries of the world, the financial stability indicators that Russia had been displaying were quite high, the fact of the ruble hovering near the national currencies of the countries experiencing an unstable financial situation (Argentina, Brazil, Turkey and Ukraine) can be explained in the main by the impact of the oil and gas market shocks. This happened largely due to suspension, from H2 2020, of the measures designed to support the ruble in the form of foreign currency sales on the exchange by the RF Ministry of Finance. Over the first two months of 2021, the ruble exchange rate further depreciated by 0.4% (data as of March 5, 2021); however, this decline turned out to be less than that of the other 18 national currencies over the same period.

During the crisis in 2020, world gold prices rose by 25.1%, reflecting the desire of global investors to find a "safe haven" for their assets in face of low government bond yields. However, in the first two months of 2021 alone, gold prices declined by 10.3%, which was caused by the increasing attraction of investors towards riskier assets in response to the positive information concerning the high economic recovery rates and the launch of vaccination campaigns. Besides, the discussions on the issue that the decline in gold prices could be caused by a shrinking demand for that particular asset because, as a store of value, it was being replaced by the increasingly popular digital financial assets, were becoming more intense.[1]

1 *Vigna Paul*. Bitcoin's Value Is All in the Eye of the 'Bithodler'. The Wall Street Journal on-line, Feb.20, 2021; Gallagher Tyler. Will Crypto Replace Gold As The Go-To Inflation Hedge In 2021? Forbes on-line, Feb. 20, 2021.

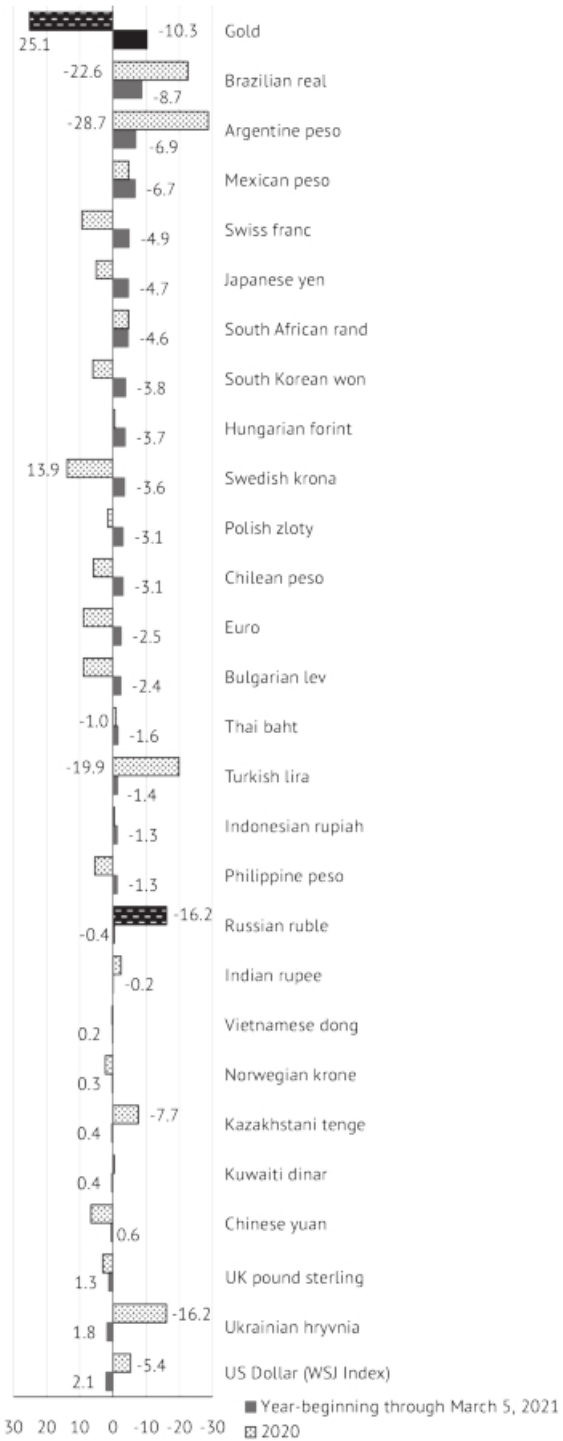


Fig. 3. Changes in the value of 27 national currencies in 2020 and Q1 2021 (as of March 5), as %

Source: own calculations based on data released by Bloomberg and The Wall Street Journal.

The year 2020 was a time of trial for many national economies and financial markets around the world due to the coronavirus epidemic. Many of them entered this crisis while not yet having fully recovered from the 2008 crisis, with low key rates, overvalued central bank balance sheets as a result of their quantitative easing policies, and significant government debt.

Academic studies have elaborated different criteria for defining financial crises. In our case, we apply the simplest criterion suggested in the works by Barro and Ursua,[1] Reinhart and Rogoff,[2] whereby a financial crisis is defined as a decline of stock prices (stock indices) by 25% or more.

Over the past 25 years, the RTS Index four times demonstrated more-than-25% plunges: in 1997–1998; in 2008; in 2014; and from 2020 onwards (*Table 1*). Each of the four financial crises was followed by declining oil prices and devaluation of the ruble. The oil price shocks worsened the financial stability parameters of companies and the state budget, while the ruble devaluation triggered urgent foreign investment outflow from Russian stocks.

With each new crisis, the shocks experienced by the RTS Index were becoming increasingly less pronounced. While in the late 1990s its maximum decline from July 1997 amounted to 91.3%, over the first three months of 2020 it lost only 34.5% relative to its peak value of December 2019. Some similar patterns were followed by the ruble-denominated MOEX Russia Index, except that starting from January 2020, it lost 18.5%, i.e. slightly more than it did in 2014, when its decline amounted to 13.2%. The depth of price shocks in the oil market, on the contrary, over the years has been increasing: -58.3% from December 1996 vs -72.7% from January 2020.

This is indicative of the fact that Russia's economic policy, in a broad sense, while failing to achieve the necessary structural changes in the economy, nevertheless every time demonstrated its better and better adaptability to the global markets shocks. Thus, for example, in 1997-1998, the crisis of emerging markets was aggravated in Russia by the internal problems in the form of an unbalanced budget and a lack of sufficient gold and forex reserves. However, during the 2020 crisis triggered by the coronavirus, Russia, on the contrary, implemented a proactive financial sustainability policy by relying on the fiscal rule, cooperation with OPEC+ member states, and the resources of the National Wealth Fund; all these measures made it possible to significantly mitigate the impact of the external shock on the domestic financial market.

At the same time, without structural transformations, the generally successful financial stability cannot secure a sustainable economic and financial market growth. With each new crisis, oil prices rarely returned to their pre-crisis level, which happened in part due to changes in technology and the structure of the global economy. The recession consequences were especially severe from July 2008 onwards, when Brent crude oil prices stayed well below their pre-crisis values for 151 consecutive months, and as of February 2021 stood only at 46.5%

1 *Barro, Robert and Jose F. Ursua*. Stock Market Crashes and Depressions. NBER Working Paper 14760. National Bureau of Economic Research, Cambridge, Mass. February, 2009.
2 *Reinhart, C.M., Rogoff, K.S*. This Time Is Different: Eight Centuries of Financial Folly, 2009.

of their pre-crisis level. Moreover, after June 2014, there was a new global wave of oil price decline; 80 months later, the price of Brent crude oil reached only 55.7% of its June 2014 level. Oil and natural gas production is gradually losing its role of a driver of the Russian economy.

Another upshot of the existing structure of the economy has been the regular weakening of the ruble, with its negative influences on the attractiveness of Russian stocks for non-resident investors and the long-term saving strategies of domestic investors. During the four financial crises, the depreciated ruble never returned to its original pre-crisis values.

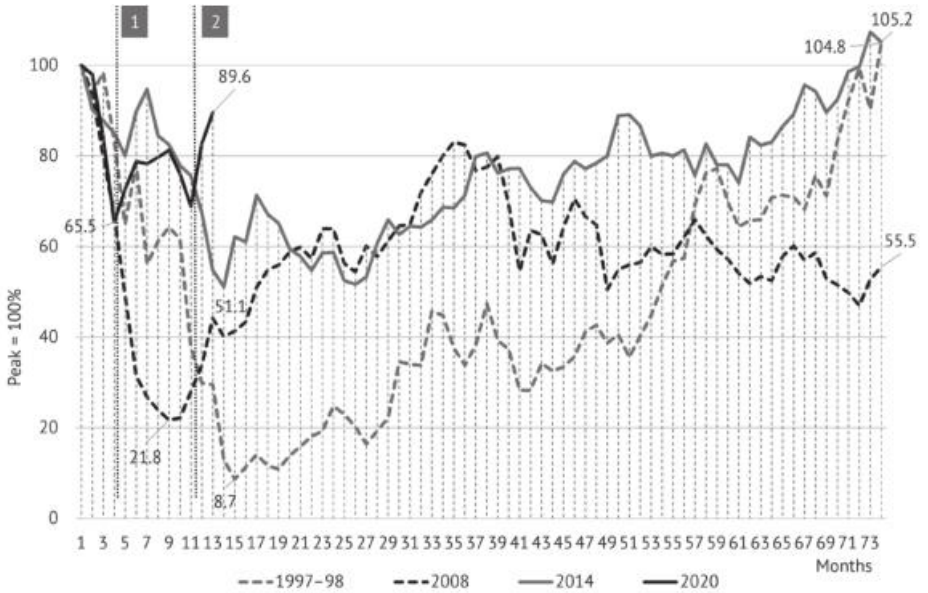
Table 1

The main parameters of financial crises in Russia over the period from July 1997 through February 2021

Market peak: index value, month and year	Market bottom period (months)	Maximum decline, %	Period of index recovery from its pre-crisis peak, months	Complete recovery	Current value of non-recovered index, % (peak = 100%)
RTS Index:					
July 1997	14	-91.3	73	Yes	
May 2008	8	-78.2	153	No	57.4
February 2014	13	-48.9	72	Yes	
December 2019	3	-34.5	12	No	89.6
MOEX Russia:					
August 1997	12	-79.1	21	Yes	
May 2008	6	-68.2	95	Yes	
February 2014	4	-13.2	11	Yes	
January 2020	2	-18.5	10	Yes	
Price of Brent:					
December 1996	24	-58.3	37	Yes	
July 2008	5	-68.9	151	No	46.5
June 2014	19	-72.6	80	No	55.7
December 2019	4	-72.7	14	No	92.5
Exchange rate growth (Rb/$) as of March 5, 2021, relative to:					
May 1998				No	12.0 times
May 2008				No	3.1 times
June 2014				No	2.2 times
December 2019				No	by 19.9%

Source: own calculations based on data released by the Moscow Exchange, the Bank of Russia, and data available at http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=rbrte&f=m

As shown in *Fig. 4*, in 2020, compared with its behavior during the four financial crises in Russia, the RTS Index (value of Russian stocks in US dollars) demonstrated the smallest decline. It amounted to only -34.5% vs -91.3% during the 1997-1998 crisis, -78.2% in 2008, and -48.0% in 2014. With a high degree of certainty, it may be assumed that its recovery in 2021 will happen much earlier



Notes.
1. March 2020. The RTS Index hits its record low, followed by a renewed recovery after the conclusion of a new OPEC+ oil price deal on April 12, 2020.
2. October 2020. The start of a new index growth wave after the US presidential election and the release of positive news about a global economic recovery and progress in the development of vaccines against the coronavirus.

Fig. 4. The movement of the RTS Index on a time horizon of up to 73 months relative to its peaks of July 1997, May 2008, February 2014, and December 2019, as of February 2021, as % (peak value = 100%)

Source: own calculations based on data released by the Moscow Exchange.

than it used to happen before. As of early March 2021, within just 12 months, the RTS Index climbed to 89.6% of its pre-crisis peak value.

In spite of the record decline experienced by many economies during the coronavirus pandemic, a considerable number of them demonstrated a recovery of their stock indexes even before the end of 2020 (*Fig. 1*), because the movement patterns of stock indexes were largely determined by the expectations of a quick economic recovery and successful vaccine rollout. A specific factor that helped a rapid recovery of the RTS Index was the OPEC+ agreement on oil price reached in April 2020.

As shown in *Fig. 5*, MOEX Russia Index (value of Russian stocks in rubles) recovered before the end of 2020, in just 10 months. Its faster recovery compared with that of the RTS Index resulted from the ruble weakening within the range of 20% over the same period. During the other three financial crises (in 1997–1998, in 2008, and in 2014), the Moscow Exchange Index had also recovered faster, for a similar reason.

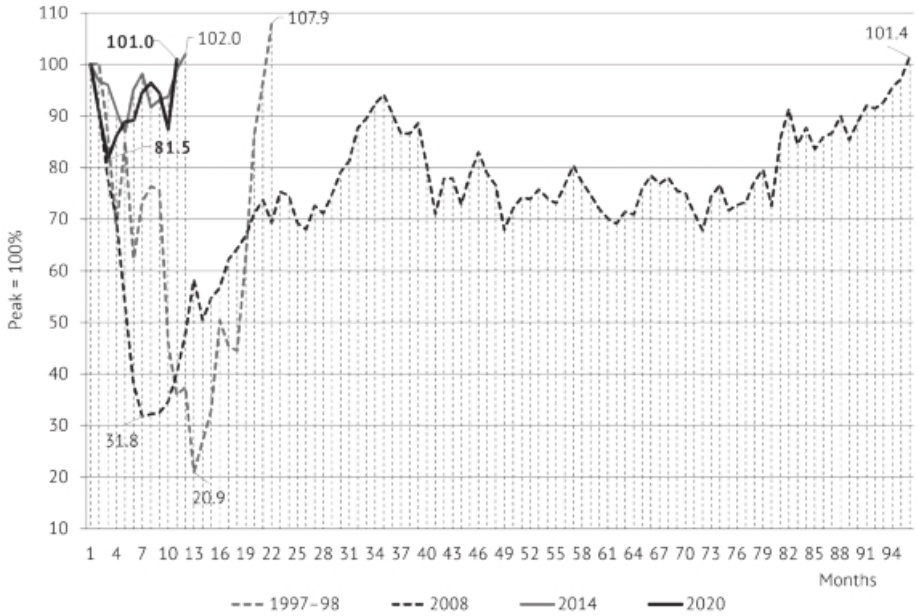


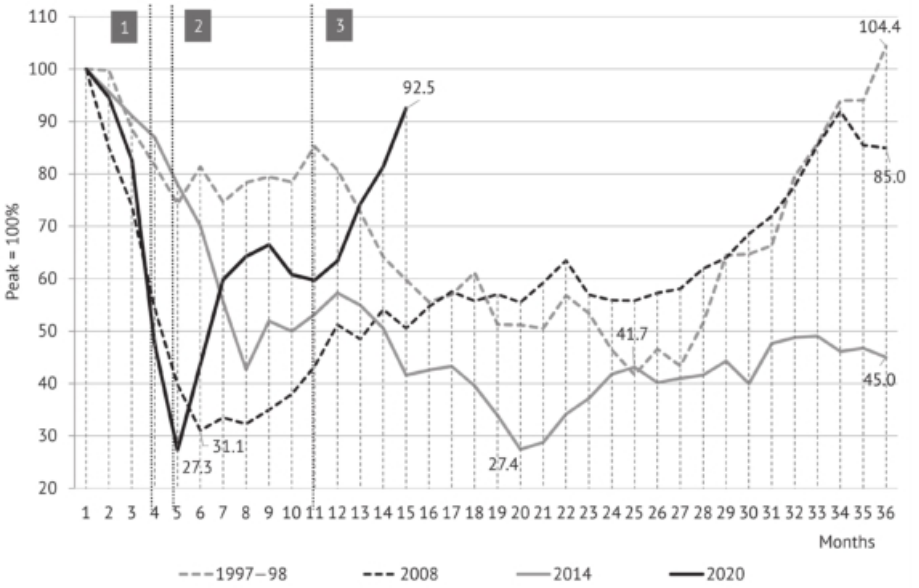
Fig. 5. The movement of the RTS Index on a time horizon of up to 95 months relative to its peaks of August 1997, May 2008, February 2014, and January 2020, as of February 2021, as % (peak value = 100%)

Source: own calculations based on data released by the Moscow Exchange.

In 2020, an accelerated recovery of stock markets relative to the pace of economic recovery was typical of many countries. US economist Paul Kaplan[1] showed that, among the 18 most serious financial crises in the US history over the 150-year period from 1870 to 2020 ranked by the depth and duration of stock price decline, the 2020 crisis triggered by the Covid-19 pandemic was the shortest and shallowest one. After a plunge by 20% (in real terms) over the period from December 2019 through March 2020, the US stock market fully recovered in just four months, returning to its pre-crisis level in July 2020. The expert came to the conclusion that after each of the 18 crises, the market for US stocks always recovered to its pre-crisis level, but that the actual speed of market recovery, including in 2020, is impossible to predict.

Although the downfall of the price of Brent crude oil in 2020 was the deepest compared with the previous three crises, it is likely that, in 2021, its recovery to its pre-crisis level will occur faster than it did on the previous occasions. As of early March 2021, price of oil already stood at 89.6% of its peak of December

1 *Kaplan Paul*. In Long History of Market Crashes, Coronavirus Crash Was the Shortest. Morningstar on-line, March 9.2021. URL: https://www.morningstar.com/articles/1028407/in-long-history-of-market-crashes-coronavirus-crash-is-short.



Notes.
1. March 2020. The collapse, on March 6, 2020, of the old OPEC+ deal on the oil price cap.
2. Resumed oil price growth after the new OPEC+ agreement on oil prices reached on April 12, 2020.
3. October 2020. The start of a new wave of oil price growth after the US presidential election and the release of positive news about a global economic recovery and progress in the development of vaccines against the coronavirus.

Fig. 6. The movement of Brent crude oil price on a time horizon of up to 36 months relative to its peaks of December 1996, July 2008, June 2014, and December 2019, as of February 2021, as % (peak value = 100%)

Source: own calculations based on data available at URL: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=rbrte&f=m

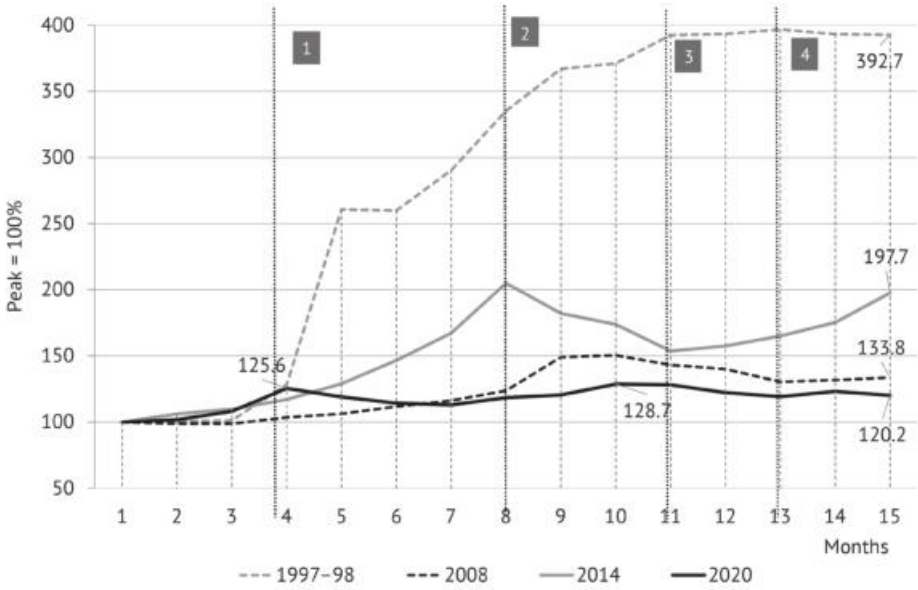
2019 (*Fig. 6*). This happened primarily due to the rapid pace of global economic recovery that had begun from H2 2020 onwards.

The oil price shock in the spring of 2020 was intensified by the unexpected breakdown of the OPEC+ oil price deal on March 6, 2020 triggered by the conflict between Saudi Arabia and Russia. However, the prompt achievement, on April 12, 2020, of a new agreement on oil production cut conduced to a recovery in oil prices. A new impetus to oil price growth from November 2020 was provided by the positive news of global economic recovery and the coronavirus vaccine rollout.

Against the backdrop of a rapid recovery in oil prices in early 2021, representatives of a number of global investment banks (e.g., JP. Morgan) announced the start of a new long-run cycle in the upward movement of prices for oil and other raw materials in the context of an increased demand for these

products and the soft monetary policies pursued by the central banks of many countries.[1]

The 2020 financial crisis was followed by a more moderate depreciation of the ruble compared to the shocks of 1997–1998, 2008, and 2014 (*Fig. 7*). Over the period from January 2020 through March 2021, the ruble exchange rate against the US dollar gained 20.2%. Back in 1998, over the same 14-month period, the ruble exchange rate jumped 3.9 times; from June 2014, - 2.0 times; while in 2008-2009, during the "managed" gradual devaluation of the ruble, the US dollar climbed 33.8%. In 2020, the RF Ministry of Finance and the RF Central Bank safeguarded the ruble exchange rate against any excessive fluctuations. During the shock-triggered collapse of financial markets in March 2020, the stability of the ruble



Notes.
1. March 2020. The launch of foreign currency sales in the market, by the RF Ministry of Finance within the framework of the fiscal rule, and by the Bank of Russia after selling a stake in Sberbank.
2. July 2020. The daily volume of foreign currency sales in the market by the RF Ministry of Finance is reduced on average to Rb6 bn in July, and to Rb 3 bn in August.
3. October 2020. The daily volume of foreign currency sales by the RF Ministry of Finance is increased on average to Rb8 bn.
4. From January 2021, the RF Ministry of Finance begins to buy foreign currency in the market.

Fig. 7. The movement, over a time horizon of up to 15 months, of the USD-to-ruble exchange rate relative to its peaks of May 1998, May 2008, June 2014 and December 2019, as of February 2021, as % (peak = 100%)

Source: own calculations based on the data released by the Bank of Russia.

1 *Goldstein Steve*. The fifth commodity super cycle has started, says highly regarded JP Morgan strategist. Market Watch on-line, Feb. 11, 2020.

exchange rate was sustained by the RF Ministry of Finance through applying the fiscal rule, whereby it was obliged to sell some of its forex resources in the market whenever it was necessary to draw from the NWF in order to cover budget expenditures, while the Bank of Russia was required to sell in the forex market its proceeds from the sale of a stake in Sberbank. Later on, the RF Ministry of Finance would periodically reduce or increase the daily volume of foreign currency to be traded on the Moscow Exchange, as a result of which the ruble would weaken or strengthen (*Fig. 7*).

So far, no straightforward explanation has been offered as to why the sudden financial market collapse, especially in the USA, happened specifically on Monday, March 16, 2020. An article published in *The Wall Street Journal* (2020)[1] reconstructs the events that had been taking place over the 2-3 days before that collapse.

On Sunday, March 15, at 5 pm, US Federal Reserve Chairman Jerome Powell, in an emergency move, announced dropping the benchmark interest rate to zero and launching a new round of quantitative easing, which would entail $700 bn worth of asset purchases in the stock market.[2] Markets had been expecting the rate cut issue to be discussed, in accordance with the Fed's plans, not earlier than Wednesday, March 18th. The Fed's sudden decision, announced three days ahead of schedule, put the market on the alert, and in many ways played the role of "oil poured into the fire".

The Fed's decision was caused by the simultaneous sharp surge in multiple investors' demand for cash, while at the same time, due to regulatory restrictions, major banks obviously lacked liquidity reserves that they could use without violating the established norms and their capital adequacy requirements. On the morning of March 16, 2020, the fears of an impending economic downturn triggered a massive exodus of investors from the money market funds and bond mutual funds. In order to properly settle with their shareholders, the funds needed to sell a large amount of bonds on the market, where they were faced with the reluctance of banks to spend money on purchasing bonds.

A number of municipalities experienced serious difficulties in the municipal bond market when they attempted to launch additional bond issues and refinance their old debts against the backdrop of the rapidly deteriorating coronavirus infection statistics.

Thus, it can be assumed that the events of March 16, 2020 represented primarily a liquidity crisis produced by the sudden awareness of market participants of the risks associated with the impending coronavirus epidemic and its consequences, coupled with the banking system's reluctance, because of the excessive regulatory requirements, to act as a temporary stabilizer of liquidity shortage. That is why the US Federal Reserve, from then onwards, had to shoulder the responsibility to deal with the liquidity shock.

1 *Baer Justin*. The Day Coronavirus Nearly Broke the Financial Markets // The Wall Street Journal on-line, May 20. 2020.
2 *Timiraos Nick*. Fed Slashes Rates to Fight Coronavirus Slowdown // The Wall Street Journal on-line, March 15, 2020.

So far, out of the five BRICS members, the stock indexes after the 2008 crisis have not recovered to their pre-crisis level only in Russia and Brazil (*Fig. 8*, *Table 2*). Over the 153 months that have passed since May 2008, the RTS Index recovered to only 57.4% of its pre-crisis level, and the MSCI Brazil Index, to only 34.6%. The RTS Index, which is calculated with due regard for reinvestment of dividends, recovered to the pre-crisis level within 140 months. The stock market crisis that occurred in March 2020, at the onset of the pandemic, in many ways hindered the recovery of the stock indices of Russian and Brazilian companies.

The stock indexes of the other three BRICS members managed to recover more quickly to their pre-crisis levels of 2008: the MSCI India Index, within 22 months; the MSCI South Africa Index, within 28 months; and the MSCI China Index, within 82 months. The stock indices of Chinese and Indian companies likewise recovered more rapidly after their downfall in March 2020: thus, as of early March 2021, the MSCI India index stood at 141.1%, and the MSCI China Index, at 163.1%, of their pre-crisis levels of 2008. In 2020, the MSCI South Africa Index was also recovering more successfully than its Russian and Brazilian counterparts, climbing by early March to 95.9% of its pre-crisis level of 2008.

The different rates of recovery demonstrated by the stock indexes of the two groups of BRICS members observed after the 2008 and 2020 crises have to do with a greater diversification of the national economies of India, China, and in part of that of South Africa, compared with the structure of the national economies of Russia and Brazil, as well as a number of specific features of the latter. The slow pace of recovery of Russia's stock market has been shaped by the economic sanctions that restrict the inflow of foreign investment; and in Brazil, by the increased macroeconomic instability, which has been further enhanced by the COVID-19 epidemic.

Table 2

The recovery of BRICS stock indexes denominated in US dollars after the 2008 crisis, as of February 28, 2021

Index	Index recovery period from May 2008, months	End of recovery	Current index value, % (May 2008 = 100%)
RTS	153	No	57.4
RTS Total Return	140	Yes	96.3
MSCI Brazil	153	No	34.6
MSCI South Africa	28	Yes	95.9
MSCI India	22	Yes	141.1
MSCI China	82	Yes	163.1

Source: own calculations based on data released by the Moscow Exchange and Bloomberg.

When analyzing the history of the US stock market for the period from 1870 to 2020, Kaplan[1] identified 18 major stock market shocks, and demonstrated that

1 *Kaplan Paul*. In Long History of Market Crashes, Coronavirus Crash Was the Shortest. Morningstar on-line, March 9. 2021. URL: https://www.morningstar.com/articles/1028407/in-long-history-of-market-crashes-coronavirus-crash-was-the-shortest.

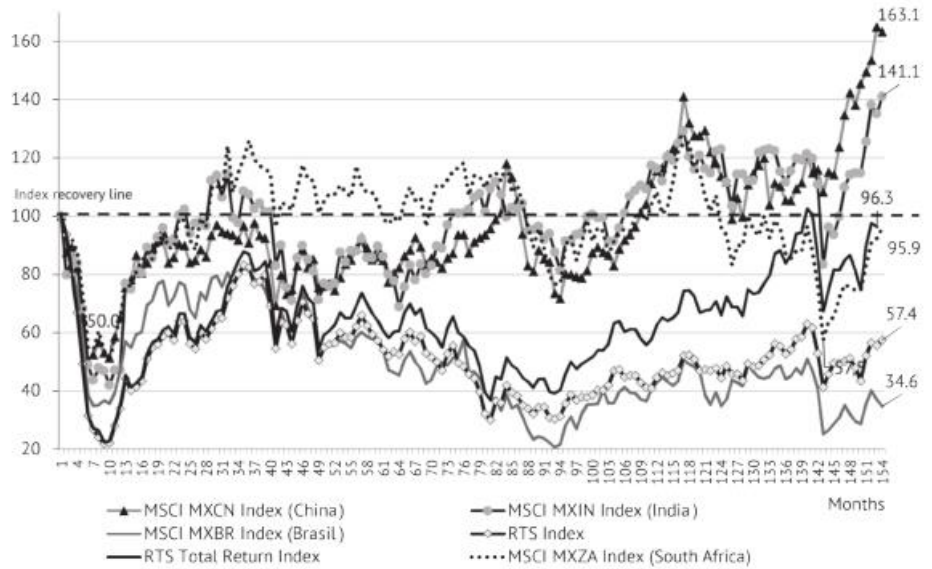


Fig. 8. The depth and duration of the impact of the 2008 crisis on BRICS stock indexes denominated in US dollars, as of February 28, 2021 (peak in May 2008 = 100%)

Source: own calculations based on data released by the Moscow Exchange and Bloomberg.

after all those financial crises, stock indices always recovered to their pre-crisis level. It is noteworthy in this connection that, in 2020, the period of the US stock market recovery was the shortest relative to those after all the previous 18 crises.

However, sometimes a full recovery of a stock market is a very slow process, and in a limited number of historic examples, that process has not yet been over even now, many years after the crisis. The most protracted crises in the modern history of stock markets were the recession in the US stock market during the Great Depression of 1929–1933, and the downfall of the Japanese stock market after 1989. The recovery of Dow Jones Industrial Average (DJIA) in the USA after the Great Depression lasted 303 months, or 25.3 years (*Fig. 9* and *Table 3*). In 2015, this record was broken by the Japanese NIKKEI-225 index, which as of March 5, 2021, had failed to recover in 374 months, i.e. more than 31 years. Its value in March 2021 amounted to only 74.4% of its peak achieved in 1989.

The somewhat faster recovery of the Japanese stock market in 2017–2020 was possible thanks to the quantitative easing measures implemented by the Bank of Japan since 2016, which entailed the acquisition of shares in private exchange-traded funds (ETFs), to the value of up to ¥6 trillion (about $55 bn) in per annum terms. In 2020, this limit was doubled; from March 9, 2021, the Bank of Japan announced that it would begin to reduce the limit.[1]

1 *Fujikawa Megumi*. Bank of Japan Drops Stock-Buying Target After Market's Rise. The Wall Street, March 19, 2021.

Against the backdrop of those crises, the recovery of Russia's RTS Index and the MSCI Brazil Index to the levels of 57.6% and 34.6%, respectively, which has lasted 153 months, is still closer to the trajectory of market recovery in a medium-term crisis. After the 1989 financial crisis in South Korea, the KOSPI Index recovered over 183 months, and after the dotcom bubble burst in the USA in 2000, the NASDAQ Composite returned to its pre-crisis level in 177 months.

Table 3

The longest recovery periods of national stock indexes as of February 28, 2021

Country (index - year of crisis onset)	Period of index recovery from its peak value, moths	End of recovery	Current value of unrecovered index, % (peak = 100%)
Japan (Nikkei – 1989)	374	No	74.4
USA (DJIA – 1929)	303	Yes	
South Korea (KOSPI – 1989)	183	Yes	
USA (NASDAQ – 2000)	177	Yes	
Russia (RTS (USD) - 2008)	153	No	57.4
Brazil (MSCI (USD) 2008)	153	No	34.6
China (MSCI-Shanghai (USD) - 1997)	122	Yes	
China (MSCI-Shanghai (USD) - 2008)	82	Yes	
USA (DJIA – 1907)	64	Yes	

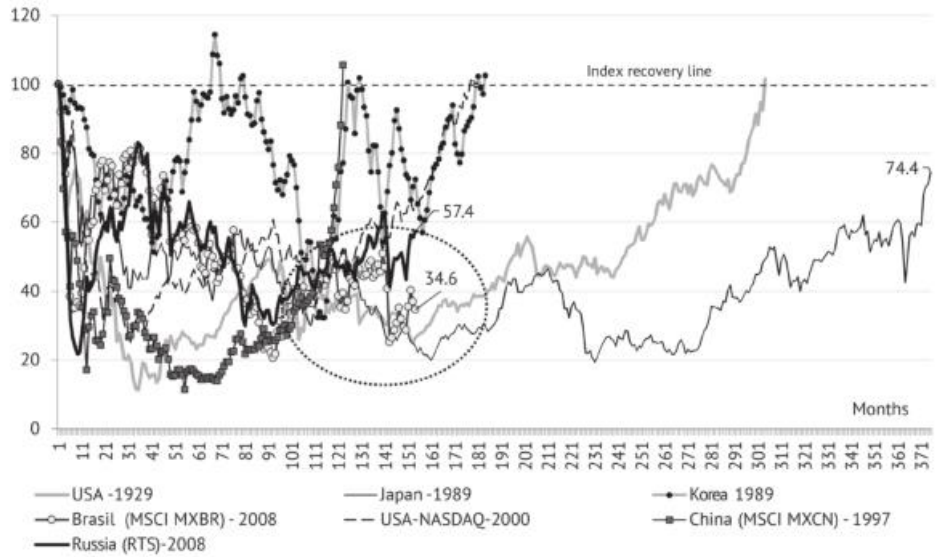


Fig. 9. The depth and duration of the longest stock index recoveries, as of February 28, 2021 (pre-crisis peak = 100%)

Source: own calculations based on data released by the Moscow Exchange and Bloomberg.

Typically, financial crises with longer (medium and long run) recovery periods are typical of the economies with severe structural problems. In the case of Russia, these have to do with the strong dependence of the national economy and stock market on the companies operating in the raw materials sector, investment climate problems that prevent the emergence of new leading companies in the non-resource sectors, and the high risks associated with geopolitical factors.

3.1.2. Equity risk premium

For domestic and foreign investors alike, the equity risk premium is one of the key characteristics of a country's stock market. It is the main component of the cost of capital to be considered when assessing investment projects, and it also serves as a universal corporate governance performance indicator and a benchmark of a stock's attractiveness for foreign investors. The essence of the problem is that there exist several different equity risk premium indicators of Russian stocks, and the relevant information concerning these indicators is provided by foreign agencies. Our review relies on our own estimates of these indicators.

In this connection, several most popular approaches to assessing the market risk premium of Russian stocks can be pointed out (*Fig. 10*). Fernandez et al. estimate the average equity risk premium based on opinion polls of scientists and business communities in different countries, who were asked about the particular equity risk premiums and risk-free rates they had applied in their studies over the past year.[1] Dimson, Marsh, and Stainton, in their book 'Triumph of the Optimists'[2] and their investment return reports released by Credit Suisse,[3] calculate the

1 *Fernandez P., Aguirreamalloa J., Corres L.* Market Risk Premium Used in 56 Countries in 2011. URL: http://ssrn.com/abstract=1822182, 2011; *Fernandez P., Aguirreamalloa J., Corres L.* Market Risk Premium Used in 82 Countries in 2012. URL: http://ssrn.com/abstract=2084213, 2012; *Fernandez P., Aguirreamalloa J., Linares P.* Market Risk Premium and Risk Free Rate Used for 51 Countries in 2013: A Survey with 6,237 Answers. URL: http://ssrn.com/abstract=914160, 2014; *Fernandez P., Linares P., Fernandez A.I.* Market Risk Premium Used in 88 Countries in 2014: A Survey with 8,228. URL: http://ssrn.com/abstract=2450452, 2014; *Fernandez P., Pershin V., Fernandez A.I.* Discount Rate (Risk-Free Rate and Market Risk Premium) Used for 41 Countries in 2015. URL: https://ssrn.com/abstract=2598104, 2015; *Fernandez P., Ortiz A., Fernandez A.I.* Market Risk Premium Used in 71 Countries in 2016: A Survey with 6,932. URL: https://ssrn.com/abstract=2776636, 2016; *Fernandez P., Pershin V., Fernandez A.I.* Discount Rate (Risk-Free Rate and Market Risk Premium) Used for 41 Countries in 2017: URL: https://ssrn.com/abstract=2954142, 2017; *Fernandez P., Pershin V., Fernandez A.I.* Market Risk Premium and Risk-Free Rate used for 59 Countries in 2018: URL: https://ssrn.com/abstract=3155709, 2018; *Fernandez P., Martinez M., Fernandez A.I.* Market Risk Premium and Risk-Free Rate Used for 69 Countries in 2019: URL: https://ssrn.com/abstract=3358901, 2019.

2 *Dimson E., Marsh P., Stainton M., Garthwaite A.*Triumph of the Optimists: 101 Years of Global Investment Returns. Princeton University Press, 2002.

3 *Dimson E., Marsh P., Stainton M., Wilmot J.* Credit Suisse Global Investment Returns Yearbook 2009 // Credit Suisse Research Institute, Switzerland, 2009; *Dimson E., Marsh P., Stainton M., Wilmot J.* Credit Suisse Global Investment Returns Yearbook 2010 // Credit Suisse Research Institute, Switzerland, 2010; *Dimson E., Marsh P., Stainton M., Holland D., Matthews B.* Credit Suisse Global Investment Returns Yearbook 2011 // Credit Suisse Research Institute, Switzerland, 2011; *Dimson E., Marsh P., Stainton M., Wilmot J., McGinnie P.* Credit Suisse Global Investment Returns Yearbook 2012 // Credit Suisse Research Institute, Switzerland, 2012; *Dimson E., Marsh P., Stainton M., Garthwaite A.* Credit Suisse Global Investment Returns Yearbook 2013 // Credit Suisse Research Institute, Switzerland, 2013; *Dimson E., Marsh P., Stainton M., Mauboussin M.* Credit Suisse Global Investment Returns Yearbook 2014 // Credit Suisse Research Institute, Switzerland, 2014; *Dimson E., Marsh P., Stainton M., Holland D., Mattenws B., Rath P.* Credit Suisse Global Investment Returns Yearbook 2015 // Credit Suisse Research Institute, Switzerland, 2015; *Dimson E., Marsh P., Stainton M., Wilmot J.* Credit Suisse Global Investment Returns Yearbook 2016 // Credit Suisse

long-term equity risk premiums for different countries, including Russia, as the difference between the estimated real return on stocks and the estimated real return on government securities. According to their methodology, the equity risk premium is the geometric difference[1] between the return on stocks and the return on risk-free assets. For the latter, the authors use two benchmarks: short-term government bonds and 10-year government bonds. The long-run average for each equity risk premium is calculated over the period starting from 1900, and the medium-run average, over the past 40-50 years. Dimson et al. disclose their data for Russia only in the Credit Suisse Yearbooks for 2014-2018; no data are available for other years.

A more sophisticated approach is used by Damodaran, who estimates country risk premiums (CRP) by adding country premiums to a risk-free rate calculated using the indicators of return on government securities and the volatility of shares issued by local companies.[2]

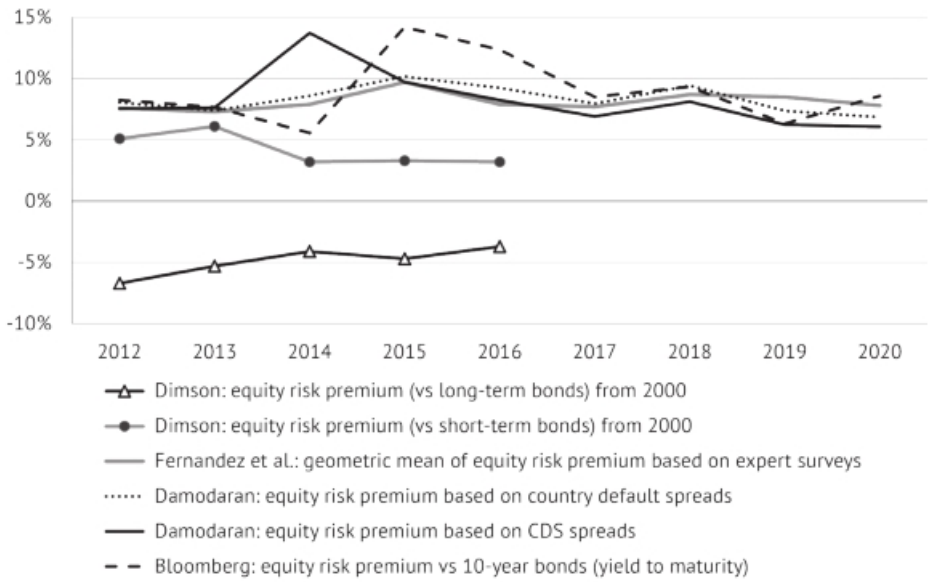


Fig. 10. The equity risk premiums on Russian stocks, based on the most cited international sources, as %, 2012–2020

Source: own compilation based on data from the studies by *Dimson et al., Fernandez et al., Damodaran, and Bloomberg*.

Research Institute, Switzerland, 2016; *Dimson E., Marsh P., Stainton M.* Credit Suisse Global Investment Returns Yearbook 2017 (Summary Edition) // Credit Suisse Research Institute, Switzerland, 2017; *Dimson E., Marsh P., Stainton M.* Credit Suisse Global Investment Returns Yearbook 2018 (Summary Edition) // Credit Suisse Research Institute, Switzerland, 2018; *Dimson E., Marsh P., Stainton M.* Credit Suisse Global Investment Returns Yearbook 2019 (Summary Edition) // Credit Suisse Research Institute, Switzerland, 2019.

1 (1+ Premium) = (1 + Return on stocks)/(1+ Return on bonds) in annual terms.

2 *Damodaran, Aswath,* Country Risk: Determinants, Measures and Implications – The 2020 Edition (July 14, 2020). NYU Stern School of Business. URL: https://ssrn.com/abstract=3653512 or http://

According to the latest survey by Fernandez published at the end of March 2020, the risk premium of Russian stocks fell from 8.5% to 7.8% (*Fig. 11*). The data summary published by Fernandez offers a sociological picture of how different specialists perceive the equity risk premiums in one or other country.

According to data released by the Bloomberg Terminal, the premium, which is calculated as the difference between the return of a stocks index and the yield to maturity of 10-year ruble-denominated government bonds, increased from 6.32% at the end of 2019 to 8.59% at the end of 2020. Such a benchmark is often used in practice as a guide for investors.

Damodaran's indicator, updated as of January 1, 2021, show a decline of the equity risk premiums of Russian stocks from 7.4% to 6.85% based on country default spreads and this country's credit rating; and from 6.2% to 6.08% based on credit default swaps.

The methodology applied by Bloomberg for calculating country risk premiums is based on the difference between the expected market rate of return of stocks and the risk-free rate, which is understood to be the yield to maturity of zero-coupon 10-year government bonds denominated in the local currency. For Russia, the MICEX Russia Zero Cpn 10 Year index is applied as the risk-free rate. The market yield is determined using the dividend discount model (DDM), which is similar to Damodaran's approach; it is calculated as a capitalization-weighted ex ante internal rate of return for each stock. The model is evaluated based on a 5-year consensus forecast for earnings-per-share growth rates.

It is noteworthy that the country risk premium data are posted by the Bloomberg Terminal to the specially assigned information pages together with data on dividend yields and dividend payout ratios (*Fig. 11*). All these indicators are the weighted averages for all the stocks and stock issuers included in MOEX Russia Index.[1]

Over the period from August 2018 through February 2021, the dividend yield on Russian stocks remained relatively high, at an average level of 6–6.5%. According to the year-end results of 2020, it amounted to 5.9%, while the temporary surge in March-April 2020 (when this index jumped to 8.1%) can be explained by the declining stock prices. The movement pattern of dividend payments had been displaying an upward trend since August 2018. The average dividend index for 2020 amounted to 53.7% of net profit, while prior to 2020 it stood at 45% only in May 2019. This means that over the course of 2020, in order to maintain their investment attractiveness, big public companies tried to maintain high dividend yields, although it was becoming increasingly difficult for them to do so, and so they had to noticeably increase the share of their net profit allocated to dividends.

In such circumstances, equity risk premium growth calculated according to the Bloomberg methodology implies that investors expect Russian companies to pay them progressively substantial dividends, even though such payments impose an

dx.doi.org/10.2139/ssrn.3653512/.

1 The historical data for all three indices are smoothed using a 21-day moving average (approximately 1 month), so the final risk premium values in Bloomberg data for the year-end of 2019 and 2020 slightly differ from the values of the same index in *Fig. 10*.

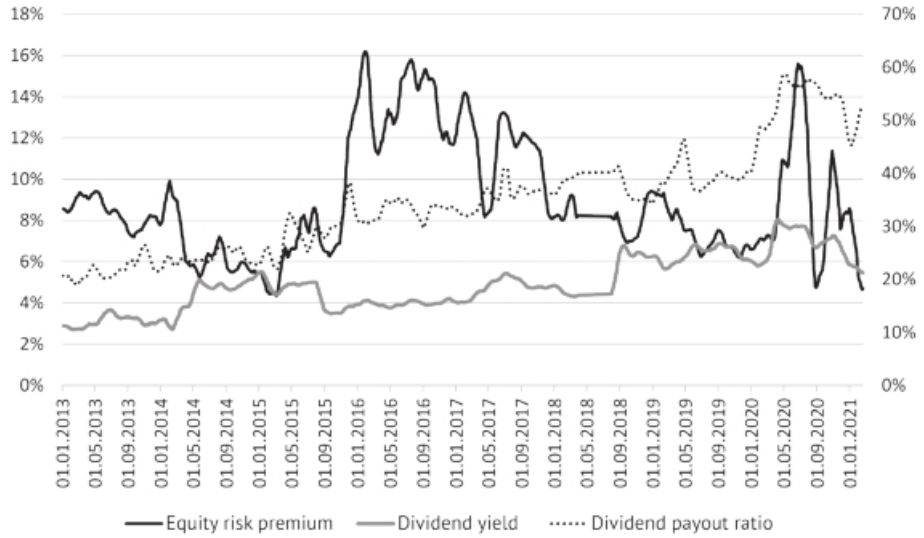


Fig. 11. The equity risk premiums on Russian stocks (left-hand side axis) and additional parameters: dividend yield (left-hand side axis) and dividend payout ratio (right-hand side axis) based on data released by the Bloomberg Terminal, as%, moving average, 2013 to February 2021

Source: own calculations based on data released by the Bloomberg Terminal.

ever-increasing burden on their net profit. However, the actual dividend payout reflected in Bloomberg's discounted cash flow model is volatile, which also results in the high volatility of the expected equity risk premium. Over the year, the equity risk premium according to Bloomberg increased from 6.7% in 2019 to 8.1% in 2020. However, during the year its value varied from 15.5% to 4.7%. In February 2021, it once again declined to 4.7%.

Foreign sources do not always promptly disclose their assessments of Russian stock risks and do not publish in full their calculation methodology. Therefore, based on the methods they use, we have decided to publish our own equity risk premium estimates, with due regard for our own historical data on the movement of financial instruments.

The first group of indicators, **predict risk premiums, or PRP,** are calculated based on the approaches, suggested by Damodaran,[1] to determining future returns

1 According to *Damodaran* (2019), the project risk premium for Russian stocks is calculated as the sum of the current default spread and the implied risk premium for the base country. The implied premium for the base country (USA) is calculated as the rate of return in a two-stage growth model of dividend payouts to investors (dividends + share buybacks), where the first stage lasts 5 years with volatile growth rates adjusted by data in the current consensus forecasts and S & P500 Earnings; and the second stage lasts 'indefinitely' for a long time, with income growth rates equal to the current risk-free rate. Thus, predictive power becomes part of the calculation of the equity risk premium components. The default spread (or country risk premium) can be calculated as the spread between Russian and US 10-year government bonds, or Russia CDS. In our calculations, we introduced an additional factor, which is the ratio between the standard deviation of stocks

and market expectation estimates.[1] It is these indicators that have been most frequently used by investors to calculate the cost of capital and the expected effectiveness of future investment projects. The equity risk premium according to Damadoran consists of the "premium in a base developed market" plus the country risk premium (specific of the stocks issued by a company in a given country. The base market premium is calculated as the discount rate applied to the cash payments to shareholders in the form of dividends and stock buybacks, which grow over a medium-term period of 3-5 years according to market expectations (based on the consensus forecasts released by news agencies, e.g., Bloomberg, Thomson Reuters, etc.), and thereafter at a growth rate that equals the current risk-free rate on 10-year government bonds issued in the base country. The country premium in this approach is determined using the spreads between 10-year government Eurobonds issued by a given country and the bonds denominated in the same currency for the base country, or by using CDS spreads. In addition, in our calculations, the methodology is augmented by the factor of relative volatility of stock returns compared to bond returns in the domestic market of the country under consideration, whereby the country risk premium may be adjusted for the relative equity risk premium.

This group consists of four indicators: PRP1 is country risk premium, determined on the basis of yield spreads of RF and US sovereign bonds denominated in US dollars; PRP2 is country risk premium calculated on the basis of credit default swap (CDS) premiums on RF sovereign bonds denominated in US dollars; PRP3 is country risk premium estimated by adjusting PRP1 for the volatility of Russian stocks; and PRP4 is country risk premium calculated by adjusting PRP2 for the volatility of Russian stocks. PRP3 and PRP4 are the indicators that most adequately determine the predicted value of equity risk premium on Russian stocks.

During crisis periods, the equity risk premium spreads, especially those based on indicators that take into account stock volatility, become quite significant. In December 2018, PRP1 and PRP2 amounted to 19.05% and 19.25%, respectively, while those indicators that were adjusted by stock volatility (PRP3 and PRP4) increased to 33.83% and 34.52%. During another crisis period with an increased ruble volatility in January 2015, while PRP1 and PRP2 stood at 12.39% and 13.11%, respectively, PRP3 and PRP4 rose to 15.34% and 16.46%, respectively.

As shown in *Fig. 12*, during the periods of relative stability in the stock market, the values of all the four indicators of predicted equity risk premium on Russian stocks become close to the same level. Another situation where all the premiums can converge is directly opposite, when stocks and bonds simultaneously become highly volatile, as it happened in 2020. The market downfall coupled with increased risks in March 2020 pushed the premiums upwards: PRP3 to 11.32%, PRP4 to 11.22 %, PRP1 to 10.23%, and PRP2 to 10.17%. By the year-end of 2020, the premiums declined to their levels of late 2019: to 6.12% (PRP1) and 6.5%

and the coefficient of variation of government bonds. Thus, the premium also accounts for the additional risk associated not only with the risk of stocks compared with that of bonds in a 'base' developed country, or with country risk, but also with stock volatility in a given financial market.

1 *Damodaran A.* Equity Risk Premiums (ERP): Determinants, Estimation and Implications, 2019. URL: https://ssrn.com/abstract=3378246

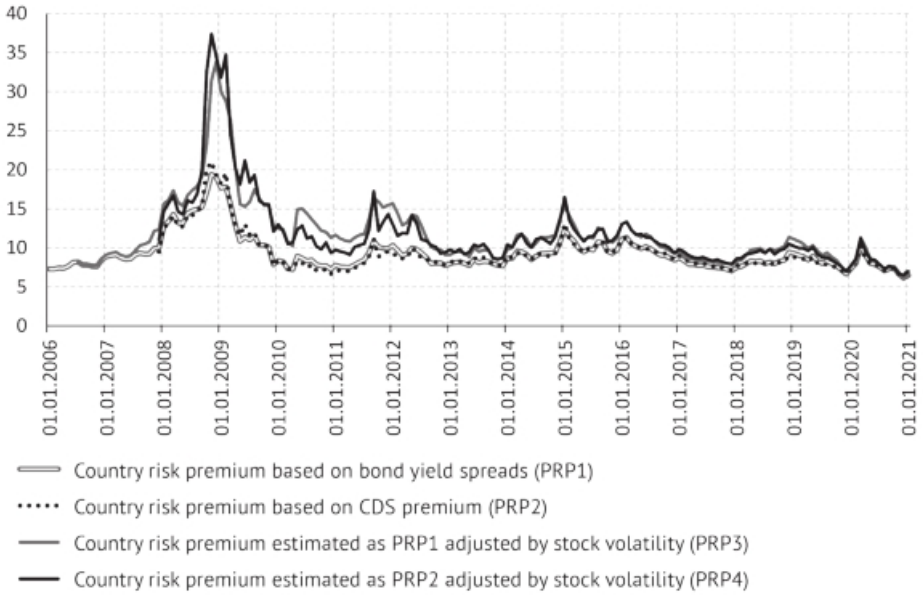


Fig. 12. The current and historical equity risk premiums on Russian stocks, adjusted for their relative volatility in the domestic market, as %, 2006 - January 2021

Source: own calculations based on data released by Bloomberg.

(PRP4 and PRP2). Their decline was caused by the reduced volatility of stocks and bonds, as well as by the shrinkage of spreads that had soared at the peak of the crisis events in every country. The spread in the values of all the four risk indicators towards the end of 2020 once again became very insignificant.

The low risk premium according to Damodaran, all other things being equal, is a positive signal to foreign investors that they should buy Russian stocks.

The second group of equity risk premium indicators consists of the **historical risk premiums (HRP) on Russian stocks** denominated in US dollars relative to short- and long-term portfolio yields of RF eurobonds. The methodology applied in calculating these spreads, without much detail, was described in the book "Triumph of the Optimists" and the reviews released by Credit Suisse. The problem with the data for Russia applied by Dimson et al. is that they are publicly available only for a limited number of years, and rely on a calculation methodology that is not entirely transparent. For these reasons, we decided to calculate HRP1 and HRP2 on our own; these are the historical risk premiums that we calculated on a longer time horizon relative to the long- and short-term yields of RF eurobond portfolios, respectively, and revised on a monthly basis.[1]

1 The risk premium on stocks is calculated as the difference (cleared of inflation) between the return of a stock index and the return of bonds. This estimate is historical, and not predictive. The stock returns on long historical horizons are calculated taking into account the exchange rate and

The calculation of historical equity risk premiums is of practical importance for predicting the movement of premiums and stock returns, evaluating the cost of capital for companies, as well as using it as a benchmark for the required rate of return on investments. A positive long-term equity risk premium is indicative of the relative safety of long-term investments in stocks compared with a risk-free rate (the authors have come to the conclusion that stocks most stably outperform bonds over at least a 40-year horizon). A comparison of premiums across many countries makes it possible to draw reliable conclusions as to the feasibility of global or regional portfolio diversification.

Fig. 13 presents long-term premiums as the difference between the geometric means of the returns of the main asset classes. The resulting premium values are compared with the values from the Credit Suisse reports, where a similar technique is used. When calculating our indicators, we managed to obtain similar results. The stock return is compared with that of short-term eurobonds (the most 'correct' proxy for the risk-free rate) and long-term eurobonds (the most commonly used proxy for the risk-free rate). The premium on relatively short bonds declined on 2019, amounting to 4.6% over the 21-year period from 2000 through 2021. The equity risk premium that since 2008 has been persistently negative relative to the premium on long-term bonds, whose negative value increased somewhat further in 2020, represents an adverse trend that points to the fact that foreign investors do not see any sufficient value growth potential in Russian stocks over long-term horizons. The prevalence of bonds over stocks in terms of yields creates some additional risks for the domestic stock market in view of the forthcoming massive rise in interest rates on the global stock markets in the medium term. This usually triggers a sell-off of bonds by investors in emerging markets, and a switchover to investments in local stocks. However, Russian stocks in this particular case may fail their role of a hedging asset because of their low return-to-risk ratio compared with bonds.

From 2017 onwards, Credit Suisse has no longer included Russia in its consolidated reports, so here, our own extended time series are used instead of the classical calculations by Dimson et al. For the period 2000–2021, the equity risk premium relative to long-term bonds declined on 2019, to -2.7%, which means that RF government bonds have become more attractive for investors than Russian stocks.

dividend yield of a given country's stock market index denominated in the base currency, and thus it becomes possible to compare the indices of different countries, for example, in US dollar terms. One example of such an index is MSCI Russia, which has been followed since December 1994. As a proxy for the risk-free rate, Dimson et al. used both short-term and long-term government bonds. Short-term bonds, according to the authors, are more consistent with the concept of a risk-free asset, and their volatility is lower. However, during the periods of a sudden surge in inflation or other extreme conditions, their cost varies significantly. On the other hand, long-term bonds are often used as a benchmark for calculating equity risk premiums. The benchmark in this case should be the yield of the national eurobond price index denominated in US dollars. In Russia, there is no eurobond index denominated in US dollars with a sufficient historical depth. All the available indexes, as a rule, are compiled either by Cbonds or by foreign agencies (e.g., Bloomberg), and have been followed from the mid-2000s. Our own calculations of eurobond price index enable us also to calculate our own values of historical risk premium for Russian stocks (HRP1 and HRP2).

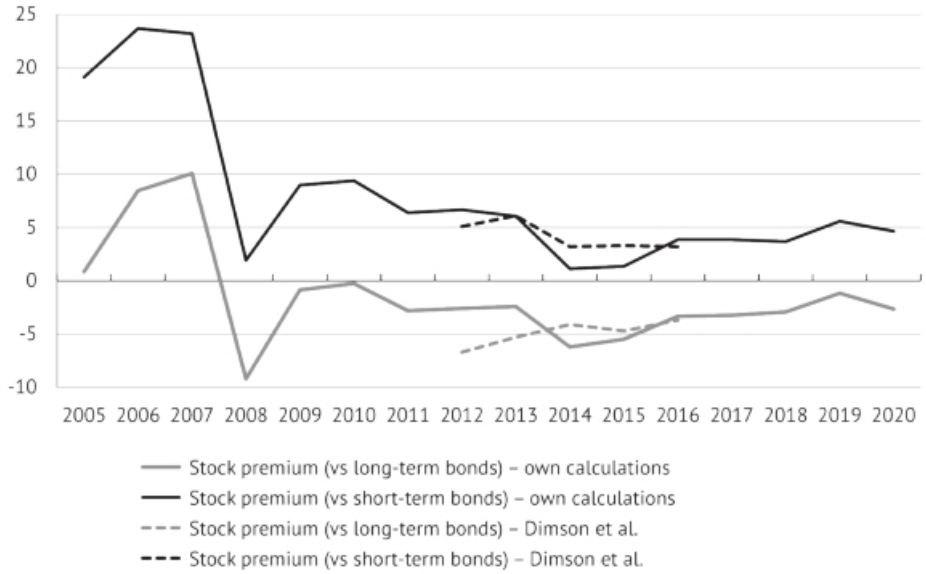


Fig. 13. The long-term historical equity risk premiums vs short-and long-term eurobonds (in US dollars), 2000–2020

Source: own calculations based on data released by Bloomberg.

As can be gleaned from Credit Suisse's reports over several years, most of the major stock markets are characterized, on a long-term horizon, by positive equity risk premiums on stocks relative not only to short-term government bonds, but also to long-term ones, and so in our study, the negative premium on stocks calculated relative to long-term debt instruments on the domestic stock market points to the existence of some stock market problems that prevent investors from receiving their expected amount of equity risk premi um on their investments in more risky assets.

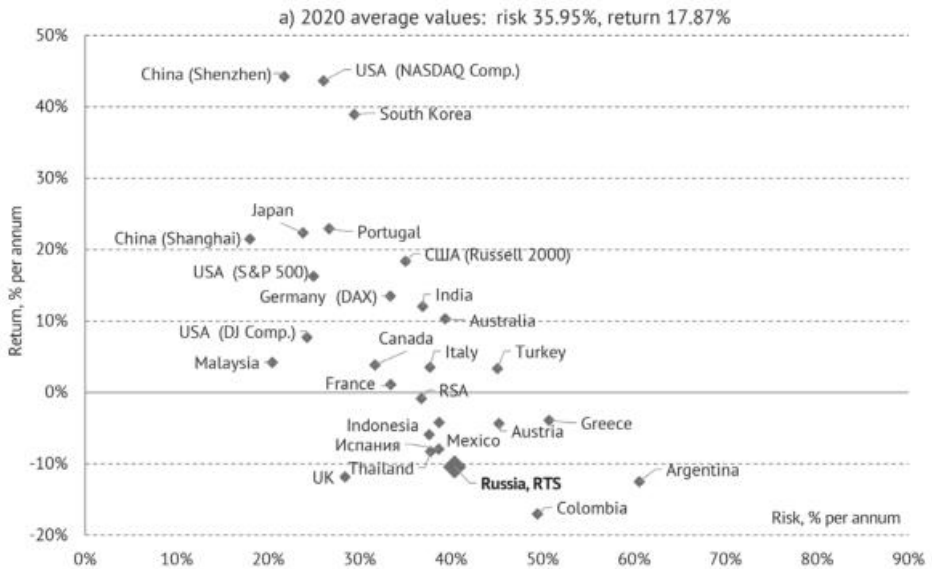
3.1.3. The fundamental characteristics of the stock market

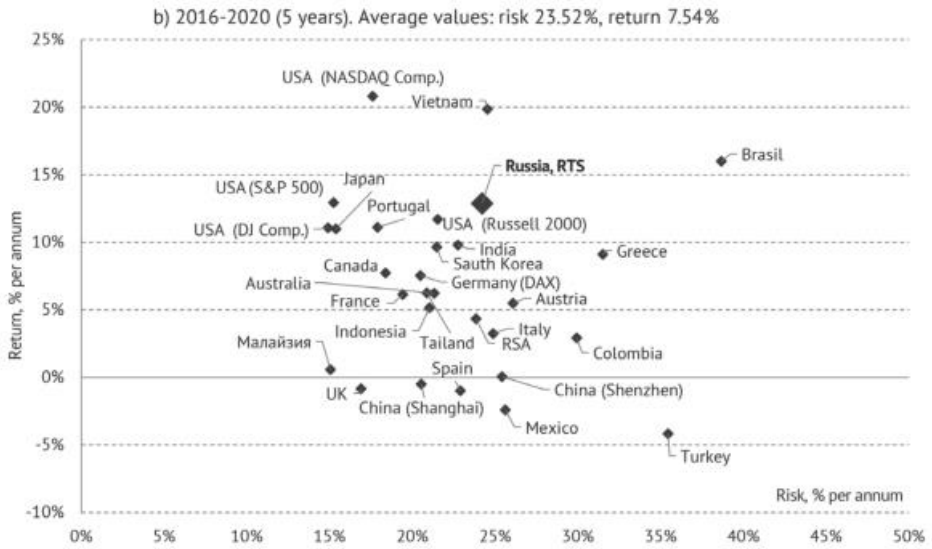
Fig. 14 shows data on the parameters of returns and risks of 31 stock indexes from 27 countries; for the sake of data comparability, the stock indices are recalculated in US dollars. The return and risk assessments of each country's index portfolio were done for 2020, the 5-year period from 2016 through 2020, and the 12-year period from 2009 through 2020.

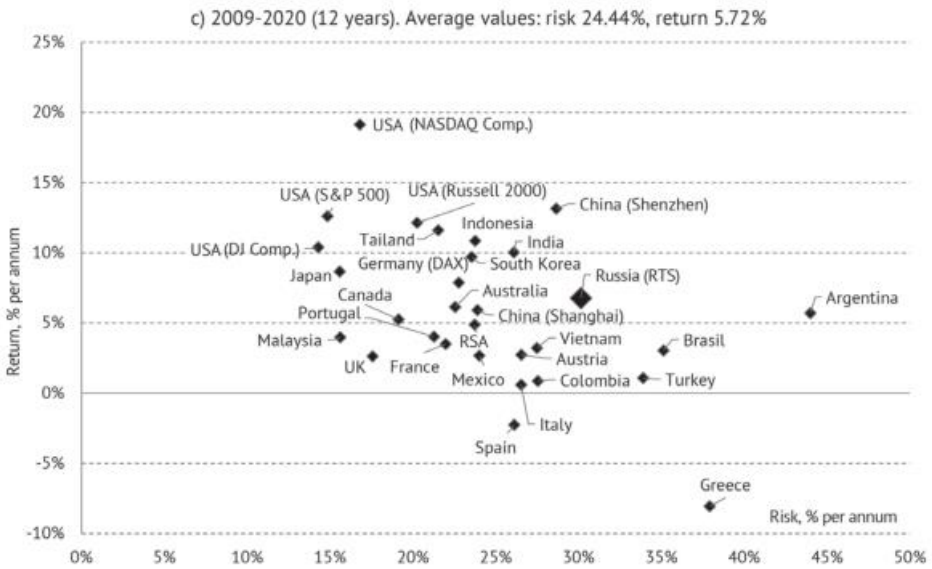
After the successful year 2019, during which the RTS Index, with its dividend yield of 44.9% per annum, was second only to one country in the sample, the year 2020 turned out to be less fortunate. That year, the dividend yield of the RTS Index amounted to -10.4%, while the sample's average stood at 17.7%; only the stock indexes of Argentina and Colombia demonstrated lower forex dividend yields than did Russian stocks. The risk index (standard deviation) of the RTS Index amounted to 40.4%, while the corresponding sample's average was 35.9%.

Higher risk scores were noted only for 5 out of 31 national stock indexes in the sample. Thus, in 2020, the volatility of the RTS Index once again was among the highest relative to the national indexes of other countries with biggest stock markets.

On a 5-year time horizon (2016–2020), the RTS Index demonstrated some decent results in terms of profitability-risk criteria *(Fig. 14b*). Its dividend yield of 12.9% per annum turned out to be almost twice as high as the average return for







* The values of Venezuela's stock index are not shown on the chart due to the scaling limitations of the X and Y axes.

Fig. 14. The geometric mean values of return and risk parameters of 31 national stock indexes for the period from January 2009 through December 2020, in US dollars, on time horizons of 1, 5, and 12 years, as % per annum

Source: own calculations based on data released by the Moscow Exchange and Bloomberg.

that group of countries (6.5%). It was second only to the corresponding indices for US stocks (S&P 500 and NASDAQ), as well as those of Brazil and Vietnam. However, the risk indicator of the RTS Index, which stood at 24.2% per annum, turned out to be above the sample's average of 23.5%; on this medium-term horizon, only 9 out of 31 country indexes had a higher risk indicator than the Russian stock index.

On the 12-year horizon from 2009 through 2020, the average annual return of the RTS Index, which amounted to 6.7%, turned out to be slightly higher than the sample's average return of 6.0%, while its risk ratio of 30.1 % significantly exceeded the corresponding sample's average of 24.4% (*Fig. 14c*). The countries with an unstable financial situation like Argentina, Brazil, Greece and Turkey displayed risk indicators that were higher than those of the RTS Index.

Thus, by comparison with the other competing countries, Russian stocks and their index frequently offer relatively high returns, but they are also characterized by increased risks of yield volatility.

While demonstrating higher financial indicators of net return on capital and dividend yield compared with many other national stock indexes, as well as one of the lowest leverage ratios in our sample, Russian stocks are priced lower than their foreign counterparts, and this underestimation has become a persistent

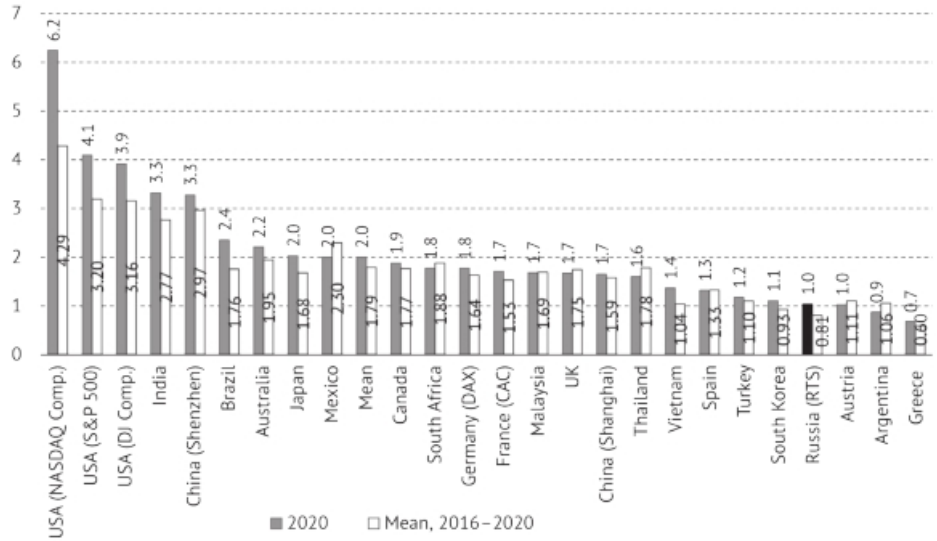


Fig. 15. The financial indicator 'price-to-book per share ratio' as of December 31, 2020 and its mean value for the period 2016–2020 based on 26 national stock indexes

Source: own calculations based on data released by Bloomberg.

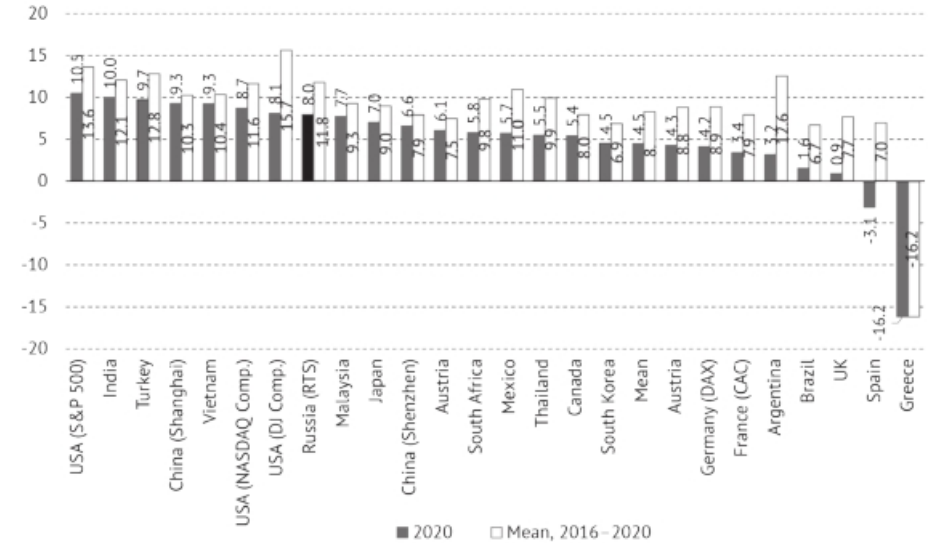


Fig. 16. The financial indicator 'return on equity' (ROE) as of December 31, 2020 and its mean value for the period 2016–2020 based on 26 national stock indexes, as %

Source: own calculations based on data released by Bloomberg.

phenomenon. As shown in *Fig. 15*, out of the 26 national stock indexes,[1] the price-to-book (P/BV) ratio[2] of the constituent companies of the RTS Index was among the lowest in the world. In 2020, it amounted to 1.0; according to the period-end results, during the 5-year period 2016–2020 its average value was 0.8.

The stock prices of Russian PJSCs are also lower compared to their competitors in other countries, even though their return on equity (ROE) ratio is significantly above that of the companies trading in other markets.[3] As shown in *Fig. 16*, in 2020, among the 26 national stock indexes, the ROE of 8.0% for the RTS Index was inferior to only seven national stock indexes (USA, India, China, Turkey and Vietnam.). The average ROE of Russian companies on a 5-year time horizon (2016–2020) stood at 11.8%, being below only two out of 26 stock indexes.

In the context of economic sanctions that restrict a capital inflow from external sources and the relatively high domestic key rate compared with the

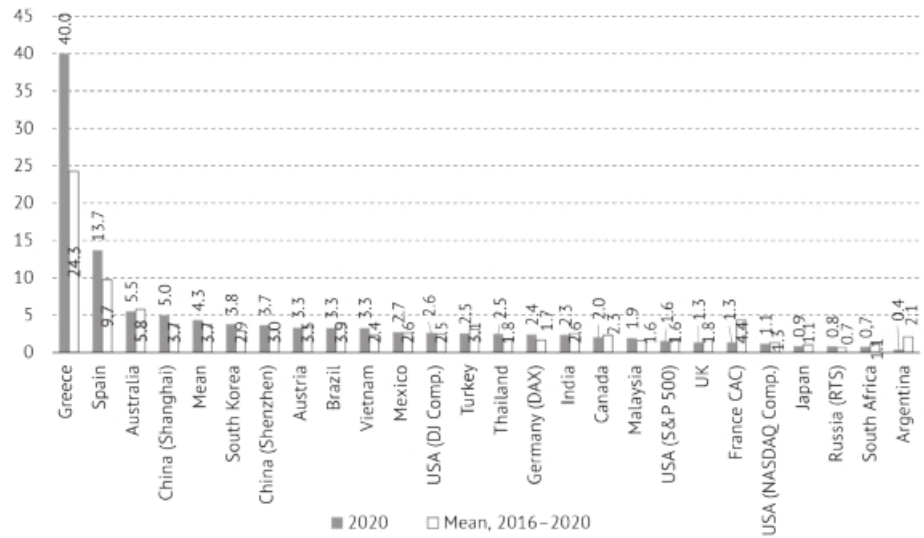


Fig. 17. The financial indicator 'debt/operating earnings' (D/EBITDA) as of December 31, 2020 and its mean value for the period 2016–2020 based on 26 national stock indexes

Source: own calculations based on data released by Bloomberg.

1 Hereinafter, the sample applied in our calculations differs from the sample of 31 stock indexes presented in *Fig. 14*, in that it does not include the national stock indexes of Venezuela, Indonesia, Italy, Colombia, and Portugal, as well as Russell 2000 Index, because of the anomalous values of their financial factors.

2 The P/BV ratio also describes the relative capitalization level of companies. It is the per share ratio between a company's market capitalization and the book value of its net worth, including charter capital, reserves and retained earnings.

3 ROE is calculated as the ratio between the company's net profit and the book value of its net worth, which should not be confused with the company's capitalization, because the latter depends on the number of ordinary shares outstanding and their market prices.

other economies, one characteristic feature of Russia's biggest public companies is their low debt burden. In 2020, among the 26 national stock indexes, Russia's RTS Index constituent companies had the lowest D/EBITDA Ratio[1] of 0.8; only Argentina and South Africa had lower values of this particular indicator. On average for the period 2016–2020, that constituent of the RTS Index was the lowest in the sample, amounting to 0.7 (*Fig. 17*).

One of the positive trends in the domestic stock market observed after the 2008 crisis has been a significant increase in the dividend yield on Russian stocks, from 1.56% in Q4 2009 to 8.12% in Q1 2020, i.e. 5.2 times (*Fig.18a*). The decline in dividend yield in Q4 2020, to 5.40%, turned out to be a temporary measure, typical of many countries where, on the recommendation of national regulators, major stock issuers decided to reduce their dividend payments to shareholders in order to preserve jobs in the situation of waning business activity in face of the coronavirus pandemic.

According to our studies,[2] the main factors behind the growth of dividend yields during these years were the desire of issuers to keep up the investment attractiveness of their securities in the eyes of investors; the pressure put by the RF Ministry of Finance on the biggest state-owned companies (SOE) to make them pay at least 50% of their net profit in the form of dividends; and also, in part, the desire of major stakeholders to receive additional payments from companies in the form of money that they had not invested.

Nevertheless, in 2020, the dividend yield of Russia's RTS Index constituent stocks, as well as their average dividend yield for the period 2016–2020, were among the highest in the sample of 26 national stock indexes (*Fig. 18b*).

In theory, the dividend yield is considered to be the quotient of the dividend payout ratio (as a percentage of net profit) divided by the price-to-earnings (P/E) ratio.[3] This means, e.g., that the growth of dividend yield can result not only from an increasing dividend payout ratio, which is a positive factor for shareholders, but also from a declining P/E ratio in response to a company's falling stock prices relative to its net profit, which points to negative consequences for investors.

The period 2018–2020 saw an unusual trend in the behavior of Russian stocks, when the growth rate of the P/E ratio was above that of the dividend payout ratio (*Fig. 18c*). From 2018 through 2020, the average P/E ratio of the RTS Index increased from 4.4 to 13.3, or 3 times, while the average dividend payout ratio increased from 31.9 to 81, 6%, or 2.6 times. In 2020, the accelerated growth of the P/E ratio relative to that of the dividend payout ratio even resulted in a dividend yield decline in Q2-Q4 of 2020, as can be seen in *Fig. 18a.*

The accelerated growth of both these indicators can probably be explained by the low net profits of the stock issuers and their desire to divert the bulk of their

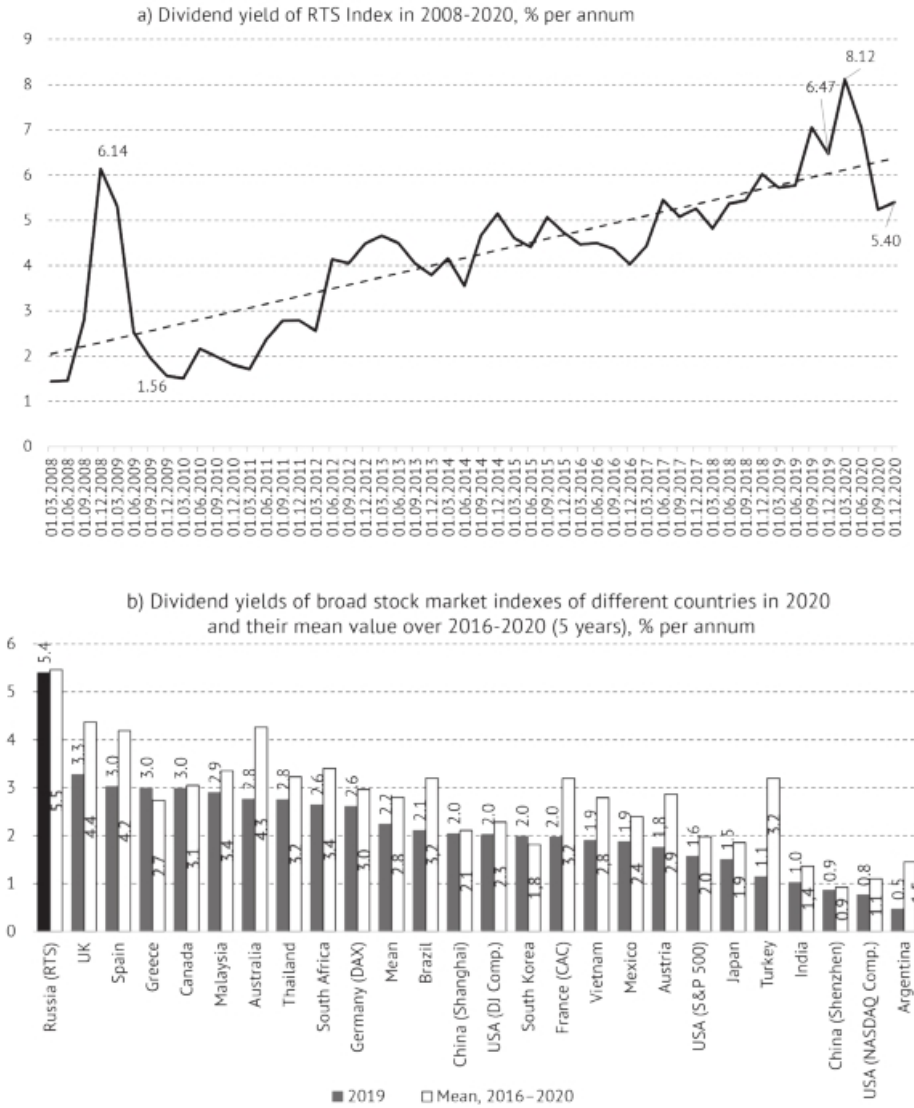
1 The D/EBITDA is the ratio of companies' debt burden to their operating earnings before interest, taxes, depreciation and amortization, thus reflecting their ability to cover their debt by the amount of income generated and available annually.

2 *Abramov A., Radygin A., Chernova M., Entov R.* The "dividend puzzle" and the Russian stock market // Voprosy Ekonomiki. 2020. No. 1. Part 1. P. 66–92; No. 2. Part 2. P. 59–85.

3 This financial ratio describes the relative amount of companies' capitalization, i.e., for how many years the amount of net profit per share pays off its market price.

net profits to the payment of dividends, rather than investing it. However, in any case, this trend in the movement of the two indicators that was observed in 2018-2020 reflected a change in the accelerated dividend yield growth model that was typical of Russian PJSCs after the 2008 crisis, when high dividend yields had been the result of a moderate growth rate of dividend payments (the linear trend line in *Fig. 18c*) alongside stably low P/E ratios.

The chart in *Fig. 18d* explains the phenomenon of high dividend yields on Russian stocks observed over the period 2016–2020, setting the P/E ratio and dividend yield constituents of the RTS Index against those of the other 25 national



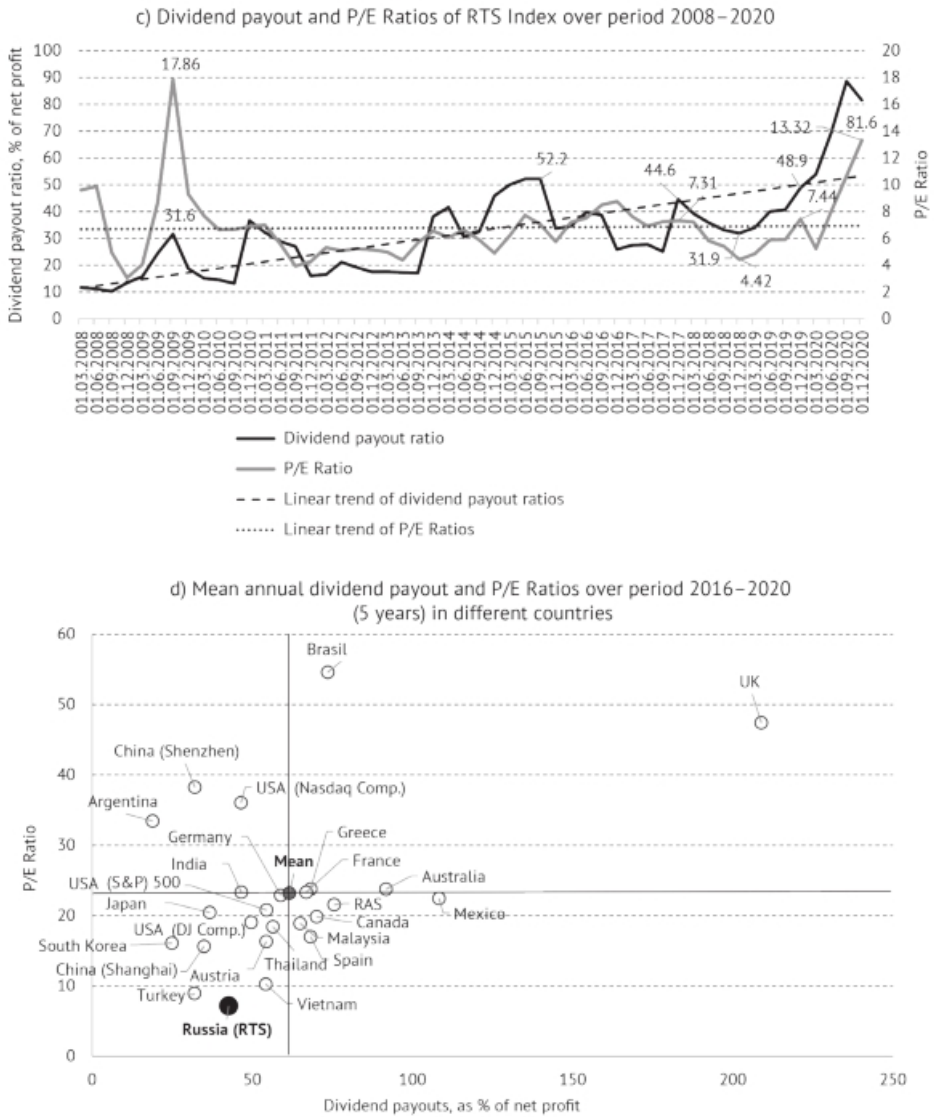


Fig. 18. Analysis of dividend yield on the RTS Index, as % of market stock price, as of December 31, 2020, including the following charts

a) the dividend yield of the RTS Index in 2008-2019 calculated on a quarterly basis, % per annum;
b) the dividend yields of 26 broad stock market indexes of different countries in 2020 and their mean values over the 2016-2020, % per annum
c) the dividend payout (%) and P/E Ratios of the RTS Index calculated on a quarterly basis over the period 2008-2020;
d) the mean annual dividend payout and P/E Ratios of 26 stock market indexes in different countries over the period 2016-2020.
Source: own calculations based on data released by Bloomberg.

stock indices. As shown in *Fig. 18d*, on a 5-year time horizon, the average annual P/E ratio of the RTS Index was the sample's lowest, with below-average dividend payouts. This means that so far, the higher dividend yields of Russian stocks can be explained by their low P/E ratio, rather than high dividend payout ratios.

Over the period 2008–2020, the cumulative equity risk premium on Russian stocks[1] amounted to 186% for the MOEX Total Return Index[2], and to 289.7% for our calculated broad market portfolio index (RMRF) (*Fig. 19*).

The issues of tradable Russian stocks and their issuers have their own specific characteristics. In our classification of stocks, we applied the following criteria: capitalization index; liquidity on the secondary market; P/BV ratio; dividend yield; the size of state-owned stakes; and stock returns over the previous period. These were augmented by a new factor, P/E ratio. A separate stock portfolio was compiled for each of these criteria, to be reviewed on a quarterly basis. This approach makes it possible to evaluate, on a monthly basis, the returns on stocks issues by different groups of companies, each group sharing one or other specific feature.[3] Besides, it becomes possible to evaluate their corporate strategies on the basis of these financial indicators, as well as to plot factor investing strategies, which are widely used by institutional investors all over the world.[4]

The data in the chart show that the use of three out of seven strategies for selecting stock issues - the company capitalization index, the absence of the State as a shareholder, and the dividend yield for the previous period – makes it possible for investors to increase returns on their stock portfolios. Over the period from December 2007 through December 2020, as a result of their orientation to stocks issued by smaller companies and by joint-stock companies with minor state stakes in their charter capital, as well as to stocks with higher dividend yields, investors received 13-year accrued premiums of 226.5%, 137.7%, and 61.3%, respectively, compared with the premiums on stocks issued by big companies, companies with large stakes held by the State, and stocks with low dividend yields.

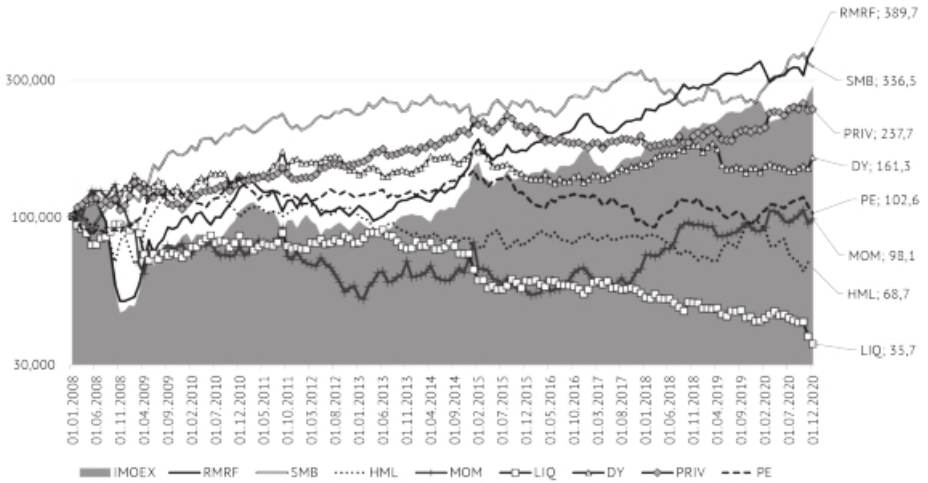
When investing in less liquid stocks or in stocks with higher returns, the investors were not rewarded with premiums in the amount that they usually expected to receive on low-liquidity financial instruments and when they relied

1 The difference between the yield on a market stock portfolio and on a risk-free asset. As market portfolios, we used in our calculations the MOEX Russia Total Return Index (MCFTR) and a broad market portfolio (RMRF) that we compiled using all the stocks traded on the market, where each stock was weighted by the market capitalization index of its issuer (with weight cap of 15%). Unlike the MOEX Index, a broad market portfolio is adjusted by survivorship bias, i.e. the yields on stocks no longer traded on the stock exchange.

2 Hereinafter, the total returns on the MOEX and RMRF Indices are understood as the sum of a proportional rise in the market value of stocks included in the index portfolio and their dividend yield.

3 We publish the regularly updated historical series of returns for each of these stock market factors at the official website of the Center for Institutions Analysis and Financial Markets (RANEPA IAES) at https://ipei.ranepa.ru/en/capm–ru. Similar calculations for US stocks are available at the data source supported by US economist Kenneth French, at https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

4 For more details on the use of factor pricing models in the Russian stock market, see *Abramov, A., Radygin, A., Chernova, M*. Pricing models of shares in Russian companies and their practical application // Voprosy Ekonomiki. 2019. No. 3. P. 48–76.



Note. The MOEX Index is the market equity risk premium on stocks, calculated as the difference between the return of the MOEX Index, including dividend yields (starting from January 2009) and the return of a risk-free asset; the RMRF index is the market equity risk premium on stocks, calculated as the difference between the return on a broad market portfolio, including dividend yields, and the return on a risk-free asset. SMB is a size and value factor, calculated as the difference between the weighted average return on small-cap stock portfolios and that on large-cap stocks (including dividend yields). Once every year, the companies were grouped into 'small-cap' and 'large-cap' ones, with the market cap set at the median. HML is a cost factor calculated as the difference between the weighted average return on portfolios of value stocks and that on portfolios of growth stocks (including dividend yields). The stocks were regrouped into the categories of growth and value stocks once a year according to their book-to-market ratio. MOM is a momentum (inertia) factor calculated as the difference between the returns on portfolios with high and low total returns in the previous 11 months (including dividend yields). The stocks were redistributed between portfolios with high and low total returns once a year, with the quantile caps set at 30% and 70%. LIQ is a liquidity factor calculated as the difference between the weighted average return on low-liquidity stock portfolios and that on high-liquidity stock portfolios, including dividend yields. DY is a dividend yield factor calculated as the difference between the weighted average return on high-dividend stock portfolios and that on low-dividend stock portfolios. The dividend yield is understood as the ratio of the sum of all dividends payable for a calendar year to the stock price at year beginning. PRIV is a state ownership factor calculated as the difference between the weighted average return on stocks issued by private enterprises and that on stocks issued by state-owned enterprises (SOE). A company was treated as a SOE if in its quarterly reports for the previous year the stake held directly or indirectly by the State amounted to more than 10% of its charter capital. PE is a growth factor calculated as the difference in the weighted average return on portfolios of stocks with high and low P/E ratios (including dividend yields).[For further details concerning the methodology applied in calculating each return factor, see the CAPM–RU project on the official website of the RANEPA. URL: https://ipei.ranepa.ru/ru/capm-ru/metodika-rascheta-faktorov]

Fig. 19. The cumulative returns on the MOEX Index, the broad market portfolio index (RMRF), and the investment factors that were influencing them from December 2007 through December 2020

Source: own calculations based on data released by CAPM-ru (RANEPA, IAES). URL: https://ipei.ranepa.ru/capm-ru.

on an 'inertial' investment strategy. No obvious benefits could be derived from investment in value stocks or growth stocks, either.

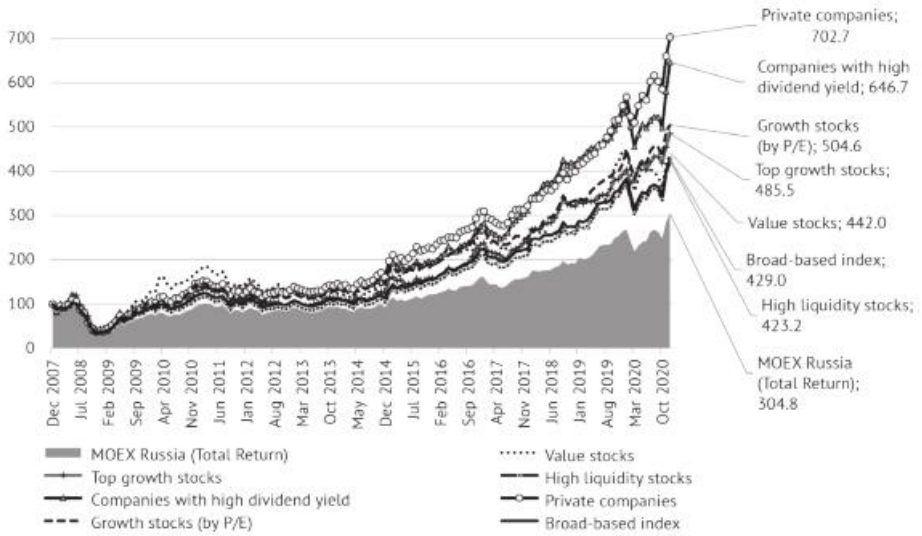


Fig. 20. The cumulative returns on the portfolios of best performing stock categories compared with MOEX Russia Index (Total Return) over the period from December 2007 through December 2020; December 2007 = 100%

Source: own calculations based on data released by CAPM-ru (RANEPA, IAES). URL: https://ipei.ranepa.ru/capm-ru.

Fig. 20 shows only long positions in stocks with the corresponding value of each factor, whose return is higher in the pair of portfolios used to calculate the premium for that particular factor. The figure does not show small companies, which over the period from December 2007 through December 2020 demonstrated a growth of 1,682%. The growth rates of all the other portfolios were slower than those of small companies, but faster than the growth rate of the MOEX Russia Total Return Index. The portfolio of private companies increased sixfold, and the broad stock index rose 3.29 times. The Moscow Exchange Russia Index demonstrated a return of 200% over 13 years.

Thus, an analysis of the fundamental characteristics of Russian stocks has revealed their significant underestimation, which is manifest in their chronically low P/BV and P/E ratios. Meanwhile, by some of their key financial indicators, such as return on equity, dividend yield, and low debt burden, Russian companies do just as well or even better than their foreign competitors. The increased volatility risks notwithstanding, on medium-term time horizons, the returns of Russian stocks also exceed those of many other national stock indices. Moreover, the popular stock risk premium indicators discussed earlier also indicate that, in spite of the economic sanctions, the country risks and investment risks of the stocks issued by Russian PJSCs are at their historic lows due to the domestic macroeconomic situation stability. Against this background, the underestimation of their value by investors has largely been an upshot not so much of the poor performance

Table 4

Annual returns on all long factor portfolios, %, 2007–2020

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Mean return, 2007–2020
Risk free rate of return	-0.1	-12.7	24.8	2.5	-1.2	6.9	-3.5	-20.9	19.7	6.8	5.0	-5.1	12.1	1.7	1.9
State-owned enterprises	11.0	-65.3	145.4	15.9	-19.1	-1.6	-2.4	-3.9	37.9	50.8	-3.8	19.4	32.4	5.6	7.4
Low liquidity stocks	41.5	-60.8	96.0	52.5	-20.4	8.4	4.1	-0.8	16.4	31.5	1.9	14.7	21.9	0.5	8.8
Lowest-growth stocks	14.2	-60.8	171.8	32.2	-24.3	20.1	0.5	-9.4	59.7	22.2	2.4	-7.6	28.0	7.2	9.1
Stocks without dividends	22.4	-64.7	176.1	55.5	-21.2	2.7	4.5	21.0	42.0	27.2	-2.6	-6.2	17.6	-5.8	9.3
Market risk premium	18.9	-56.4	95.1	28.0	-14.9	-2.3	11.1	28.5	13.9	34.1	-3.8	28.3	21.6	13.9	10.4
Stocks with low dividend yield	24.9	-64.3	136.1	12.9	-20.5	9.6	9.0	-7.9	52.6	47.7	-3.6	14.6	49.2	9.8	10.9
Large-cap stocks	13.4	-63.7	133.6	28.9	-16.1	3.4	6.8	1.9	37.3	43.6	0.8	22.1	36.0	14.9	11.2
High liquidity stocks	13.4	-64.1	136.4	26.8	-15.1	3.6	7.0	2.2	39.6	45.0	0.7	22.6	39.7	17.2	11.9
Value stocks (by P/E)	18.7	-64.9	129.8	25.4	-8.3	3.3	7.3	-2.5	48.3	42.1	9.7	11.8	50.4	8.5	12.2
Broad-based index	18.7	-62.7	140.9	31.0	-16.2	4.2	7.4	2.2	37.6	43.2	0.9	22.0	36.0	15.3	12.3
Growth stocks (by P/E)	21.1	-65.1	187.8	42.7	-22.3	4.8	13.5	10.4	27.9	44.1	-7.5	33.7	24.9	21.1	13.8
Growth stocks	11.1	-64.3	172.9	65.9	-23.3	1.1	9.0	10.2	39.7	32.8	-2.5	24.4	25.5	38.8	14.4
Stocks with high dividend yield	8.2	-55.6	132.3	29.2	-3.5	0.8	6.6	8.0	29.8	42.4	13.0	33.4	27.8	21.8	14.9
Top growth stocks	48.0	-55.9	134.1	30.2	-21.3	-5.8	15.4	8.7	27.0	47.4	2.5	33.9	22.2	23.8	15.1
Value stocks	65.2	-66.6	259.8	41.9	-18.6	-2.9	-8.2	8.2	38.3	38.4	-3.4	5.2	72.1	-1.1	15.3
Private stocks	27.4	-61.1	148.5	51.2	-19.4	12.0	10.6	9.7	39.8	37.4	4.6	24.0	37.4	28.3	17.0
Small cap stocks	53.4	-44.3	196.5	60.7	-12.4	14.6	18.5	0.8	47.0	46.4	26.5	-1.3	33.0	56.7	26.7

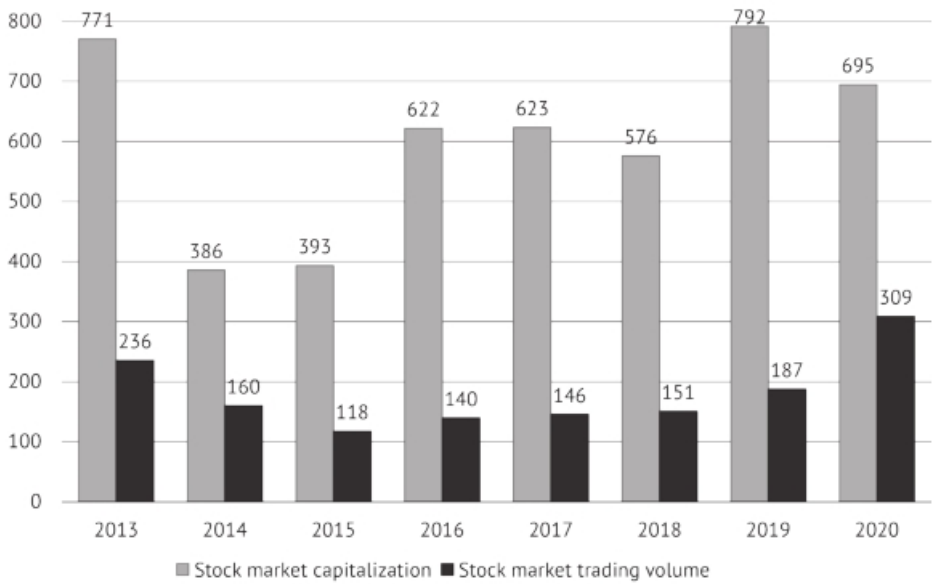
Source: own calculations based on data released by CAPM-ru (RANEPA, IAES). URL: https://ipei.ranepa.ru/capm-ru.

of stock issuers or of the macroeconomic risks peculiar to Russia, but rather of the investment climate issues and the low domestic investment base due to the insufficient development of institutional investors.

3.1.4. The organization of the stock market

In 2020, the total value of traded stocks on the stock exchange market continued to display a positive upward trend, which primarily had to do with an inflow of individual investors. The total volume of market trades in shares on the Moscow Exchange increased to $309 bn, from $187 bn in 2019, or by 65.2% (*Fig. 21*). However, the growing demand for Russian stocks on the part of individual investors was not sufficient enough to increase the total market cap of stock issuers in the tricky situation caused by the pandemic. This index plunged from $792 bn in 2019 to $695 bn in 2020, or by 12.2%.

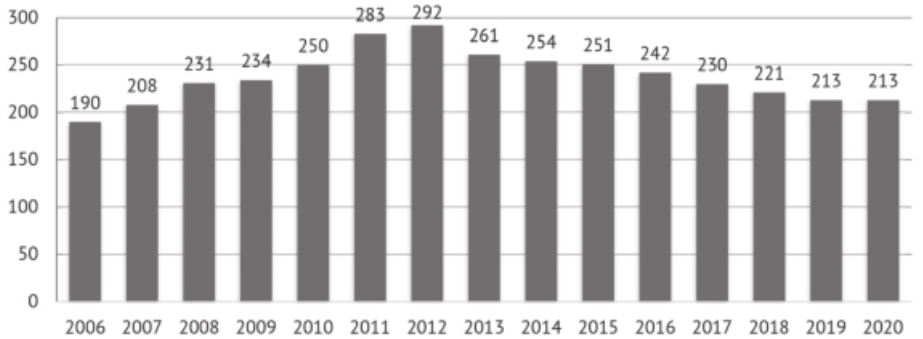
For 8 years already, starting from 2013, there has been a trend towards reducing the number of listed stock issuers on the Moscow Exchange (*Fig. 22*). In 2020, the number of listed issuers (213) remained the same as in the previous



* Market transactions are understood as the auction transactions carried on in an anonymous mode on the Moscow Exchange.

Fig. 21. The capitalization and volume of market stock transactions* on the Moscow Exchange in 2013–2020, billions of US dollars

Source: own calculations based on data released by the World Federation of Exchanges.



* The figures for the period 2006–2011 are based on the listing data released by the MICEX; for the period 2012–2020, on the listing data released by the Moscow Exchange PJSC.

Fig. 22. The number of companies listed on the Moscow Exchange in 2006–2020*

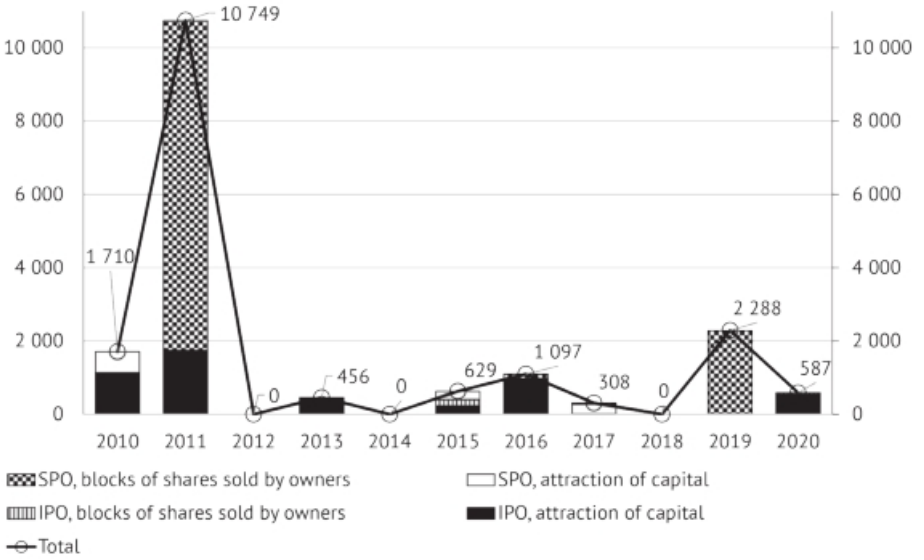
Source: calculations based on data for 2006–2008 taken from NAUFOR's (Russian National Association of Securities Market Participants) factbook 'Russian stock market: 2015. Events and facts'; and on data for 2009–2020 released by the World Federation of Exchanges (WFE).

year. The main problem in this connection is the weak inflow on the exchange of new Russian companies, which is manifest in the long-term stagnation in the IPO market.

Fig. 23 shows data on IPO-SPOs by Russian companies closed on the Russian stock exchanges in 2010–2020, less those closed by offshore companies doing business in Russia on foreign stock exchanges. After the surge in IPO-SPOs in 2011 to the total value $10.7 bn, over the next few years their value rarely exceeded $1 bn; and in 2014 and 2018, no such transactions took place. Meanwhile, the surges in public offering of equity shares in 2011 and 2019 were caused not by an inflow of new capital, but by sales of stocks by their previous owners in a secondary public offering procedure. In 2020, two IPOs were launched on the Moscow Exchange by Sovcomflot and Samolet, to the total value of $587 mn.

The low market activity in the segment of public offering of equity shares in Russia had to do both with the low investment supply (by stock issuers) and the low investment demand (on the part of investors). In the presence of sufficient liquidity in the banking system, it was easier for new stock issuers to borrow from banks, which is somewhat more expensive, but then they are not required to publicly disclose information on their activities. Besides, in the context of an outflow of non-resident investors and underdeveloped domestic institutional investors, stock issuers see fewer advantages in attracting capital through an exchange market in terms of lower borrowing costs.

Through mergers and acquisitions (M&A), stock markets contribute to the ongoing structural changes in the economy. Over the past two years, there has been a global decline in M&A transactions (*Fig. 24*), caused not only by the 2020 pandemic, but also by the constraints on globalization imposed by the



***** An IPO is an initial public placement of stocks on the market. In the WFE statistics, an IPO transaction is understood as the initial sale on a stock exchange of newly issued stocks or bundles thereof owned by their issuer. A SPO (secondary public offering) is a deal of sale of stocks issued by listed public companies on a stock exchange. This type of transaction may also involve newly issued stocks or bundles thereof, which during a SPO already belonged to their previous owners.
Note. The data for 2019 released by the World Federation of Exchanges (WSE) on the volume of IPO-SPO transactions were reduced by the value of SPO of shares in PJSC Gazprom, sold on May 25, 2019 and November 21, 2019 to the total value of $5,067 mn, because these were non-market deals. The WSE's data for 2020 on the volume of IPO-SPOs was adjusted by adding the value of IPOs of equity shares in Sovcomflot PJSC and Samolet PJSC.

Fig. 23. The value of different types of IPO and SPO transactions* on the Moscow Exchange in 2013–2020, billions of US dollars

Source: own calculations based on data released by the WSE.

deteriorating trade relations between some countries and regions. The value of M&A deals shrank from $4.1 trillion in 2018 to $2.8 trillion in 2020, or by nearly a third. In Russia, the value of closed M&A deals plummeted from $42 bn in 2019 to $28 bn in 2020, or by 33.3%.

In addition, in *Fig. 24* and *25*, we present comparative data describing the domestic stock market in terms of its competitiveness, where the indices of the baseline year 2013 (prior to the introduction of economic sanctions and the creation of a financial market mega-regulator) are set against the corresponding indices for 2020 and their average per annum values for the period 2013–2020.

Over the seven years since 2013, the value of M&A deals involving Russian companies declined from $156 bn in 2013 to $28 bn in 2020, or by 82.1%. The average per annum value of mergers and acquisitions over the period 2013–2020 was $56.3 billion, which is 63.9% lower than the corresponding index for 2013.

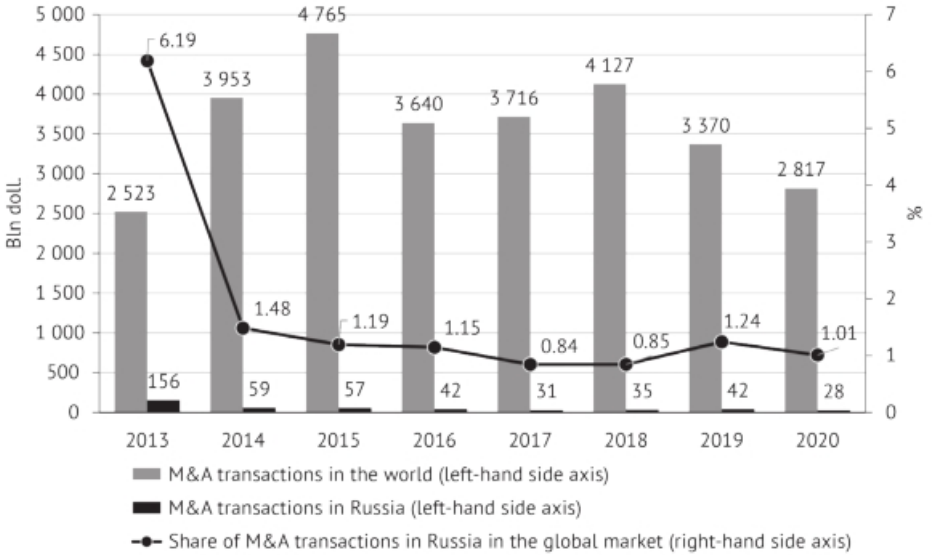


Fig. 24. The cost of mergers and acquisitions (M&A) in the world and in Russia in billions of dollars and the share of M&A transactions in Russia in the total value of similar transactions in the world (%), in 2013–2020

Source: own calculations based on data released by Merger.ru (URL:http://mergers.ru/), Cbonds Group, and the Institute of Mergers, Acquisitions and Alliances (IMAA). URL: https://imaa–institute.org/mergers–and–acquisitions–statistics/.

The share of the Russian segment in the global M&A market shrank from 6.2% in 2013 to 1.0% in 2020, and by 1.7% on average over the period 2013–2020.

The level of development of Russia's stock market does not match the scale of the domestic economy. According to World Bank statistics, Russia ranks sixth in the world by the volume of national GDP assessed in terms of purchasing power parity. By the key stock market development indices, Russia lags behind a much greater number of economies, and over the past 8 years this lag has been further increasing.

As seen from the analysis of the WSE's data presented in *Fig. 25a*, the Moscow Exchange, in 2013, was behind 36 foreign stock exchanges by the number of listed companies, while its share in the total global number of listed companies was 0.51%. In 2020, in terms of listing, the Moscow Exchange was inferior to 37 national stock exchanges, and its share in the world listing stood at 0.47%.

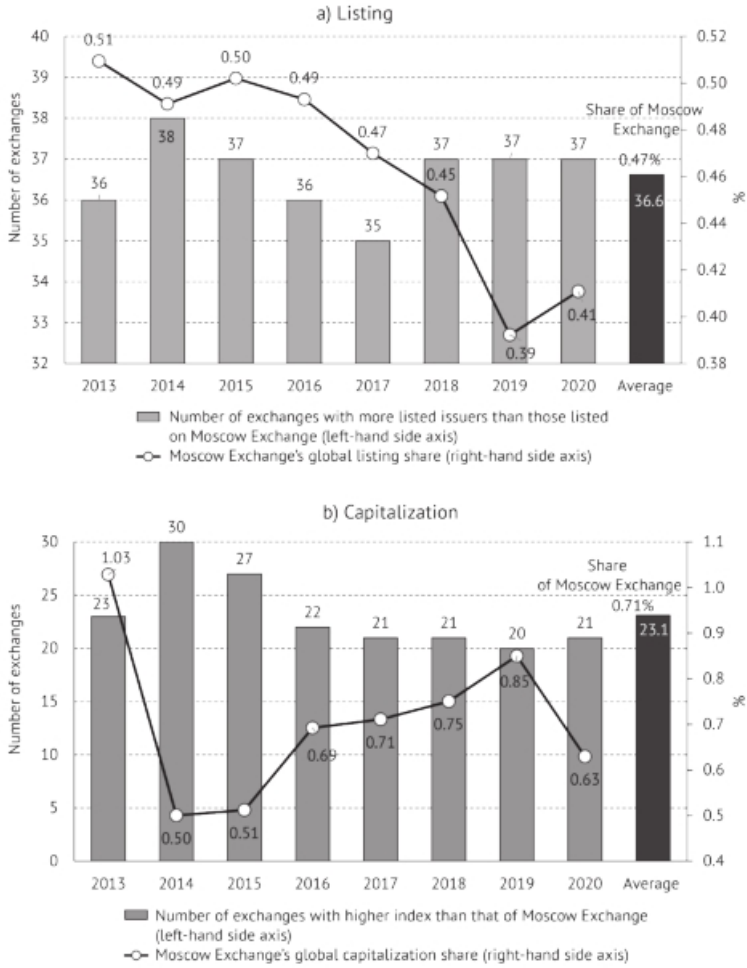
By the capitalization index of listed companies in 2013, the Moscow Exchange was behind 23 foreign stock exchanges, and its share in the global capitalization index was 1.03% (*Fig. 25b*). In 2020, in terms of the capitalization index of its stock issuers, the Moscow Exchange ranked second only to 21 foreign stock exchanges, but its share in the global capitalization index shrank to 0.63%.

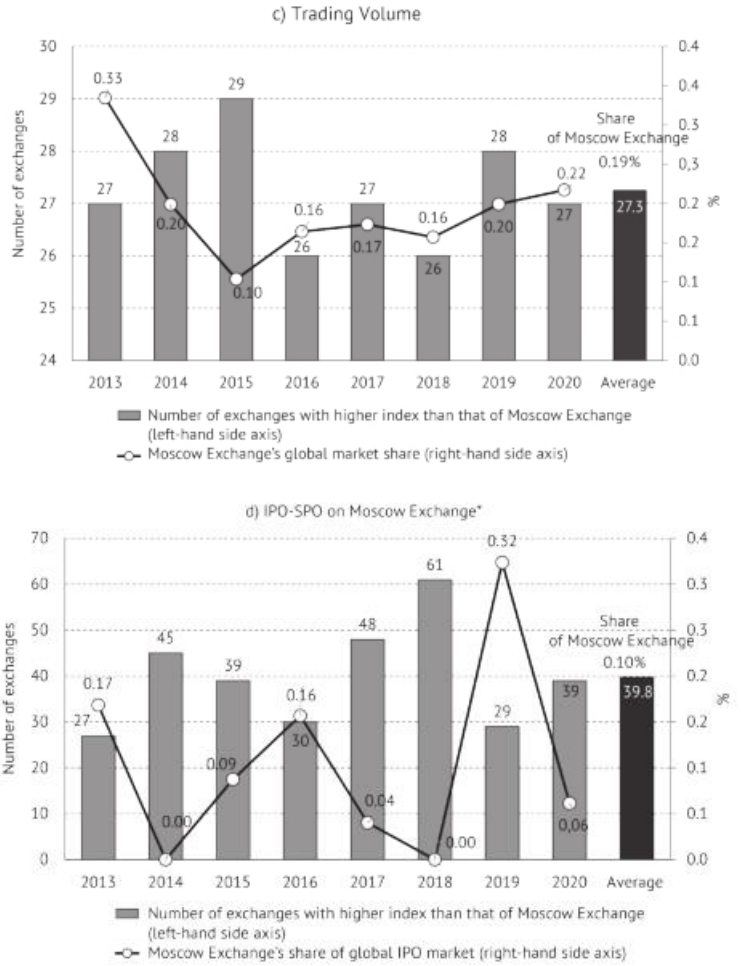
In terms of its stock exchange trading volume in 2013, the Moscow Exchange was inferior to 27 foreign stock exchanges, its share in the global stock exchange trading volume amounting to 0.33% (*Fig. 25c*). In 2020, by its volume of market

stock transactions, the Moscow Exchange also lagged behind 27 foreign stock exchanges, while its share in the global stock market liquidity index shrank to 0.22%.

By its value volume of IPOs and SPOs in 2013, the Moscow Exchange ranked 28th in the world, and its share in the corresponding global index was 0.17% (*Fig. 25d*). In 2020, in terms of public offering value volume, the Moscow Exchange was behind 39 foreign stock exchanges, while its share in the global value volume of IPOs and SPOs declined to 0.06%.

Thus, in 2020, the domestic stock market continued to lag behind the national stock markets of other countries, and in terms of capitalization of listed companies and the value volume of public offerings, this lag increased even further. These processes have been shapes by a variety of factors, such as economic growth slowdown, economic sanctions, heavy regulatory burden, and weakness of





* The 2019 data on the IPO-SPO volume released by the World Federation of Exchanges (WSE) were reduced by the value of a SPO of shares in Gazprom PJSC, sold on May 25, 2019 and November 21, 2019 to the total value of $5,067 mn, because these were non-market deals. The WSE's data for 2020 on the volume of IPO-SPOs was adjusted to include the value of IPOs of equity shares in Sovcomflot PJSC and Samolet PJSC.

Fig. 25. The competitiveness indicators of the Russian stock market in 2013–2020

a) the number of foreign stock exchanges with more listed issuers than those listed on the Moscow Exchange, and the share (%) of Moscow Exchange in the global listing index;
b) the number of foreign stock exchanges with a higher capitalization index of their listed issuers, and the share (%) of the Moscow Exchange in the global capitalization index;
c) the number of foreign stock exchanges with a higher trading volume index than that of the Moscow Exchange, and the share (%) of the Moscow Exchange in the global stock market trading volume;
d) the number of foreign stock exchanges with a higher value volume index of all types of IPOs and SPOs than that of the Moscow Exchange, and the share (%) of the Moscow Exchange in the global value volume of IPOs and SPOs.
Source: own calculations based on data released by the WSE.

institutional investors. So far, the massive entry on the market of individual investors by itself has produced no significant impact on the trends that created the lag between the domestic stock market and its foreign competitors. The stock market needs some profound changes to increase its attractiveness for different categories of investors.

The Russian stock market is characterized by a high concentration of stock issuers in terms of their capitalization index; moreover, this index has been demonstrating an upward trend since the early 2010s (*Fig. 26* and *Table 5*). The combined share of the top 10 PJSCs in the total market capitalization index increased from 61.7% in 2011 to 64.4% in 2020, and that of the top 20 stock issuers of shares, from 77.0% to 80.0%, respectively. Unlike the USA and China, where hi-tech companies are dominant drivers in market capitalization, in Russia the top 10 companies by their market cap index operate in the fuel and energy complex, metallurgy and the banking sector. The hi-tech sector is represented by just one company, Yandex. Lately, five companies - Gazprom, Sberbank, Rosneft Oil Company, Lukoil, and Novatek – have been competing for the first place in the market cap ranking. In 2020, Sberbank had the highest market cap index.

In 2020, the concentration level of the largest stock issuers declined on the previous year: from 82.9% to 80.0% for the top 20 PJSCs, and from 70.1 to 64.4% for the top 10 companies. This means that, in the context of financial crisis and oil and gas price shocks, it was the stock issuers operating in other industries, such as gold mining, telecommunications, retail, energy and some others, that demonstrated a higher market stability. This can be regarded as a signal that in face of the expected

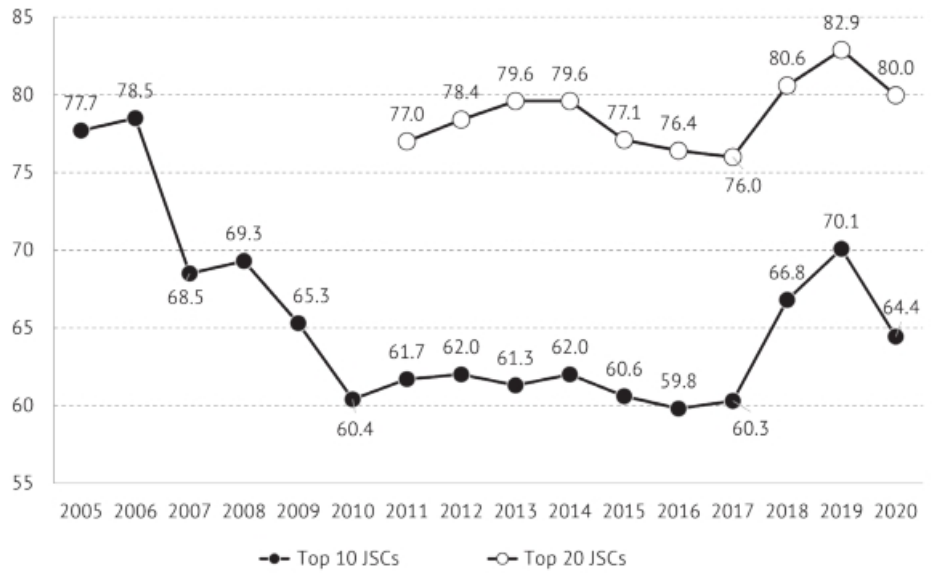


Fig. 26. The domestic stock market cap share of biggest PJSCs, as %

Source: own calculations based on data released by the Moscow Exchange.

Table 5

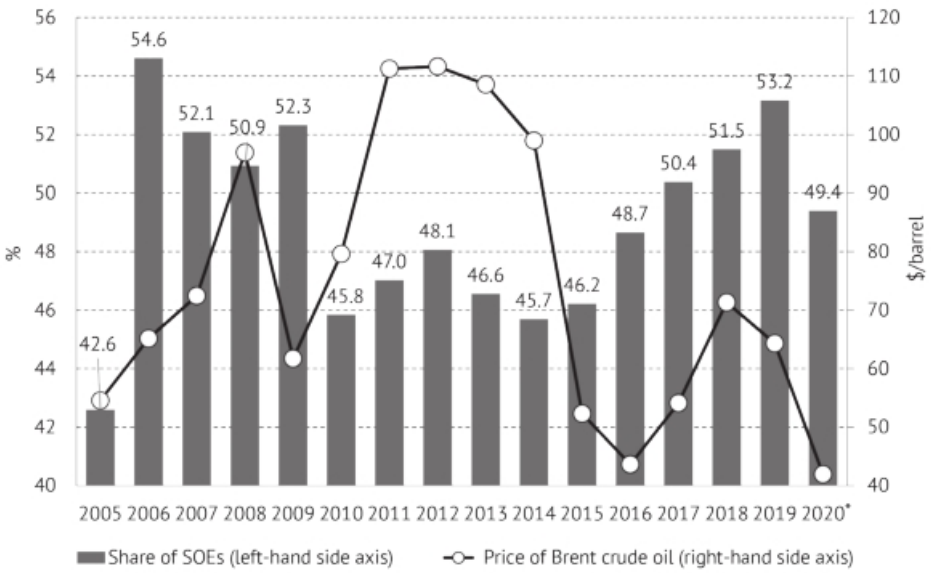
The market cap indices of Russia's top 10 public joint-stock companies (PJSCs) in 2017–2020

Issuer	2018		Issuer	2019		Issuer	2020	
	Capitalization, billions of rubles	Market share, %		Capitalization, billions of rubles	Market share, %		Capitalization, billions of rubles	Market share, %
1. Sberbank	4,535	11.4	1. Gazprom	6,077	12.5	1. Sberbank	5,873	11.4
2. LUKOIL	4,017	10.1	2. Sberbank	5,482	11.3	2. Gazprom	5,024	9.8
3. Gazprom	3,739	9.4	3. Rosneft Oil Company	4,776	9.8	3. Rosneft Oil Company	4,620	9.0
4. Rosneft Oil Company	3,629	9.1	4. LUKOIL	4,405	9.1	4. NOVATEK	3,814	7.4
5. NOVATEK	3,431	8.6	5. NOVATEK	3,834	7.9	5. MMC Norilsk Nickel	3,738	7.3
6. MMC Norilsk Nickel	2,059	5.2	6. MMC Norilsk Nickel	3,050	6.3	6. LUKOIL	3,590	7.0
7. Gazprom Neft	1,639	4.1	7. Gazprom Neft	1,995	4.1	7. Polyus PJSC	2,049	4.0
8. Tatneft PJSC	1,588	4	8. Surgutneftegaz OJSC	1,814	3.7	8. YANDEX N.V.	1,634	3.2
9. Surgutneftegas OJSC	959	2.4	9. Tatneft PJSC	1,668	3.4	9. Gazprom Neft	1,507	2.9
10. NLMK	944	2.4	10. Polyus PJSC	945	1.9	10. Surgutneftegaz OJSC	1,286	2.5
Combined cap of all issuers on Moscow Ex-change	**39,716**	**100**	**Combined cap of all issuers on Moscow Ex-change**	**4,879**	**100**	**Combined cap of all issuers on Moscow Ex-change**	**51,428**	**100**
Combined cap of Top 5 issuers	**19,351**	**48.7**	**Combined cap of Top 5 issuers**	**24,574**	**50.6**	**Combined cap of Top 5 issuers**	**23,070**	**44.9**
Combined cap of Top 10 issuers	**26,541**	**66.8**	**Combined cap of Top 10 issuers**	**34,047**	**70.1**	**Combined cap of Top 10 issuers**	**33,137**	**64.4**

Source: own calculations based on data released by the Moscow Exchange.

long stagnation of oil and gas prices, a steady growth in the market cap of Russian companies can be achieved only through structural changes across the national economy and the emergence of new leaders from the technology, pharmaceutical, chemical, retail, transportation, finance, and other sectors.

In 2020, there was a change in the upward movement pattern, observed in the 2014–2019, of the market cap share of state-owned companies (SOE). That index declined from 53.2% in 2019 to 49.4% in 2020 (*Fig. 27*). Its plunge does not mean that, in 2020, some significant changes occurred in the ownership structure of the largest companies: the IPO by Sovcomflot had no influence on its status of a state-owned company. This had more to do with the fact that state-owned companies prevailed in the fuel and energy complex, the energy, transportation, and banking sectors, which were more prone to be affected by financial crises and deteriorating world commodity markets. After the 2008 crisis, the market cap share of SOEs typically increased during the periods of rising oil prices (in 2010–2012 and 2016–2018), and declined alongside falling oil prices (in 2013–2014, and in 2020) (*Fig. 27*). Prior to the 2008 crisis, this pattern did not work, possibly because, beside climbing oil prices, the market cap index of Russian stock issuers was also strongly influenced by an inflow of foreign portfolio investments, as well as by structural reforms, such as the reorganization of RAO UES of Russia and the creation of government development institutions.



* The data for 2020 on the market cap share of SOEs are preliminary.

Fig. 27. The relative share of state-owned companies (SOE) in the domestic stock market cap index and the per barrel price of Brent crude oil in 2005–2020

Source: own calculations.

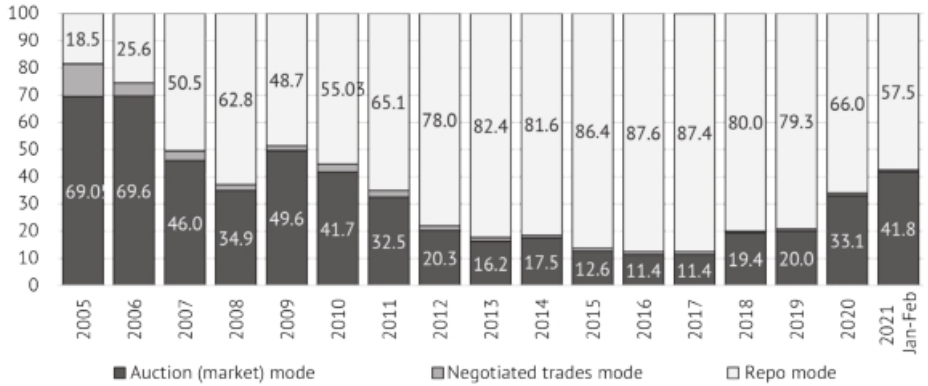


Fig. 28. The structure of stocks trades on the Moscow Exchange's Main Market from 2005 through February 2021, as %

Source: own calculations based on data released by the Moscow Exchange.

The status of a state-owned company enjoyed by Russia's largest stock issuers operating in the fuel and energy complex and the banking sector can be an obstacle to the implementation of structural reforms in the economy, because in the context of a favorable external economic environment the government has lower incentives to change the structure of the national economy, while during a crisis, state-owned companies feel more entitled to receive government support measures than private companies.

In 2020 and over the first two months of 2021, the role of individual investors in boosting stock market liquidity became noticeably more prominent. Investors began to more actively carry out exchange transactions using their own funds, which led to an increased share of market transactions in the structure of trades, from 20.0% in 2019 to 33.1% in 2020, and to 1.8% in January-February 2021 (*Fig. 28* and *Table 6*). This brings down the level of leverage for trading participants and increases the stock pricing mechanism transparency, since stock market prices are predominantly shaped by data on stock trades in the auction mode.

Individual investors, in their role of the main liquidity drivers, gained about the same importance as non-residents (*Table 6*). Thus, for example, the share of non-residents in market stocks trades shrank from 47.5% in 2019 to 44.6% in 2020, while that of individual investors increased, over the same period, from 36.7% to 44.1%.[1] For reference: in 2020, the share of private investors in the US stock exchange market was about 20%; in 2019, 10%;[2] this means that in Russia, the share of individuals in exchange trades is about 2 times higher than in the US market.

1 The Bank of Russia estimates the share of individuals in the turnover of equities and depositary receipts on the stock exchange to be even higher. According to its data for 2020, their share amounted to 47% compared to 34% a year earlier. (Bank of Russia. Review of Key Indicators of Professional Securities Market Participants. 2020. Information and analytical commentary. 2021. P. 16).

2 *Watts William*. Will individual investors stick around after pandemic's 'mind-blowing' stock trading surge? Market Watch on-line, March 25, 2021.

Table 6

The structure of investors participating in market stocks trades on the Moscow Exchange's Main Market from 2017 through February 2021

	2017	2018	2019	2020	February 2021
Non-residents	47.5	51.2	47.5	44.6	45.2
Individuals	35.3	34.7	36.7	44.1	42.8
Dealers	8.9	8.2	8.1	5.8	5.7
Legal entities	5.1	3.8	4.7	3.3	4.7
Trust Managers	3.2	2.1	3.0	2.0	1.6

Source: own calculations based on data released by the Moscow Exchange. [1]

At the same time, the creation of a stable liquid stock exchange market would be impossible without an active involvement of domestic institutional investors. That is why the data presented in *Table 6*, which demonstrate that the share of legal entities in the structure of investors on the Moscow Exchange declined from 15.8% in 2019 to 11.1% in 2020, point to the existence of significant risks there.

3.1.5. The general review of the domestic bond market

The year 2020 was favorable for domestic bond market growth facilitated largely by monetary policy easing which was applied probably for the first time in th[illegible] the

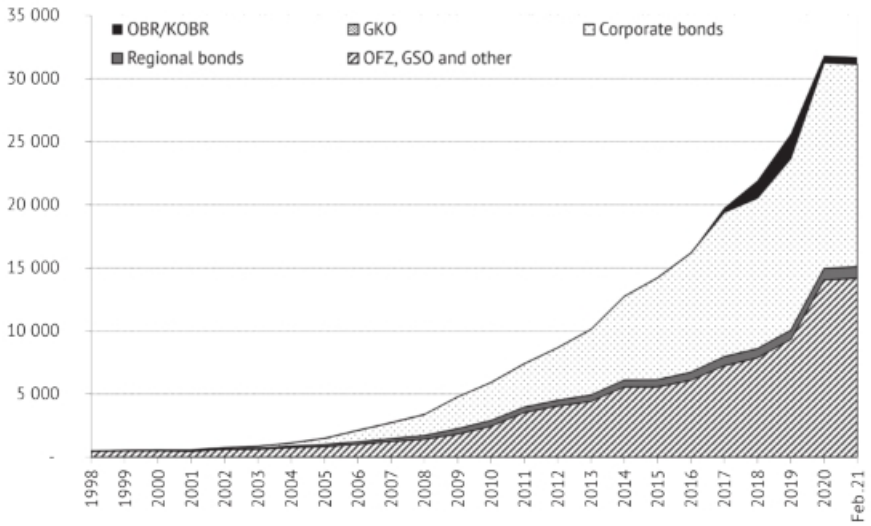


Fig. 29. The volumes of outstanding ruble-denominated bonds, 1998 - February 2021, billion rubles

Source: own calculations based on the data of the RF Ministry of Finance and Cbonds.

1 URL: https://www.moex.com/s2184?fbclid=IwAR1Xl1wazyliXc5_77Q7usAilbS4BwecrqBWQ8XtdlHJ78fvoc0bejFDTLA

Bank of Russia key rate fell from 6.25% per annum to 4.25% per annum. Further, owing to the budget deficit amid the pandemic starting from H2 2020 the RF Ministry of Finance increased sharply its net borrowing plans (with previous debt redemption taken into account) from Rb1.7 trillion a year to Rb4.5 trillion a year,[1] thus facilitating a quick pickup in the federal loan bond market.

In 2020, the value of bond issues in Russia kept growing and amounted to Rb31.8 trillion, an increase of 24.2% as compared with 2019 (*Fig. 29*).[2] There was growth in the value of corporate bonds (CB), including nonmarketable issues from Rb13.6 trillion to Rb16.2 trillion or 19.6%; federal government bonds (OFZs (federal loan bonds), GSO (state saving bonds) and other – from Rb9.3 trillion to Rb14.1 trillion or 50.6%; regional bonds – from Rb0.7 trillion to Rb0.9 trillion or 23.9%. In the meantime, the value of the RF Central Bank's short-term bonds (KOBR) fell from Rb1.9 trillion to Rb0.6 trillion or 70.6%. Amid government borrowings growth, banks reduced liquidity cushion in terms of KOBR in favor of higher yield federal loan bonds.

Owing to low interest rates and growth in federal and regional budget expenditures and companies' costs incurred amid the pandemic, in 2020 OFZs, regional and corporate bond placements increased substantially (*Fig. 30*). So, there was a pickup in the volumes of outstanding corporate bonds from Rb2.6 trillion

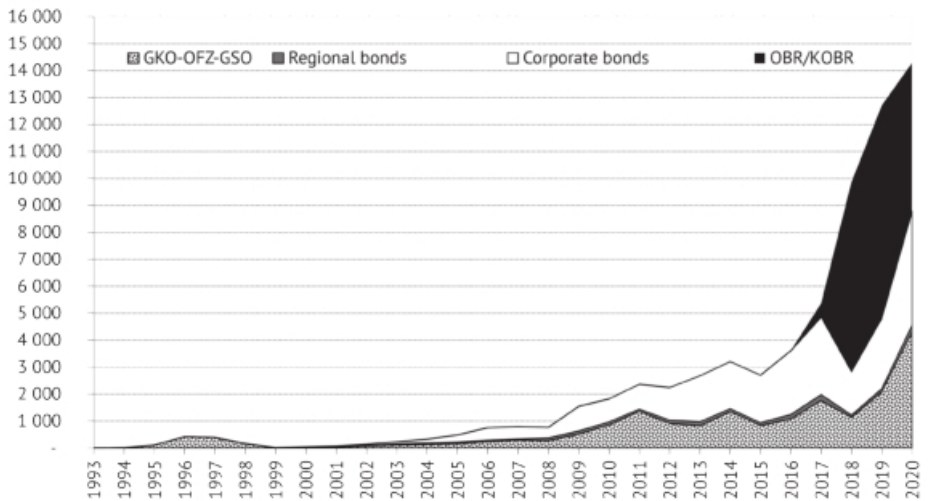


Fig. 30. The volumes of ruble-denominated bond placements in 1993–2020, billion rubles

Source: own calculations based on the data of the RF Ministry of Finance and the Moscow Exchange.

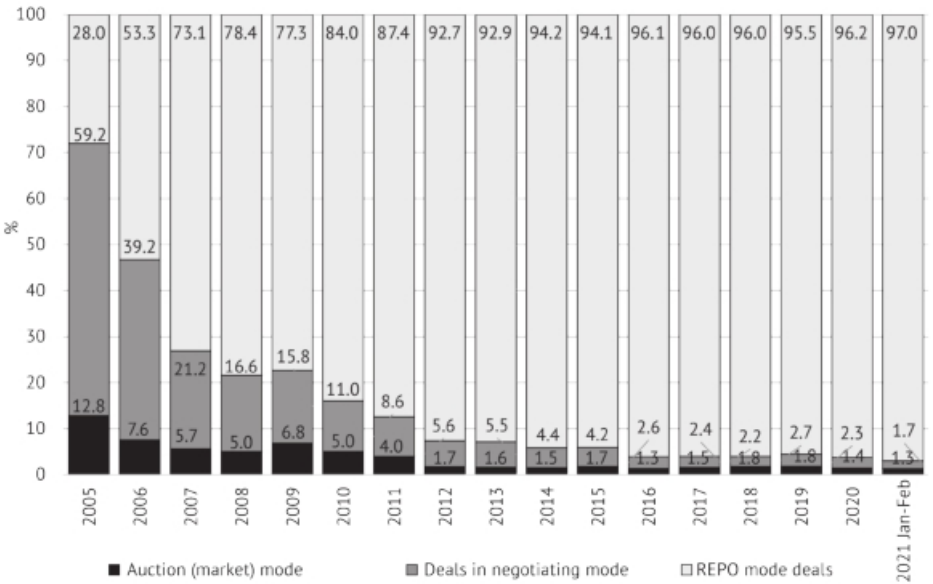
1 The Central Bank of Russia. The Financial Stability Review for 2020 Q2-Q3. Information and Analytical Review. 2020. p. 3.

2 Note that a pickup in the value of outstanding ruble-denominated bonds in Fig. 29 and the value of the placed issues thereof in *Fig. 30* is substantiated to a certain extent by a 16.2% depreciation of the Russian ruble against the US dollar in 2013.

in 2019 to Rb4.2 trillion in 2020 or growth of 61.1%; federal loan bonds – from Rb2.1 trillion to Rb4.3 trillion or 106.0%; regional bonds – from Rb111.8 billion to Rb264.9 trillion or 137.0%. However, the placements of the RF Central Bank's short-term bonds decreased to Rb5.5 trillion from Rb7.9 trillion in 2019 or 30.1%.

The overall value of market deals on the secondary bond market declined from Rb4.23 trillion in 2019 to Rb4.16 trillion in 2020 or 1.8%. This was partially compensated by a pickup in the value of deals transacted in a negotiating mode from Rb6.4 trillion in 2019 to Rb6.9 trillion in 2020 or growth of 7.8%. On the contrary, the volume of the money market where some participants extend loans to others against pledged bond (REPO market deals) increased much more, that is, from Rb227.2 trillion in 2019 to Rb283.4 trillion in 2020 or 24.7%.

So, the secondary market of government, regional and corporate bonds performs less and less the role of the mechanism of redistribution of long-term borrowed resources from less efficient borrowers to more efficient ones and formation of the bond market value, but becomes increasingly the marketplace where bonds are held till the date of redemption with a prospect of receiving by bondholders of an additional premium owing to a commercial use of short-term money loans received against pledged bonds. As seen in *Fig. 31*, the share



Note. REPO deals with bonds include direct REPO with the RF Central Bank, inter-dealer REPO and REPO deals with the central counterparty (REPO-REPO).

Fig. 31. The pattern of deals with bonds at the Moscow Exchange in 2005-February 2021, %

Source: own calculations based on the data of the Moscow Exchange and the VFB.

of market deals in the overall bond trade volumes decreased from 1.8% in 2019 to 1.4% and 1.3% in 2020 and February 2021, respectively. The share of deals transacted in a negotiating mode decreased, too, from 2.7% to 2.3% and 1.7%, respectively. It is noteworthy that the share of REPO deals increased from 95.5% in 2019 to 96.2% in 2020 and the record-high level of 97.0% in February 2021.

The bond market where REPO deals dominate resembles to a great extent motor traffic without any rules. REPO deals do not form securities' market value which sends normally a signal about issuers' credit risks and risks related to intertest rate changes. A lack of an option to sell bonds in the secondary market does not allow bondholders and securities issuers to react in a timely fashion to market changes. In the past few years, the major bond volumes emerged in the market amid excessive cash liquidity and falling interest rates. Changes in market trends, for example, a pickup in the inflation rate and a rise in the key rate may create serious problems to bondholders if they cannot sell bonds promptly in the market.

3.1.6. The basic characteristics of corporate bonds

Late in 2019, the domestic corporate bond market experienced a success euphoria. However, as early as the end of March 2020, Moody's, an international rating agency issued a warning that a collapse of prices of oil and depreciation of the ruble might affect the capital of Russian banks which had a huge volume of debt securities on their balance-sheet.[1] This situation illustrates high volatility and corporate bond risks to investors.

Presented in *Fig. 32* is the comparison of the parameters of yield and risk (standard deviation) of corporate bond indices of 12 different countries, including the Russian IFX Index, on time horizons of 1 year, 5 years and 12 years in 2009–2020.[2] Specifically, in order to ensure comparability of results historic yield series and risks were adjusted with the Russian ruble/US dollar exchange rate taken into account.

On all time horizons reviewed, the IFX index was normally characterized by the highest risk level which is related primarily to high volatility of the Russian ruble exchange rate, rather than the level of yield of the index bond basket. In 2020, the IFX index foreign exchange yield was equal to -8.7% per annum with the average yield on the sample amounting to +6.6%; standard deviation on Russian companies' bond portfolio amounted to 20.2% with the average risk of 9.6%.

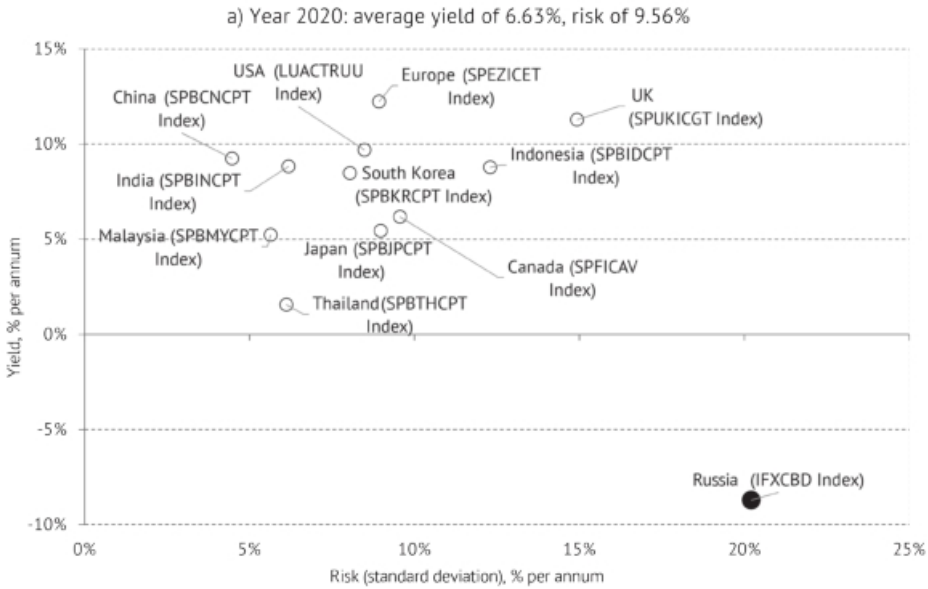
On the 5-year horizon from 2016 to 2020, the IFX Index average annual yield of 10.6% per annum surpassed the average yield of 5.7% on the sample, but the risk of 15.1% of the Russian bond portfolio exceeded by nearly two-fold the average risk of 7.6% on the sample. On the 12-year horizon from 2009 to 2020, the IFX Index average annual yield of 3.2% annually was below the average yield of 4.2%

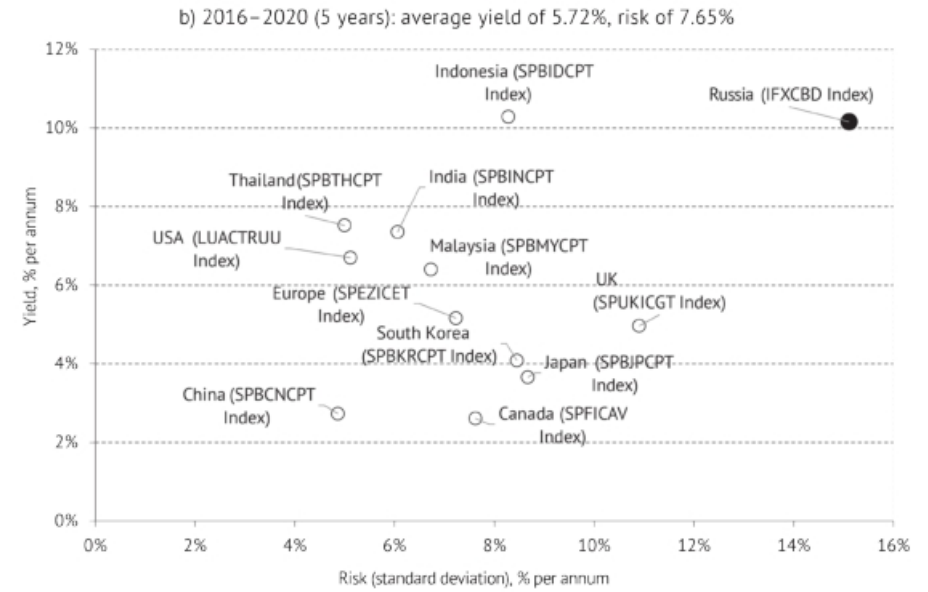
1 *Kazarnovsky P., Koshkina Yu*. Securities Add Vulnerability // The RBK Daily Business Newspaper. March 20, 2020. Issue No.33 (3200).

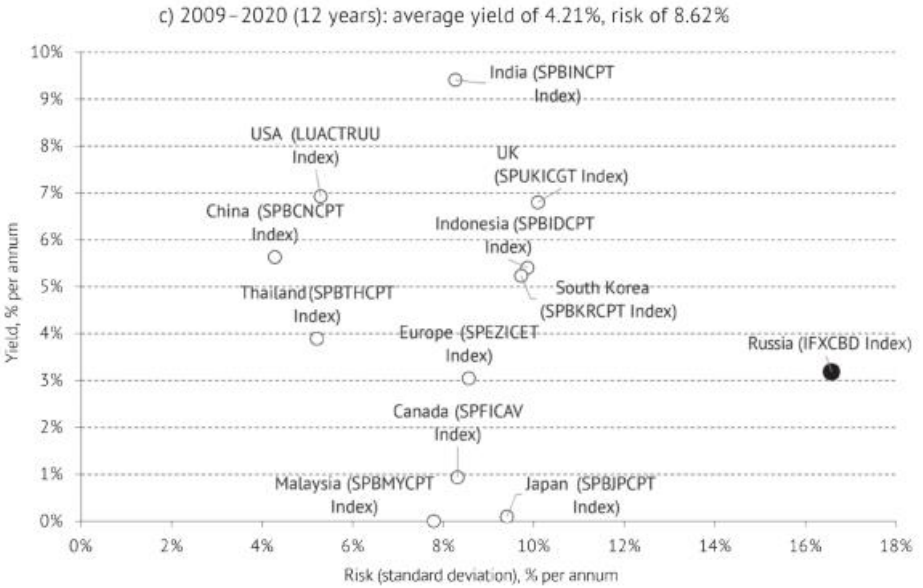
2 A relatively limited size of the sample is substantiated by the fact that in the Bloomberg's information and analytical resource the historic series of corporate bond indices are presented in respect of a relatively small range of countries.

on the sample of countries, while the level of risk exceeded by two-fold again the average risk, that is, 16.6% against 8.6%.

As regards yield-risk parameters in foreign currency, long-term investments in Russian companies' ruble-denominated bonds are much inferior to competitors from other countries both developed and developing ones. The downside of







* For the purpose of comparability, these yield series of respective country indices were translated in US dollars.

Fig. 32. The parameters of geometric mean return and risk of 12 corporate bond indices of different countries* in the period from January 2009 till December 2020 on 1-year, 5-year and 12-year time horizons, % per annum

Source: own calculation based on the data of the Bloomberg and Cbonds.

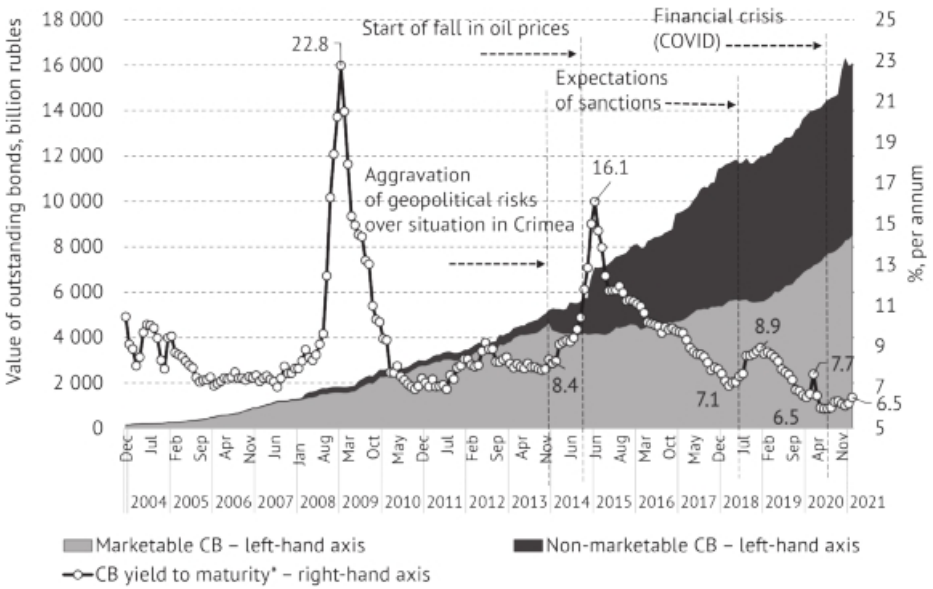
investments in ruble-denominated bonds is the volatility of the ruble exchange rate whose recurrent depreciation makes such investments less attractive to investors. High volatility of corporate bonds reduces their attractiveness to foreign investors. By estimates of the Moscow Exchange, in 2020 the share of non-resident holders of corporate bonds did not exceed 10% of their total volume.[1] Another factor preventing foreign investments in ruble-denominated corporate bonds is the lack of credit ratings - recognized by global institutional investors – of such bond issues as opposed to the situation with OFZs. Starting from 2021, a new factor hindering investments by individuals in public and corporate coupon bonds is the introduction of the personal income tax of 13% on coupon income. Also, from the year 2021 non-residents will have to pay a 30% tax on coupon income of public and corporate bonds issued after 2017.

As seen in *Fig. 33*, after the 2008 crisis the yield of the index of ruble-denominated КОIFX-Cbonds grew now and then on the back of depreciating oil prices and investors' concerns amid geopolitical risks and international sanctions. It is noteworthy that from 2014 corporate bond market growth has been largely

1 URL: https://naufor.ru/tree.asp?n=20436

driven by a pickup in non-marketable bond issues[1] without stock exchange quotations. In 2020, out of the overall value (Rb16.3 trillion) of outstanding ruble-denominated corporate bonds, marketable bond issues accounted for Rb8.3 trillion or 51.1%, while non-marketable bond issues, for Rb8.0 trillion (48.9%).

The corporate bond market entered the year 2020 with record-low yield to maturity which for the IFX index portfolio that included top-class issuers' bonds was equal to 6.11% per annum. During the acute phase of the crisis in March 2020, the yield grew, but at a moderate rate, to 7.65% which can be justified by sufficient liquidity in the market; measures taken by the RF Central Bank to stabilize the bond market (for example, the introduction of a special temporary procedure for accounting illiquid bonds on financial institutions' balance-sheet), as well as declared state support measures for backbone companies. Later, as the key rate was declining in April, June and July from 6.0% to 4.25%, the IFX index yield decreased to 5.96% in July 2020. From August, as inflation expectations



*Yield to maturity (YTM) on IFX-Cbonds portfolio.

Fig. 33. The value of outstanding ruble-denominated corporate bonds and yield to maturity of the IFX-Cbonds corporate bond portfolio, December 2003 - February 2021

Source: own calculations based on the data of Cbonds.

1 As defined by the RF Central Bank, deemed as a non-marketable issue is the situation where the entire placed issue or a larger portion thereof is purchased by the lead bank or companies close to the issuer (The RF Central Bank. The Review of the Russian Financial Sector and Financial Instruments. 2019. Analytical material. 2020. p. 37).

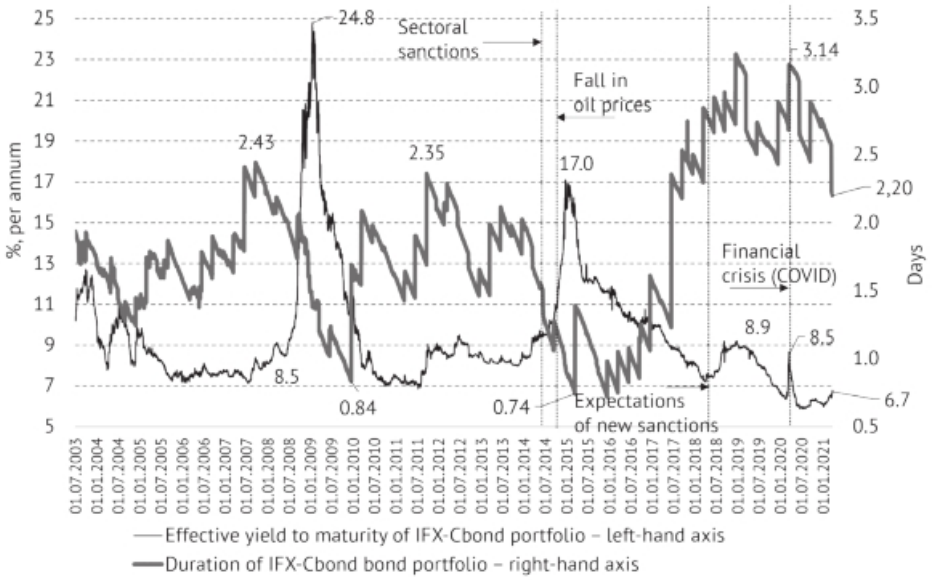


Fig. 34. Dynamics of effective yield to maturity and duration of the KOIFX-Cbonds portfolio, July 01, 2003 – March 25, 2021

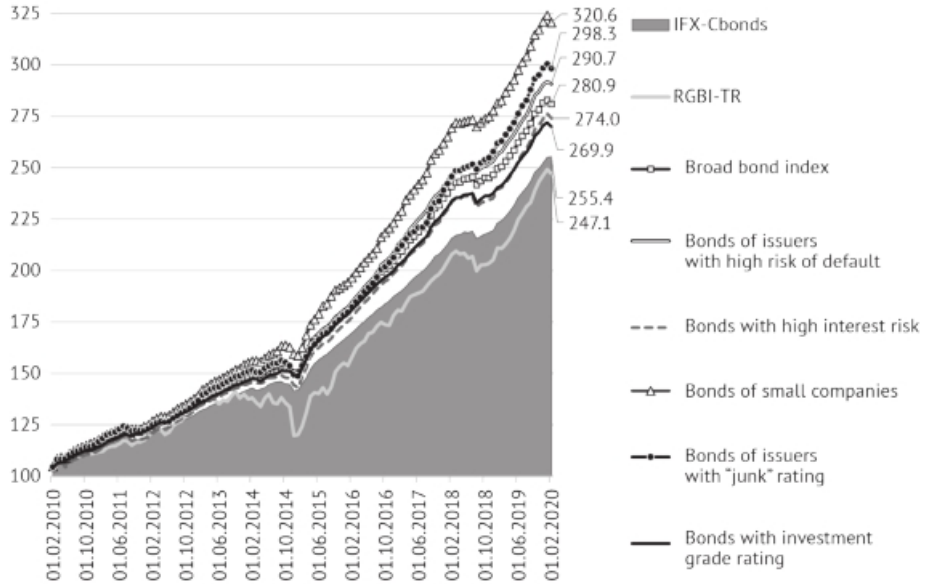
Source: own calculations based on the data of Cbonds.

increased, corporate bond yield started to pick up and amounted to 6.51% per annum in February 2021.

As shown in *Fig. 34*, CB yield to maturity closely correlates with their duration calculated with embedded put options taken into account. In expectation of cuts in the Bank of Russia key rate, investors' demand for longer-term bonds picks up and, on the contrary, in case of a rise in the key rate investors prefer shorter-term bonds. For these reasons, from mid-2015 till the end of 2018 the average duration of the IFX index bonds was explicitly growing, while starting from H2 2018 on the back of a moderate rise in the key rate the duration of bonds became volatile. From H2 2019 till the outbreak of the crisis in March 2020, duration used to pick up again. However, after the crisis till February 2021, the duration of corporate bonds decreased from 3.14 years to 2.20 years. It can be explained by the fact that amid uncertainties brought about by the pandemic and subsequently higher expectations of the upturn in the rate of inflation market participants preferred to invest in more liquid assets, including short-term duration corporate bonds.

3.1.7. CB portfolio factor income

On the corporate bond market, factor strategies have somewhat less advantages as compared with the equity market, however, a number of investment strategies suggesting the selection of securities based on specific parameters provided potential long-term excess return to investors (*Fig. 35*). So, the maximum



Note. All constructed yields of the portfolios are the indices of yield to maturity for relevant investment strategies which take into account par value payments, amortization of bonds, as well as coupon payments; the selection of bonds for the portfolios was based on the threshold value equal to each index median.

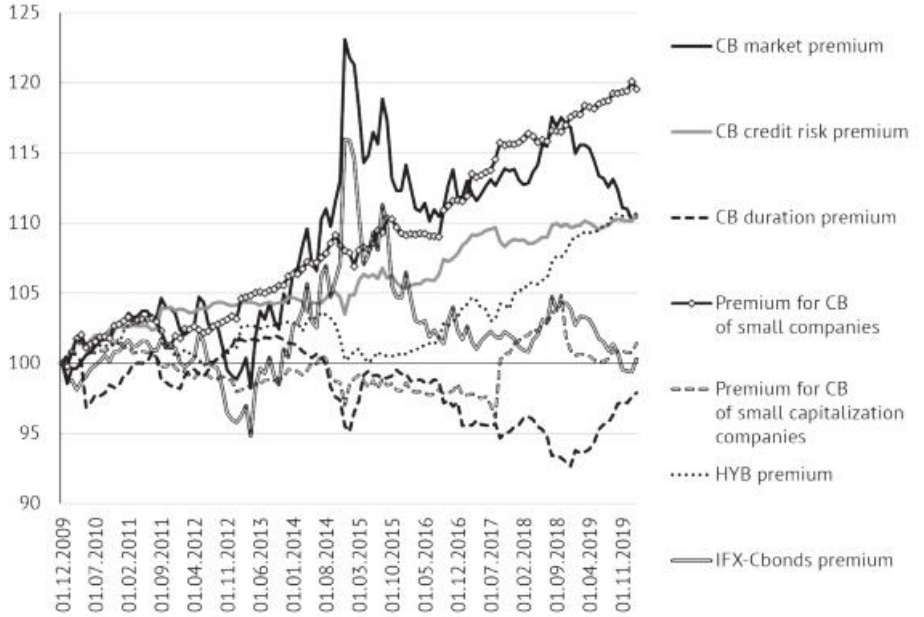
Fig. 35. Yield of the main investment factor strategies on the debt market, 2010 – January 2020 (December 2009 = 100%)

Source: own calculations based on the data of the Bloomberg and Cbonds.

diversification of corporate bonds in the portfolio represented by the broad index calculated by ourselves would have made it feasible to receive a return of 180.9% in 2010-January 2020 as compared with the yield of 155.4% and 147.1% of the standard index of 30 corporate bonds (IFX-Cbonds) and the Moscow Exchange Government Bond Index (RGBI-TR), respectively.

Small companies' bonds appreciated the most (220,6%) which indicates the importance and weight of small companies in terms of risks to investors not only on the equity market, but also on the debt market. High-yield bonds (HYB) or bonds with a "junk" rating earned 198.3%, while bonds of issuers with a high risk of default, 190.7%. Interest risk-based selection of bonds in favor of higher risk ones is less advantageous: the yield was equal to the mere 174%.

It is noteworthy that not all factor strategies yielded significant premiums in 2010-January 2020. The size of excess return for corporate bonds is measured by the difference between average annual return of two factor strategies, while the risk premium, by the spread of yield to maturity (*Table 7*). Premiums dynamics are shown in *Fig. 36*.



Note. The market premium is equal to the difference between monthly markups in the aggregate return index of a broad sample of corporate bonds and that of government bonds (RGBItr). The CB credit risk premium is equal to the difference between monthly markups in the aggregate return index of bonds with a higher credit rating and that of bonds with a lower credit rating. The CB interest risk premium (for duration) is equal to the difference between monthly markups in the aggregate return index of bonds with high duration and that of bonds with low duration. The premium for CB of small companies is equal to the difference between monthly markups in the aggregate return index of bonds of issuers with a small size of assets and that of bonds of issuers with a large size of assets. The premium for CB of small capitalization companies is equal to the difference between monthly markups in the aggregate return index of bonds of small capitalization companies and that of bonds of high capitalization companies. The HYB premium is equal to the difference between monthly markups in the aggregate return index of HYB against that of investment grade bonds. The Bloomberg credit rating scale was used. For calculation purposes, only liquid domestic ruble-denominated bond issues were used.

Fig. 36. Premium across the main factor strategies on the CB market in Russia, 2010 – January 2020 (December 2009 = 100%)

Source: own calculations based on the data of Cbonds and the Bloomberg.

The risk premium for investments in CB amounted to 1.47% per annum in the 10-year period, while the average income spread of corporate and government bonds was equal to 1.19% (*Table 7*).

CB credit risk premium amounted to 1.1% per annum and the spread of high-risk bonds was quite small, too (0.2 p.p.). It can be explained by the fact that unbiased evaluation of issuers' credit quality played a supplementary role in investors' approach to selection of bonds for the portfolio, so there was virtually no request for a higher return for risk.

Table 7

Premium and spreads in terms of bond factors, 2010–2019*

	Premium on factor, % per annum	Spread between factor portfolios, %
CB market premium	1.4696	1.1938
CB credit risk premium	1.0658	0.1973
CB duration premium	-0.3207	0.3152
Premium for CB of small companies	1.9584	0.7666
Premium for CB of small capitalization companies	0.0903	0.6335
HYB premium	1.0888	0.6257

*See note to *Fig. 36*.
Source: own calculations based on the data of Cbonds and the Bloomberg.

Duration as a simpler indicator of bond interest risk gives a prompt signal that the investor's portfolio needs to be reviewed and revaluated. Duration higher values mean that a bond is sensitive to interest rate changes and consequently its interest risk is high. Higher duration bonds on developed markets give premium to investors, thus compensating a higher risk. However, on the Russian market, there is no premium for interest risk or duration; investors probably overlook important information on risks in price setting.

The premium for CB of small companies is the highest one and is equal to 1.96% per annum, while the spread of bonds of small companies, to 0.77 p.p. In their turn, corporate bonds of small publicly traded companies do not provide a significant premium. This points sooner to the existence of the premium for non-public companies as in investors' view publicly traded companies entail a much lower risk. This can be explained by a greater transparency of publicly traded companies, a huge array of update information on them and a more strategic approach to repute-building on the stock market.

The aggregate return premium for investments in HYB amounts to 1.1% per annum in the 10-year period, while the spread, to 0.63 p.p. This factor is identified more clearly than the credit risk factor where the credit risk floating margin between the portfolios is used. This clearly shows that in the past few years investors started to pay attention to issuers' credit ratings though they do not take into account actual credit risk target values; in other words, risk evaluation is rather superficial without examination of securities within the credit rating.

3.1.8. Corporate bond market organization

The number of issuers at the Moscow Exchange corporate bond market exceeds largely that of companies in the listing of securities. The corporate bond market is actively used for raising new funds and refinancing former debts by issuers from various economic sectors.

During quite a long period, the Moscow Exchange saw the reduction in the number of issuers of corporate bonds from 467 issuers in the pre-crisis 2007 to 198 issuers in 2018 (*Fig. 37*). That can be explained not only by modification of

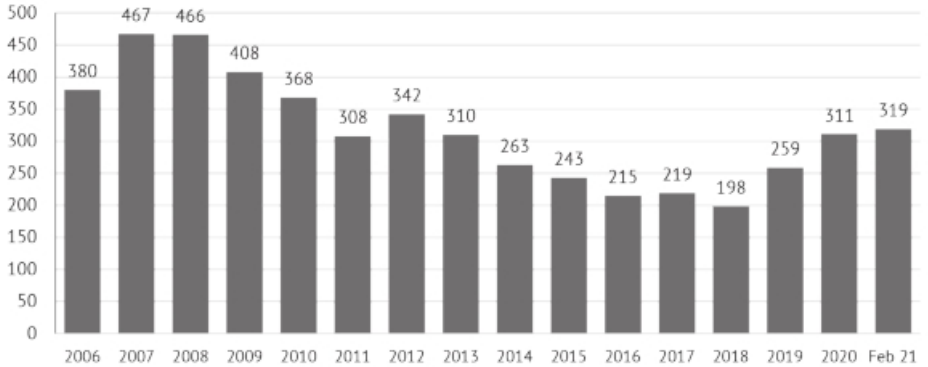


Fig. 37. The number of issuers of marketable corporate bond issues on the Moscow Exchange in 2006–2021

Source: based on the data of the Cbonds bulletin.

borrowing schemes where for issuing corporate bonds large issuers used their subsidiaries, while now they issue them directly, but also the fact that large bond issues had advantages in terms of issuers' costs and listing requirements.

In 2018, amendments were introduced in the securities market legislation to simplify the corporate bonds issuing procedure as regards decision-making in respect of bond issues, reduction in the length of the bond issues registration period, easing of the requirements to the reporting on bond issue results and lifting of limitations on the deadlines for placement of securities. The Stock Exchange took further measures to attract small and mid-sized businesses to the stock market. As a result, in 2019 the number of corporate bond issuers on the Stock Exchange started to grow. In issuers' view, a trend of downturn in the Bank of Russia key rate observed from the mid-2015 till March 2021 (except for a short period in 2018–2019) consolidated corporate bonds' investment appeal.

So, marketable corporate bond issues of 319 issuers floated on the Stock Exchange in February 2021, as compared with 198 issuers in 2018, that is a 1.6-fold increase.

As per the Cbonds data, the year 2020 saw sustainable growth in the segment of high-yield bonds. The volume of this market virtually doubled in 2020 and amounted to Rb40 bn against Rb21 bn in the previous year. It is noteworthy that small companies without credit ratings account for 70% of new HYB issues.[1]

The formation of the market of ESG-financing became a new trend in the corporate bonds development. The new version of the securities issue standards which came into effect on May 11, 2020 included the standards of issue of three new types of bonds: green, social and infrastructure ones. By December 7, 2020, the Moscow Exchange updated listing rules for the specified types of bonds.

1 Cbonds (2020). ROK – 2020 – Despite the Pandemic. Conference Review. URL: http://review.cbonds.info/article/magazines/5431/

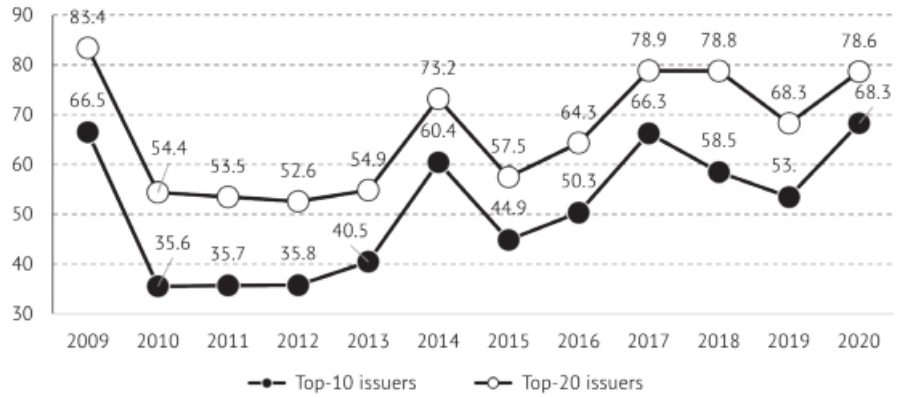


Fig. 38. The share of top-10 and top-20 issuers in ruble-denominated corporate bonds issues, 2009–2020, %

Source: own calculations based on the data of Cbonds.

According to the data of the Moscow Exchange, nine issues of green and social bonds worth Rb23 bn were placed as of that date.[1]

On June 26, the RZhD placed the first issue of irredeemable corporate bonds worth Rb30 bn in the history of the market of Russian publicly traded debts. The overall volume of the irredeemable bond series amounted to Rb313 bn.[2]

Like the domestic equity market, the primary market of corporate borrowings is a highly concentrated one (*Fig. 38, Table 8*). During the coronavirus pandemic, the share of top-10 corporate bonds issuers increased from 53.5% in 2019 to 68.3% in 2020, while in the same period the share of top-20 issuers grew from 68.3% to 78.6%. Large issuers sought to take advantage of the situation to borrow funds amid low rates to compensate revenue losses caused by the pandemic and low prices of oil, gas and other primary products. Top-10 corporate bonds issuers included seven companies with state participation.

Our own calculations based on the broad corporate bonds sample provided by Cbonds point to sustainable growth in the share of companies with state participation (CSP) in the value of outstanding corporate bonds (*Fig. 39*). If at the beginning of formation of the corporate bond market in January 2003 the share of CSP was equal to the mere 22.2%, by December 2020 it increased to 71.0% and this is the evidence of the domestic stock market's evolution into a mechanism supporting primarily state-owned companies, rather than performing a key market function of financing the fast-track development of private companies and businesses.

As illustrated by steady growth in the share of CSP in corporate bonds capitalization, it is easier for state-owned companies to receive an access to funding on the part of banks and NPF where government-controlled entities prevail.

1 Cbonds. The Upside of the ECG–Bond Issue is Large. Cbonds Review, Issue No.1. 2021. URL: http://review.cbonds.info/article/magazines/5413/

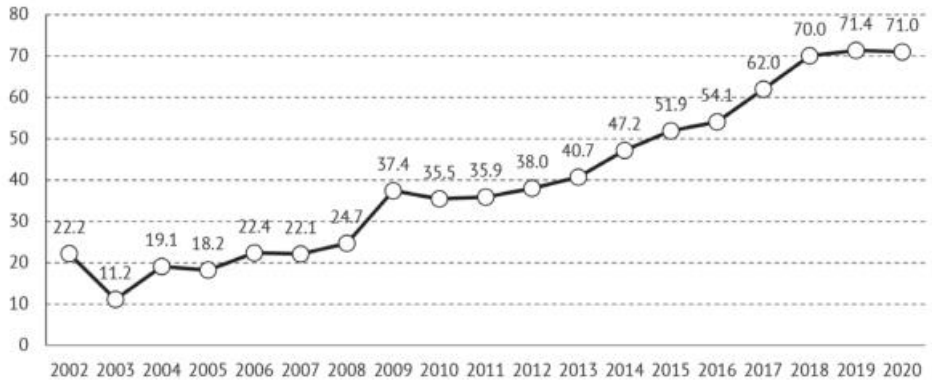
2 URL: http://ru.cbonds.info/news/item/1320403

Table 8

Top-10 issuers of corporate bonds (CB) and their share in the overall value of CB issues

Issuers	2018		Issuers	2019		Issuers	2020	
	billion Rb	%		billion Rb	%		Billion Rb	%
1. PAO SberBank	301	17.9	1. SberBank of Russia	465	16.1	1. Rosneft	815	17.7
2. OOO DOM.RF Ipotechny Agent	137	8.2	2. DOM.RF	253	8.7	2. SberBank of Russia	550	12.0
3. OAO RZhD	85	5.1	3. VTB	172	5.9	3. VTB, including Demetra Holding	489	10.6
4. AO Rosselkhozbank	78	4.7	4. Vneshekonombank	170	5.9	4. DOM.RF	386	8.4
5. OOO Zhiloi Mikroraion	76	4.6	5. RZhD	106	3.7	5. RZhD	353	7.7
6. PAO NK Rosneft	70	4.2	6. Gazprombank	95	3.3	6. GSP-Finance	243	5.3
7. Gazprombank (AO)	67	4.0	7. Rosneft	80	2.8	7. VEB	90	2.0
8. VTB Bank (PAO)	59	3.5	8. MTS	78	2.7	8. Azot (Kemerovo)	88	1.9
9. AO DOM.RF	55	3.3	9. Avtodor	69	2.4	9. GTLK	66	1.4
10. Avtodor state-owned company	52	3.1	10. RUSAL Bratsk	60	2.1	10. Gazprombank	59	1.3
Capitalization of all CB issues	**1674**	**100**	**Capitalization of all CB issues**	**2893**	**100**	**Capitalization of all CB issues**	**4595**	**100**
Capitalization of issues of Top-10 CB issuers	**979**	**58.5**	**Capitalization of issues of Top-10 CB issuers**	**1547**	**53.5**	**Capitalization of issues of Top-10 CB issuers**	**3138**	**68.3**

Source: own calculations based on the data of Cbonds.



Note. The data on the year 2020 are preliminary.

Fig. 39. The share of CSP in the value of outstanding ruble-denominated corporate bonds in 2002–2020, %

Source: own calculations based on the data of Cbonds.

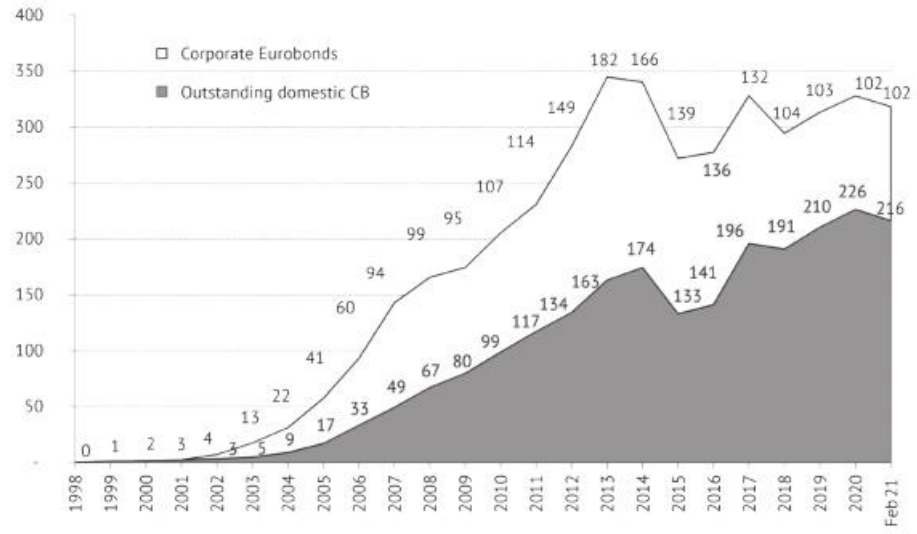


Fig. 40. The volumes of outstanding corporate bonds of Russian issuers in 1998 – February 2021, billion USD

Source: own calculations based on the data of Cbonds and the Moscow Exchange.

In 2018–2020, despite sanctions Russian companies increased their placements on the Eurobonds market. The value of new issues of corporate Eurobonds was equal to $10.9 bn, $13.7 bn and $17.1 bn in 2018, 2019 and 2020, respectively; index growth in 2020 on the previous period amounted to 24.8%.

However, a pickup in the value of corporate Eurobonds issues was not accompanied by changes in the value of outstanding Eurobonds of Russian issuers (*Fig. 40*); it was in the range of $102 bn-$104 bn in 2018–2020. This indicates that new issues of foreign exchange debt instruments were used by companies primarily for refinancing their former debts.

In 2018-2020, the volume of the domestic debt market of Russian companies still exceeded by two-fold the value of their debt on Eurobonds. In US dollar terms, the value of domestic corporate bonds appreciated from $210 bn in 2019 to $226 bn in 2020 or 7.6%, while the capitalization of corporate Eurobonds depreciated from $103 bn to $102 bn or 1.0%. However, in January-February 2021 the value of Eurobonds remained unchanged, while that of domestic corporate bonds fell to $216 bn or by 4.4% relative to the index of 2020.

Overall, a pickup in the share of domestic sources of funding Russian companies in the national currency amid higher securities market volatility is a positive trend reducing issuers' and investors' risks amid possible global financial markets shocks leading to dramatic outflows of foreign portfolio investments from developing countries.

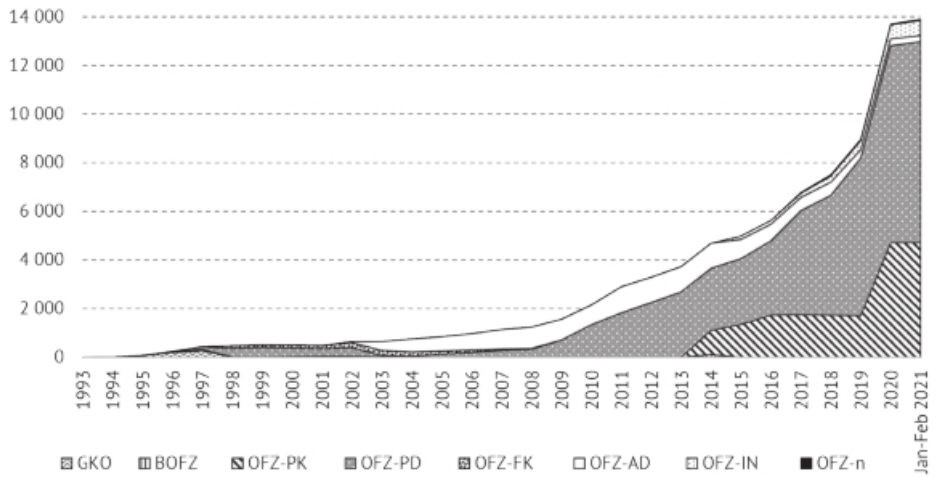
3.1.9. The Government bonds market

In 2020, on the OFZ market the RF Ministry of Finance raised the record-high sum of net borrowings (Rb3.8 trillion) in the past few years equal to the total value of net borrowings in 2016–2019. As of February 2021, the overall OFZ volume amounted to Rb13.9 trillion as compared with Rb9.0 trillion in 2019, a 50% increase (*Fig. 41*).

Sudden growth in the volumes of borrowings on the domestic market started from H2 2020; it was driven by the need of financing the budget deficit amid the suspension of the fiscal rule implying the funding of the budget deficit by means of sale of foreign exchange out of the National Welfare Fund. A pickup in the domestic market of government securities was facilitated by cuts in the Bank of Russia discount rate, excessive liquidity in the banking sector and the RF Ministry of Finance's readiness to offer a market premium on bonds to be placed.

As the main investors of the newly issued government bonds were banks and partially non-banking financial institutions, it was necessary to modify the pattern of OFZs to be issued in favor OFZs with a floating coupon (OFZ-PK), ensuring banks greater flexibility in liquidity and interest risks management. As regards OFZ-PK, the coupon size is pegged to RUONIA, a money market rate which is linked to the Bank of Russia key rate. Earlier, these bonds were popular with non-residents, but with time as the key rate declined, they became less attractive to foreign investors. The overall value of OFZ-PK issue increased from Rb1.7 trillion in 2019 to Rb4.7 trillion as of February 2021; accordingly, their share in the overall value of OFZs grew from 19.1% to 33.9%.

The largest segment of the OFZ market is represented by OFZ-PDs with constant coupon income. As the size of their coupon income is known in advance till maturity, these bonds are an attractive financial instrument for various types



Note. BOFZ is non-coupon federal loan bonds; GKO is government short-term non-coupon bonds; OFZ is federal loan bonds; OFZ-AD is federal loan bonds with amortization of debt; OFZ-IN is federal loan bonds with par value linked to the inflation rate in the Russian Federation; OFZ-PD is federal loan bonds with a constant coupon income; OFZ-PK are federal loan bonds with a floating coupon income "linked" to the RUONIA rate; OFZ-n is federal loan bonds for individuals ("people's bonds").

Fig. 41. The volume of outstanding GKO-OFZ issues in 1993 – March 2020, billion rubles

Source: own calculations based on the data of the RF Ministry of Finance and Cbonds.

of investors, primarily, non-residents.[1] The value of OFZ-PDs increased from Rb6.5 trillion in 2019 to Rb8.3 trillion in February 2021; however, their share in the overall value of OFZs in the specified period decreased from 72.2% to 59.5%.

OFZ-ADs with amortization of the principal debt amount are a convenient instrument for investing pension savings on a volatile market, but create difficulties for the RF Ministry of Finance in public debt managing. As pension savings growth slowed down starting from the "freezing" of pension savings in 2014, demand for this instrument dropped virtually to zero. The value of OFZ-ADs kept falling from Rb345 bn in 2019 to Rb253 bn in February 2021; within 14 months their share in the overall value of OFZs declined from 3.8% to 1.8%.

With taking into account growing inflation risks, a lucrative instrument of the government securities market is OFZ-INs envisaging the indexation of their par value depending on the level of the rate of inflation measured on the basis of the consumer price index. Owing to these characteristics, these bonds are in demand with domestic institutional investors and private persons. The value of OFZ-INs increased from Rb371 bn in 2019 to Rb627 bn in February 2021; their share in the overall value of OFZs increased from 4.1% to 4.5%.

In 2020, OFZ-n bonds often called "people's bonds" because they are oriented at private investors and positioned largely by the RF Ministry of Finance as an

1 *Lu Y., Yakovlev D.* Exploring the Role of Foreign Investors in Russia's Local Currency Government Bond (OFZ) Market. IMF Working Paper, № WP/17/28, February 2017, p. 10.

off-Exchange instrument meant for promoting households' financial literacy accounted for the smallest share (0.3%) of the OFZ market.[1] On July 16, 2020, investors were offered an OFZ-n issue worth Rb15.0 bn. Since OFZ-n bonds are sold via large retail banks, they have to compete fiercely with bank bonds and structured products offered by the same banks to their customers. Further, as per the estimates of the Moscow Exchange, in 2020 the yield of OFZ-n was below that of OFZs.[2] As a result, the value of OFZ-n bonds kept declining from Rb64 bn in 2019 to Rb43 bn in February 2021; within 14 months their share in the overall value of OFZ decreased from 0.7% to 0.3%.

With introduction of the personal income tax of 13% on coupon income of all bonds from January 1, 2021, OFZ investment appeal diminished for individual investors. In new OFZ-n issues, the RF Ministry of Finance offers investors an additional premium for compensation of personal income tax-related losses.[3]

Within a long period after the financial crisis starting from the mid-2000s, the Russian Federation pursued the policy of advanced growth in borrowings in rubles on the domestic market as compared with the buildup of debts in foreign currency (*Fig. 42*). In 2006, the value of the Russian Federation's domestic and external debts became the same and amounted to Rb38 bn each. After that the

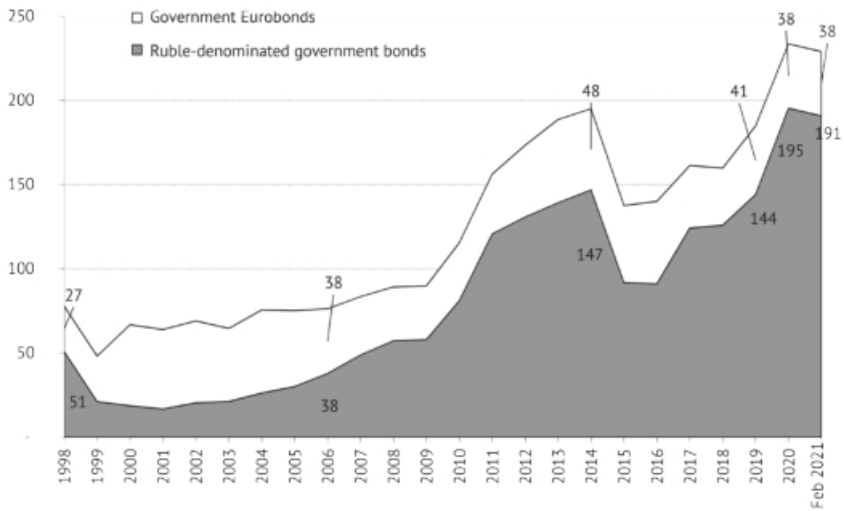


Fig. 42. The volumes of outstanding domestic public bonds and Eurobonds of the Russian Federation, 1998 – February 2021, billion USD

Source: own calculation based on the data of Cbonds and the Moscow Exchange.

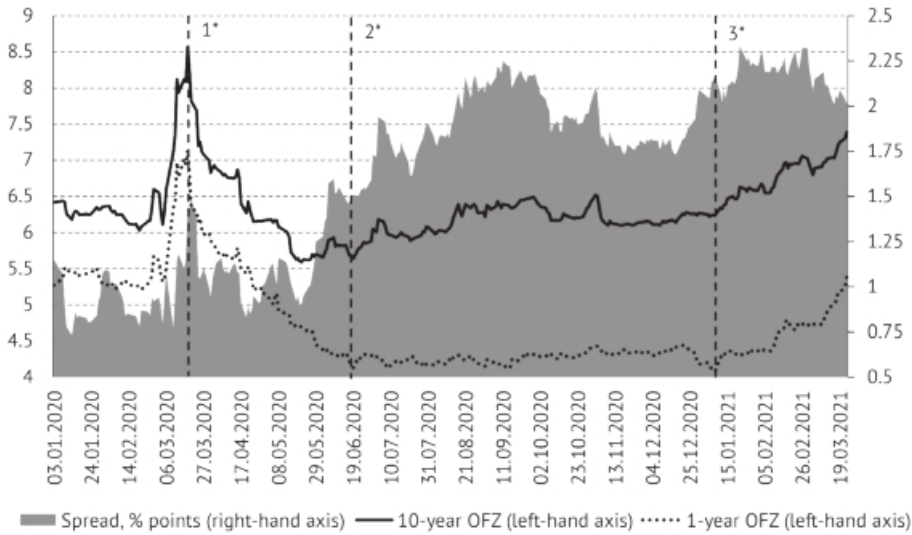
1 *Butrin D., Kassin P.* Purchasing of Experience: The Ministry of Finance has Made OFZ-n a Part of the System of Family Financial Planning // The Kommersant. Dengi. September 25, 2019. Issue No.39.
2 URL: https://place.moex.com/useful/dohodnost-obligatsij?list=vse-pro-obligatsii#a3
3 URL: https://minfin.gov.ru/ru/perfomance/public_debt/internal/ofz-n/current/?id_65=132412-informatsionnoe_soobshchenie_o_nachale_razmeshcheniya_ofz_dlya_fizicheskikh_lits_vypuska__53007rmfs

value of ruble-denominated domestic bonds (OFZ) started to grow faster than that of external borrowings.

Amid the pandemic, the value of outstanding OFZ increased from $144 bn to $195 bn or by 35.4%, while the Russian Federation's debt on Eurobonds shrank from $41 bn to $38 bn or by 7.3%. As a result, the share of ruble-denominated instruments in the overall value of the public debt increased from 78.0% in 2019 to 83.6% in 2020; this measure promoted sustainability of government borrowings amid higher volatility on global financial markets.

A favorable interest rates situation facilitated the implementation of the large program of public borrowings on the domestic financial market in 2020 (*Fig. 43*). At first, the acute phase of the financial crisis led to sudden growth in 10-year OFZ yield from 6.25% as of the beginning of the year to 8.57% as of March 18, 2020; over that period short-term OFZ yield increased from 5.27% to 7.14%. However, owing to the key rate cuts in April and June by 1.75 p.p. outright 10-year OFZ yield fell to 5.63%.

In the period of implementation of the program of mass borrowings in H2 2020, 10-year OFZ yield increased from 5.63% to 6.22% as of the end of 2020



Note. 1* is a financial shock caused by the outbreak of COVID-19 and liquidity shock on global financial markets; 2* is growth in the program of government borrowings with emphasis on domestic investors; 3* is a pickup in market participants' inflation expectations in the world amid new packages of stimulus measures in the US and Russia with the statistical data on the rate of inflation taken into account; the RF Ministry of Finance started to buy foreign exchange on the Moscow Exchange.

Fig. 43. Yield to maturity of 1-year and 10-year OFZ in percentage per annum and the spread between the yield of 10-year OFZ and 1-year OFZ in percentage points from January 3, 2020 till 23 March 2021

Source: own calculations based on the data of the RF Central Bank and the Moscow Exchange.

and this can be regarded as a premium payable to domestic investors for large investments in OFZ. On the contrary, the yield of short-term government securities remained record-low (4.08% at the end of 2020), while the spread of 10-year OFZs and 1-year OFZs increased in that period which factor indicates sufficient liquidity with financial institutions as they are prepared to keep surplus cash funds in short-term OFZ at a low rate of return.

Unlike quantitative easing measures in the US where in 2020 the Federal Reserve bought treasury bonds on a monthly basis, thus actually financing the budget, in Russia additionally issued OFZs for financing the budget deficit were bought by banks primarily at the expense of their own liquidity cushion, rather than with funds received from the RF Central Bank in terms of refinancing. For this purpose, banks had to reduce their investments in the Bank of Russia short-term debts (KOBRs).

Shown in *Fig. 43* is the alarming trend of an explicit pickup in 10-year OFZ yield from 6.22% in 2020 to 7.39% in February 2021 and short-term OFZ yield from 4.08% to 5.38%. This trend reflects investors' concern about risks of inflation on global markets and this situation may prompt central banks of different countries, including Russia, to raise key interest rates.[1]

After foreign clearing and settlement organizations opened nominee accounts at the Russian Central Depositary in February 2013, the domestic public debt market saw investments inflow growth. The share of non-residents on the secondary OFZ market increased from 6.5% in July 2012 to 28.1% in May 2013 (*Fig. 44*).[2] Later, non-residents held on average nearly a quarter of OFZs. However, this ratio changed dramatically under the impact of non-residents' cash flows with financial and geopolitical risks taken into account. For example, amid concerns over introduction of sanctions on global investors for buying Russian government securities, in April 2018 the share of non-residents in the OFZ ownership pattern fell from 33.1% in 2017 to 24.4% in 2018. However, after it became clear that no sanctions were going to be applied to OFZ buyers and condition for such investments changed for the better, in 2019 foreign investors' funds returned to this market segment and the share of foreign investors in the OFZ ownership pattern amounted to the record-high level of 34.9% in February 2020.

During the financial crisis caused by the pandemic, the share of non-residents in OFZ ownership started to fall dramatically from 34.9% in February 2020 to 23.3% in January 2021. However, this time such a reduction was not accompanied by the withdrawal of portfolio investors' funds from OFZs; these investments remained stable. The decrease in non-residents' share was brought about by steep growth in the RF Ministry of Finance' OFZ issues and placement thereof primarily among domestic institutional investors.

1 On March 23, 2021, the RF Central Bank raised its key rate from 4.25% per annum to 4.5%.

2 In our view, before the liberalization of the OFZ market in February 2013, the actual share of non-resident investors in OFZs was higher than the official ratio of 6.6% because prior to opening of Clearstream and Euroclear securities correspondent accounts at the National Settlement Depository there was the custodian accounting system which did not take into account non-residents' investments in OFZs via various indirect schemes.

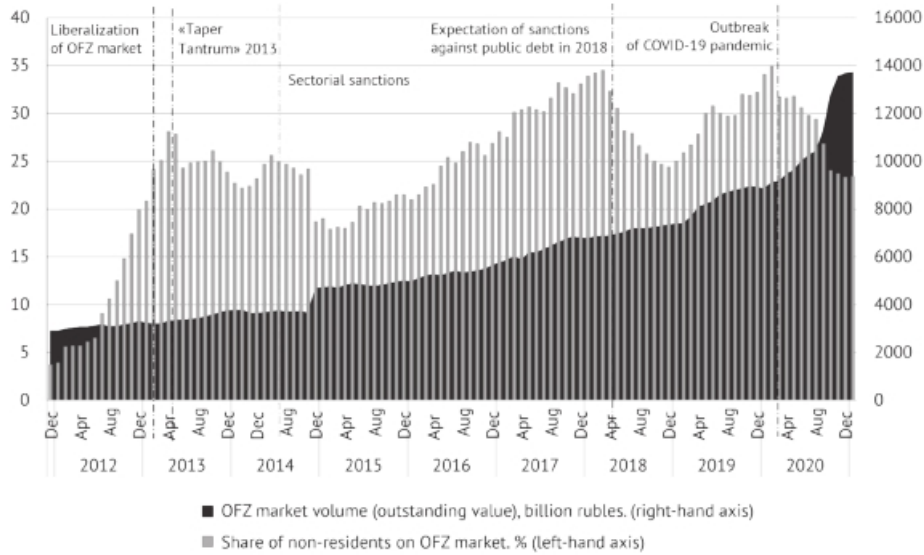


Fig. 44. The share of non-residents on the OFZ market, February 2012 – February 2021

Source: own calculations based on the data of the RF Central Bank and Cbonds.

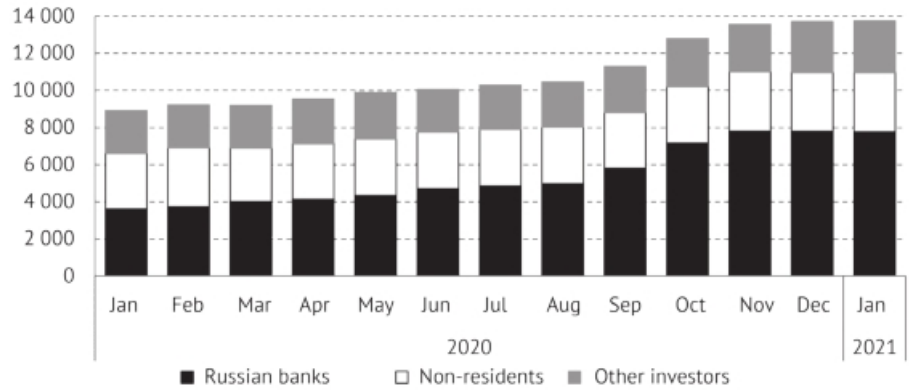


Fig. 45. The value of investments of banks, non-residents and other investors in OFZs. January 2020 – January 2021.

Source: own calculations based on the data of the RF Central Bank and Cbonds.

As shown in *Fig. 45*, the value of foreign investments in OFZs increased from Rb3.0 trillion in January 2020 to Rb3.2 trillion in January 2021. Specifically, banks' investments in OFZs increased by more than 100%: from Rb3.6 trillion to Rb7.6 trillion. Within the same period, investments of other investors including the NPF and insurers increased from Rb2.3 trillion to Rb2.8 trillion or by 21.7%.

So, during the crisis the OFZ market was one of the most dynamically growing segments of the domestic financial market by means of which the RF Ministry of Finance solved successfully the objective of raising a substantial net financing volume to replenish the budget. With the public debt financed in the national currency, it becomes more sustainable to global financial markets shocks. However, if such substantial government borrowings on the financial market continue, investment resources for the private sector of the economy may become limited.

3.1.10. The derivatives market

The importance of the derivatives market in economic terms consists in the promotion of transparency of assets pricing, as well as provision of market participants with an option to hedge their investments from sudden changes in prices of their assets in future.

In 2020, high income volatility of foreign exchange and financial and commodity assets facilitated, as expected, derivatives market growth on the Moscow Exchange (*Fig. 46*). The futures market trading volumes increased from Rb77.4 trillion in 2019 to Rb124. 5 trillion in 2020 or by 60.9%, while in 2019 they decreased by 6.1%. The option transactions volumes increased the least from Rb5.0 trillion in 2019 to Rb 5.3 trillion in 2020 or 7.1%; at year-end 2019 they fell by 27.3%.

The lag in the development of the options market observed in the past few years can be probably explained by low activities of foreign investors on this market and weakness of domestic institutional investors. In Russia, large banks which offer brokerage services to the bulk of individual investors did not carry out aggressive marketing to attract customers on the domestic derivatives market unlike, for example, the US market which saw vigorous growth in option deals transacted by individuals in 2020.

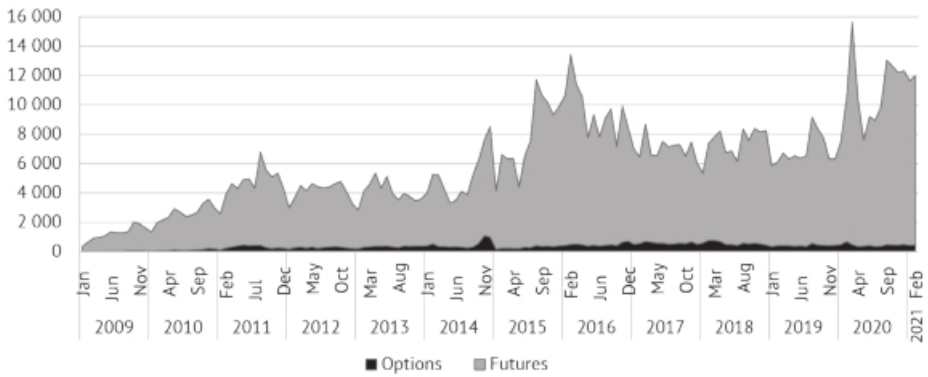


Fig. 46. The value of futures and option deals on the Moscow Exchange, January 2009 – February 2021, billion rubles.

Source: own calculations based on the data of the Moscow Exchange.

The derivatives market's insufficient development manifests itself in a weak analytical support it receives from the professional community: Russian academic journals and business media publish rarely materials dealing with the analysis of the domestic derivatives market situation.

The year 2020 saw no breakthroughs in terms of new products on the futures stock exchange market. It is noteworthy that currency forward contracts play the main role on the Moscow Exchange futures market; in 2020 the foreign exchange volatility brought about advanced growth in this market segment (*Fig. 47*). The volume of foreign exchange futures increased from Rb29.0 trillion in 2019 to Rb63.4 trillion in 2020; accordingly, the share of forex deals on the futures market increased from 40.1% in December 2019 to 51.6% in February 2021.

The second most important futures market segment is stock index futures contracts whose volume increased from Rb16.5 trillion in 2019 to Rb29.8 trillion in 2020; the share of index futures rose from 24.2% in December 2019 to 25.3% in February 2021.

The commodity futures trading volume (contracts for Brent oil, gold and other commodities) decreased somewhat from Rb27.5 trillion in 2019 to Rb27.4 trillion in 2020; the share of commodity futures decreased from 29.9% in December 2019 to 19.7% in February 2021. This segment of the derivatives market was less attractive to market participants because, unlike the forex market, for most companies the deals on this market have normally nothing to do with hedging, nor are related to their main business operations. Further, market participants' trust in this Moscow Exchange market segment was undermined by the abnormal situation with futures contracts for Light Sweet Crude Oil when the downfall of oil prices on April 20 and April 21 resulted in individual investors' losses owing

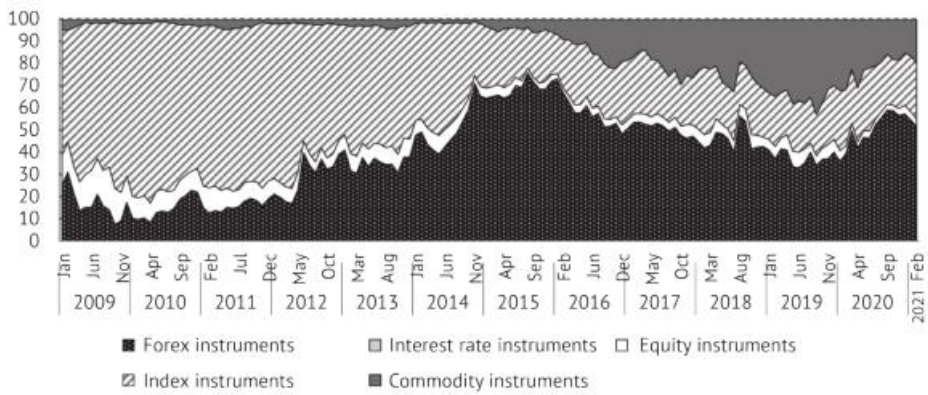


Fig. 47. The Moscow Exchange futures market pattern. January 2009 – February 2021, % of the deal value

Source: own calculations based on the data of the Moscow Exchange.

to forced closure of their contracts worth $1.5 bn - $1.7bn as estimated by the NAUFOR (the National Association of Stock Market Participants).

The volumes of trading futures for shares and bonds decreased from Rb4.3 trillion in 2019 to Rb4.0 trillion in 2020; their share in the overall volume of the futures market declined from 5.8% in December 2019 to 3.4% in February 2021. The low capacity of this derivatives market segment was related to low liquidity of most issues of underlying assets.

As in the previous few years, demand for interest rate futures and options still leaves much to be desired. In these market segments, the volumes of deals are actually equal to zero although amid the volatile financial market and growing inflation risks interest rates have an ever-growing impact on legal entities' and individuals' financial decisions. The main difficulties in this respect are related to the lack of reliable interest rate money market indicators and large investors which are prepared to take risks related to interest rate changes. Though numerous financial institutions and non-financial companies need hedging their contacts a lot in case of a pickup in interest rates, there are virtually no market participants which are prepared to pay for such risks.

As the options market was probably used the least for hedging investment assets, it predetermined a relatively moderate size of its liquidity on the Exchange. The options market's most active segment is index instruments contracts which volume increased from Rb3.1 trillion in 2019 to Rb3.3 trillion in 2020; their share in the total volume of options increased from 57.2% in December 2019 to 64.8% in February 2021 (*Fig. 48*).

The volumes of options for foreign exchange instruments increased from Rb1.5 trillion in 2019 to Rb1.7 trillion in 2020; their share in the overall volume of option deals declined from 34.7% in December 2019 to 28.6% in February 2021.

Other segments of the options market are very small. Options for commodity instruments decreased from Rb0.4 trillion in 2019 to Rb0.3 trillion in 2020; their

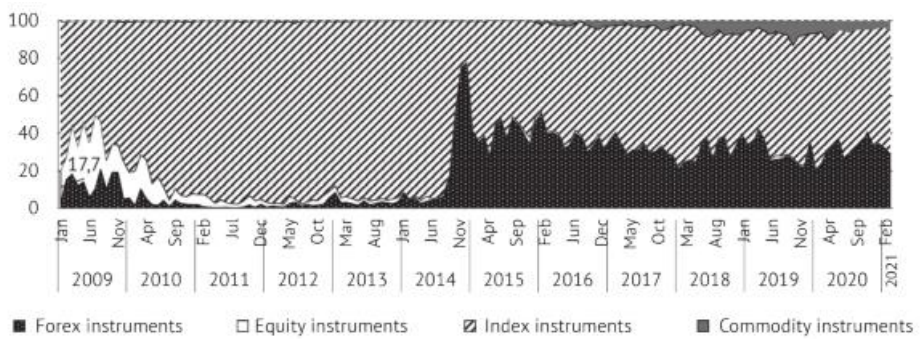


Fig. 48. The Moscow Exchange options market pattern, January 2009 – February 2021, % of deal value

Source: own calculations based on the data of the Moscow Exchange.

share in the overall volume of the options market declined from 6.9% in December 2019 to 5.8% in February 2021. The value of options for equity instruments is insignificant and has virtually no effect on overall performance indicators.

Probably, the Moscow Exchange derivatives market needs a new administrative impetus for active development, both in terms of attraction of new investors and motivation of financial intermediaries which may enhance this market segment's liquidity, particularly, as regards equity and interest rate derivatives instruments.

3.1.11. Financial intermediaries and the exchange

In 2020 and early in 2021, the number of professional securities market participants (PSMP) and licenses to carry out various types of professional activities kept decreasing (*Fig. 49*). There was a decrease in the number of licenses to brokerage activity from 290 in 2019 to 261 in February 2021 or by 10%; licenses to dealer activities from 319 to 291 or by 8.8% and licenses to trust management from 201 to 185 or 8.0%.

The reduction in the number of the licenses of PSMP on the long-term time horizon started from the 2008 crisis and reflected both the overall downturn economic trend and the diminishing role of the stock market in the economy. The establishment of the financial mega-regulator in September 2013 sped up this process a little because of a pickup in market participants' administrative costs. The main reason for cancellation of licenses to professional activities was licensees' declaration of their exit from the business.

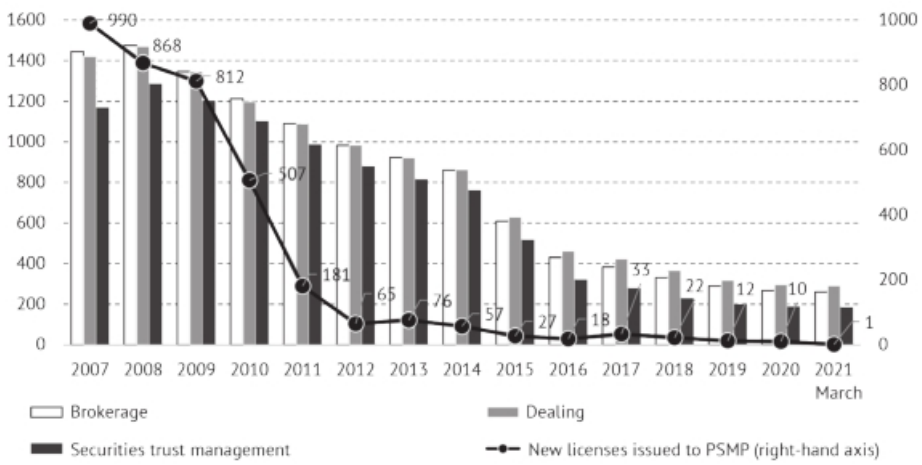


Fig. 49. The number of licenses to carry out brokerage, dealing and securities trust management activities (left-hand axis) and the number of licenses issued to professional securities market participants (right-hand axis) from 2007 till March 2021

Source: own calculations based on the data of the NAUFOR and registers of the RF Central Bank.

A more serious problem consists in a dramatic reduction in the number of new professional market participants which could underpin the economy, rather than the cancellation of licenses. A substantial downturn in the inflow of new market participants started from 2012. The number of new licenses issued to PSMPs in 2019, 2020 and in January-February 2021 was equal to 12, 10 and 1, respectively.

The concentration of activities of financial intermediaries is a reasonable strategy of upgrading their business efficiency; it takes place to one degree or another in lots of countries. However, the specific of the domestic market of financial services is the existence of administrative barriers for implementation of independent fintech-projects, domination of a few large retail banks, primarily, state-owned banks and active operations by the RF Central Bank which carries out often its own projects that compete with the private business. Facing such challenges as the violation of investors' rights and low efficiency of private financial business, the RF Central Bank does not focus its attention on the establishment of the "game rules" to solve one or another problem and legal enforcement thereof, but creates its own services aimed at solving these issues. In fintech, there are no mandatory requirements binding large financial institutions to comply with the "openbanking" standard and use open API addresses similar to the 2nd Services Payment Directive (EU) 2015 (PSD2).

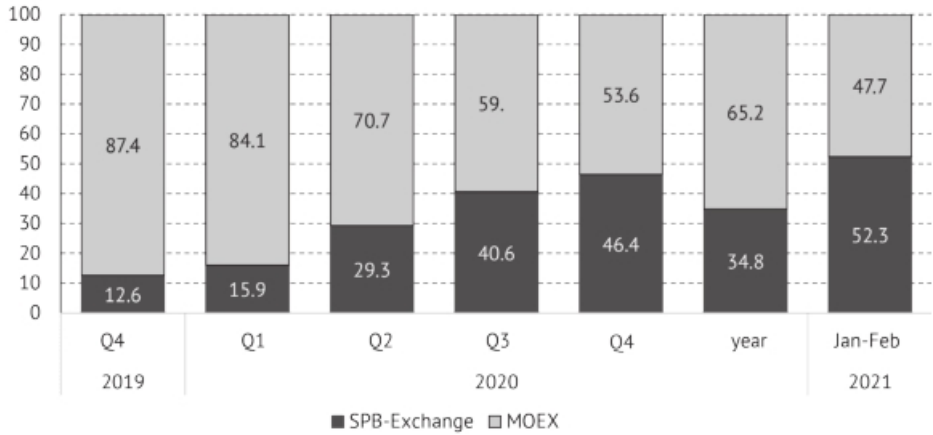
With a relatively liberal foreign exchange legislation and regulation of global financial institutions' operations on the domestic financial market, Russia is still the country with limitations for foreign direct investments in financial and banking activities due to geopolitical risks, slow and inconsistent development of the domestic savings system and an unfavorable investment climate.

Promotion of the competition on the financial market could be facilitated by legislative measures stimulating the competition of investment platforms; creation of conditions for implementation of private fintech projects; reduction of administrative barriers for new companies' entering the market; introduction of fiduciary standards of sale of finance and investment products[1]; more complete orientation of important infrastructure development projects to the needs of financial intermediaries and their customers.[2]

The merger of the MICEX and RTS in 2011 sped up the development of exchange-related technologies and facilitated the concentration of the liquidity in trading participants' accounts with the single clearing and trading system. However, along with positive changes, the merger of the RTS and the MICEX brought about ambivalent consequences. Most importantly, after the merger of the exchanges there is no longer competition which used to be a powerful driver of the development of exchange-related activities in the interests of domestic investors and financial intermediaries and, consequently, the development of the equity market and derivatives market slowed down to some extent.

1 These standards imply limitations on the conflict of interests with financial intermediaries in selling of financial products to customers.

2 On the development of investment platforms and fintech, see Abramov A. To Claim a Platform // The Expert magazine, Issue No. 44, October 28– November 3, 2019. pp. 64–68.



Note. On-exchange equity volumes include market transactions and negotiated deals.

Fig. 50. The shares of the Moscow Exchange (MOEX) and the Saint-Petersburg Exchange (SPB-Exchange in the overall volume of stock exchange transactions with equities, %

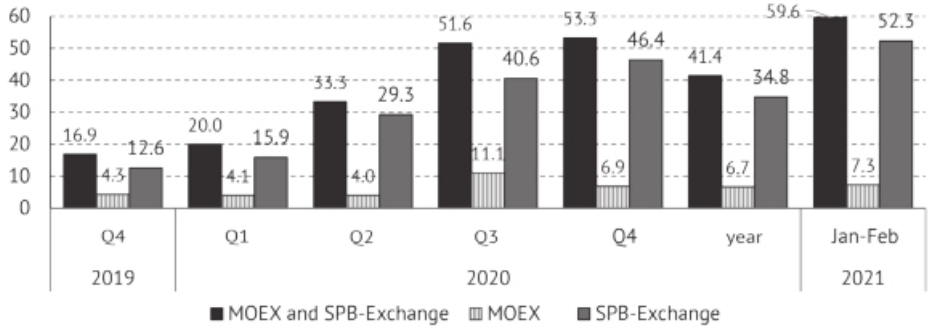
Source: own calculations based on the data of the Moscow Exchange and the Saint-Petersburg Exchange.

In 2020, the sped-up development of the Saint-Petersburg Exchange (SPB-Exchange) which trades equities of foreign issuers revived the competition between exchanges on the equity market. As shown in *Fig. 50*, the share of SPB-Exchange on the domestic spot market of equities of Russian and foreign issuers increased from 12.6% in Q4 2019 to 46.4% in Q4 2020 and by 52.3% in January-February 2021. So, early in 2021 the SPB-Exchange was ahead of the Moscow Exchange on the equity market for the first time.[1]

The competition between the stock exchanges on the market of equities of foreign companies led to investment demand shift - it concerns primarily individual investors – from equities of domestic publicly-traded companies (PAO) to foreign equities. As shown in *Fig. 51*, the share of equities of foreign companies in the overall equity trading volume of the two Russian exchanges increased from 16.9% in Q4 2019 to 53.6% in Q4 2020 and 59.6% in January-February 2021. The bulk of trading operations with equities of foreign companies is carried out at the SPB-Exchange.

With equities of foreign companies becoming widely available to domestic individual investors, it is feasible for them to upgrade the diversification of their portfolios and protect their savings from the risk of the ruble depreciation. The localization of services as the trading authority and brokerage services with foreign financial instruments promotes the competitiveness of Russian financial

1 From 2020, the Moscow Exchange started to include in the listing equities of foreign issuers, too; in its turn the SPB-Exchange declared its intension to include in its listing equities of Russian PAOs.



Note. On-exchange equity volumes include market transactions and negotiated deals.

Fig. 51. The share of foreign companies' equities in the overall value of equity trading on the Moscow Exchange (MOEX) and the Saint-Petersburg Exchange (SPB-Exchange), %

Source: own calculations based on the data of the Moscow Exchange and the Saint-Petersburg Exchange.

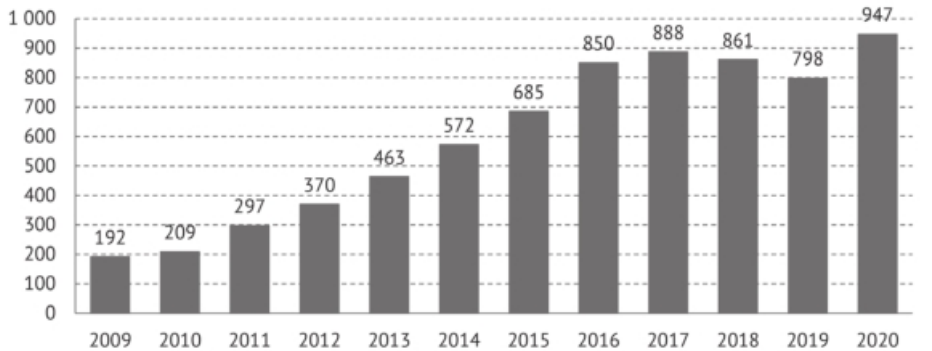


Fig. 52. The overall auction volumes of all instruments at the Moscow Exchange, 2009-2020, trillion rubles

Source: own calculations based on the data of the Moscow Exchange.

intermediaries. However, this process creates the risks of transfer of global financial markets' excessive volatility to the domestic market. Such risks should be dealt with not by prohibitive measures, but through the speed-up of the rates of development of the market of equities of Russian issuers and growth in the share of exchange traded funds (ETFs) - which make it possible to buy on exchanges shares in diversified securities portfolios - in exchange auctions.

In 2020, the Moscow Exchange tried to maximize its advantages on the market as the general organizer of auctions of various investment financial assets. The MOEX succeeded in overcoming the trend of downturn in overall on-exchange

transactions volumes seen in 2018–2019 (*Fig. 52*). Overall volumes of exchange auctions increased from Rb798 trillion in 2019 to Rb947 trillion in 2020 or by 18.7%.

One of the advantages of the Moscow Exchange as compared with global competitors is the diversification of market segments it serves. However, such a business model of the Exchange creates additional risks of reducing market-based incentives to develop less marginal segments. At present, it manifests itself in a decrease in the weight of the stock market and the derivatives market in overall exchange-traded volumes. As shown in *Table 9*, in 2010-2018 the share of the stock market in the overall volume of exchange transactions decreased from 13.2% to 4.4% and then started to grow slowly again, but failed to recover to the previous level. Within the past 14 months, this index rose from 5.1% in 2019 to 5.5% in January-February 2021.

The share of derivatives market was growing faster. In January-February 2021, it became equal to 17.4% and approached the 10-year maximum of 19.1% registered in 2011. It is noteworthy that forex derivatives were the main growth driver of this segment in 2020 and early in 2021.

Table 9

The pattern of the Moscow Exchange market, 2010 – February 2021, %

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021, February
Stock market	**13.2**	**10.3**	**6.5**	**5.2**	**3.6**	**3.0**	**2.8**	**4.0**	**4.7**	**5.1**	**5.8**	**5.5**
including:												
equities, RDR and equity units	8.0	6.6	3.1	1.9	1.8	1.4	1.1	1.0	1.3	1.6	2.5	3.3
Bonds	5.2	3.7	3.4	3.3	1.9	1.6	1.7	3.0	3.5	3.5	3.2	2.2
Secondary bidding	3.4	2.9	2.8	2.7	1.5	1.2	1.1	1.2	1.2	1.3	1.2	0.9
Offerings market	1.8	0.8	0.6	0.6	0.3	0.4	0.6	1.7	2.3	2.2	2.1	1.3
Forex market	**72.0**	**70.6**	**80.0**	**84.3**	**85.6**	**83.3**	**83.6**	**86.5**	**84.8**	**84.5**	**80.5**	**77.0**
including:												
Money market	33.9	41.3	48.3	50.7	45.7	38.0	44.8	47.3	44.3	45.9	45.7	42.6
REPO operations	31.5	38.3	45.8	44.8	32.0	26.4	34.8	38.3	36.0	36.7	40.0	37.1
Lending market	2.4	3.1	2.5	2.8	3.7	4.8	4.4	4.2	6.3	6.7	5.0	4.5
Currency market	38.1	29.3	31.6	33.7	39.9	45.4	38.8	39.2	40.5	38.6	34.7	34.4
Spot deals	18.0	15.8	16.6	12.4	13.6	15.1	12.6	8.8	10.1	8.4	10.2	11.5
Swap deals	20.1	13.4	15.0	21.3	26.3	30.3	26.2	30.3	30.4	30.2	24.5	23.0
Derivatives market	**14.8**	**19.1**	**13.5**	**10.5**	**10.7**	**13.7**	**13.6**	**9.5**	**10.4**	**10.3**	**13.7**	**17.4**
Derivative financial instruments (DFI)	**0.0**	**0.0**	**0.0**	**0.0003**	**0.0002**	**0.001**	**0.002**	**0.01**	**0.1**	**0.1**	**0.1**	**0.1**
Commodity market	**0.001**	**0.003**	**0.006**	**0.005**	**0.003**	**0.02**	**0.02**	**0.01**	**0.02**	**0.01**	**0.01**	**0.01**
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: own calculations based on the data of the Moscow Exchange.

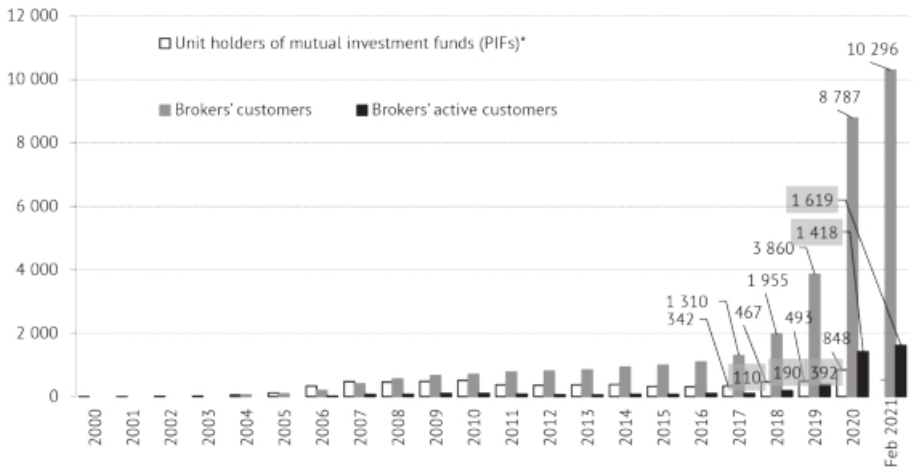
3.1.12. Investors

Private investors

In 2019-2020, the financial market saw the influx of numerous individual investors and it was the major event. The overall number of brokerage accounts of the Moscow Exchange registered investors increased 5.2-fold from 2.0 mn in 2018 to 10.3 mn in February 2021 (*Fig. 53*). Within the same period, the number of accounts of active customers transacting at least one deal a month increased from 190,000 to 1,619,000 or 8.5-fold. Also, the number of unit holders of tradable mutual investment funds grew considerably from 467,000 in 2018 to 848,000 in 2020 or 1.8-fold.

The main drivers of the inflow of millions of new individual investors to the stock market were as follows: a long-term decrease in the Bank of Russia key rate which reduced bank deposits' investment appeal; new technologies which simplified investors' access to risk assets (investment platforms of the Tinkoff Bank, Sber, VTB and other large financial institutions, the SPB-Exchange services and other); large retail banks' aggressive marketing of brokerage services; more spare time with some individuals during the pandemic; growth in households' savings amid economic uncertainty.

By the NAUFOR's estimates, in 2020 the balances of brokerage accounts and individuals' trust management accounts amounted to around Rb6 trillion, including: Rb4.8 trillion on ordinary brokerage accounts, Rb0.8 trillion on trust management accounts and Rb0.4 trillion on personal investment accounts (PIA)



*The data on the number of market unit holders of mutual investment funds in January-February 2021 is not available.

Fig. 53. The number of market retail customers and brokers

Source: own calculations based on the data of the Moscow Exchange and Expert RA.

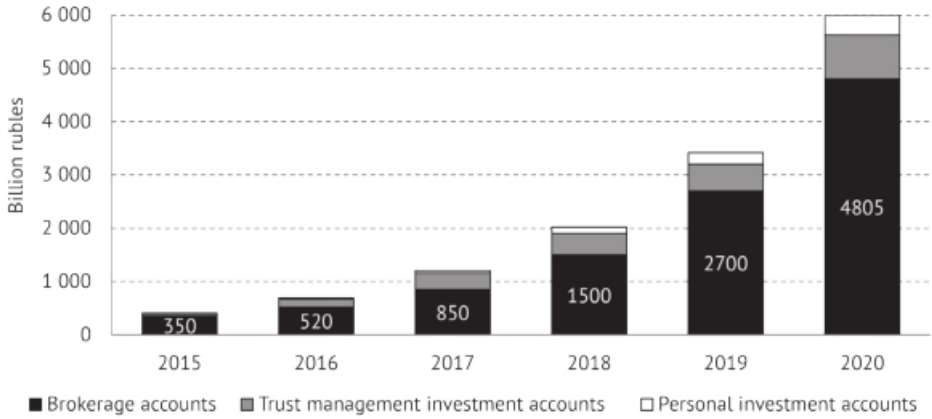


Fig. 54. The value of assets in individual investors' accounts, 2015–2020

Source: based on the data of the NAUFOR.

(*Fig. 54*). As compared with 2018, the volume of individual investors' funds with brokers and trustees (without pooled investments taken into account) increased by 200%.

Though in 2020 Rb6.0 trillion worth of customers' assets with brokers and trustees was definitely lower than the value of households' deposits with banks (Rb63.6 trillion), it was comparable with such forms of savings as the overall value of pension savings and reserves worth Rb6.3 trillion; insurance companies' reserves worth Rb2.4 trillion, as well as global portfolio investors' Rb4.8 trillion worth of investments in equities of Russian companies.[1]

The distribution of these funds in individuals' accounts is highly uneven; by the NAUFOR's estimates as of the mid-2020 only 36% of brokerage accounts were "funded" (that is, replenished with assets).

An upsurge in the competition between large Russian retail banks on the market of brokerage services for the mass-market customer started in May 2018 when the Tinkoff Bank entered this market segment as an independent market player (*Fig. 55*). Other competitor-banks (the Sberbank, VTB and Otkrytie) adopted quickly the new technologies of attracting customers on the stock market and this sped up further growth in brokers' customer base. This phenomenon can be explained by banks' determination to make up for revenue losses by selling to customers highly marginal products, such as conventional bank bonds, structured products, insurance products, unit investment funds and other.

As of February 2021, three large banks – the Tinkoff Bank, the Sber and the VTB – accounted for 58.4% of the registered brokerage accounts. Their share in the overall number of accounts was equal to 58.4%, including 25.6% of the Tinkoff

1 The estimate of Russian equities portfolios of global investment funds is based the data of Thomson ONE and the ruble exchange rate as of the end of 2020.

Fig. 55. The number of customers' registered (non-unique) brokerage accounts with Big-3 brokers at the Moscow Exchange, thousand accounts

Source: own calculations based on the data of the Moscow Exchange.

Fig. 56. The number of customers' registered active brokerage accounts with Big-3 brokers at the Moscow Exchange, thousand accounts

Source: own calculations based on the data of the Moscow Exchange.

Bank. The number of Tinkoff Bank brokerage accounts increased from 286,000 in 2018 to 4.3 mn in February 2021 or 15-fold.

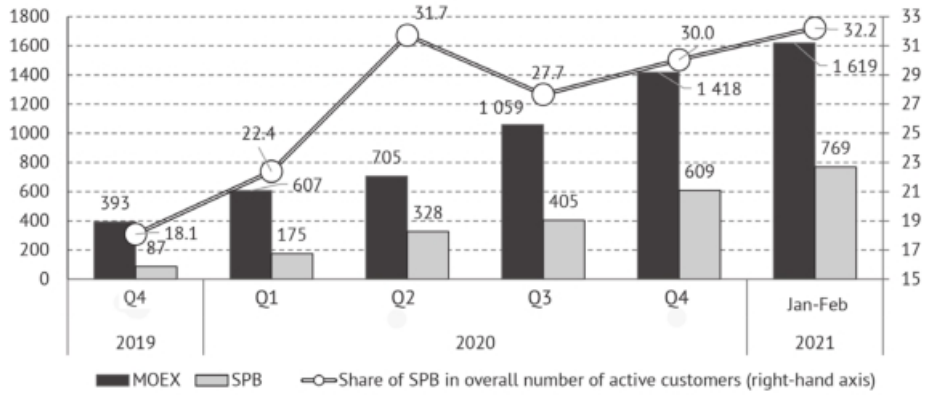


Fig. 57. The number of customers' active brokerage accounts on the Moscow Exchange (MOEX) and the Saint-Petersburg Exchange (SPB) (thousand, left-hand axis) and the share of active accounts on SPB in their overall number on Russian exchanges (%, right-hand axis)

Source: own calculations based on the data of the Moscow Exchange and the Saint-Petersburg Exchange.

The maintenance of active customers' brokerage accounts is a more concentrated business (*Fig. 56*). The Tinkoff Bank, the Sber and the VTB account for 94.6% of the overall number of accounts, including 65.1% of the Tinkoff Bank. The number of the Tinkoff Bank's active brokerage accounts increased from 33,000 in 2018 to 1.1 mn in February 2021 or 31.9-fold.

The increasing competition between the Moscow Exchange and the Saint-Petersburg Exchange led to growth in the number of active customers on the SPB-Exchange. The number of brokers' active customers at the SPB-Exchange increased from 87,000 in 2019 to 769,000 in February 2021 or 8.8-fold (*Fig. 57*). The share of the Saint-Petersburg Exchange in the overall number of brokers' active customers on both the exchanges rose from 18.1% in 2019 to 32.2% in February 2021.

The introduction of personal investment accounts (PIA) with personal income tax privileges and no serious limitations on investment of funds from such accounts was the most remarkable event in the field of private savings in the past six years. As per the data of the Moscow Exchange, as of February 2021 the number of brokerage PIAs amounted to 3.7 mn (*Fig. 58*). This growth in the number of brokerage PIAs was mainly driven by banks carrying out brokerage activities. In December 2018-February 2021, their share in the overall number of specified accounts rose from 73.9% to 89.5%, while the share of non-bank financial institution-brokers shrank from 26.1% to 10.5%.

In the business of opening and maintaining PIA, the Tinkoff Bank, the Sber and the VTB account for 83.5% of the overall number of accounts, including 65.1% of the Sberbank, the unchallenged leader in this segment (*Fig. 59*). The number of

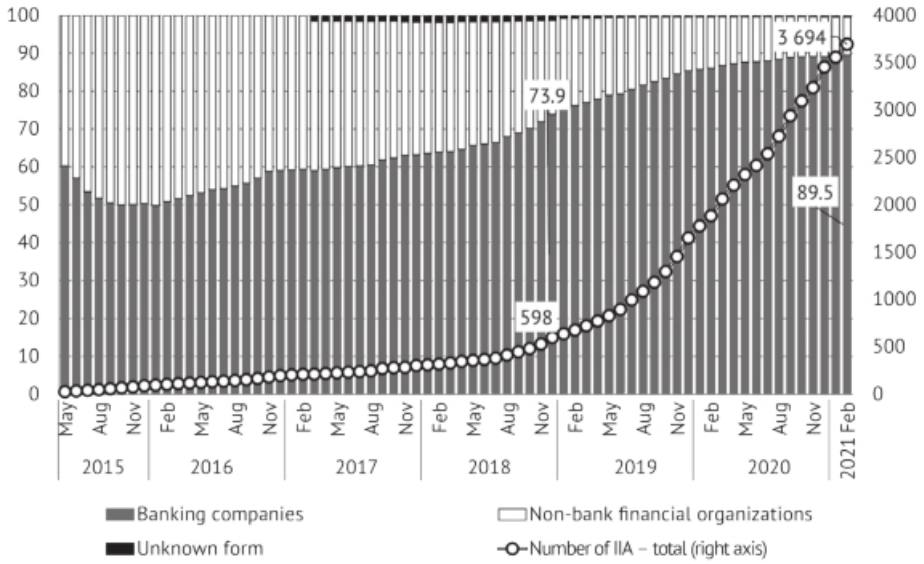


Fig. 58. The overall number of brokerage personal investment accounts (PIA), May 2015-February 2021, thousand accounts

Source: own calculations based on the data of the Moscow Exchange.

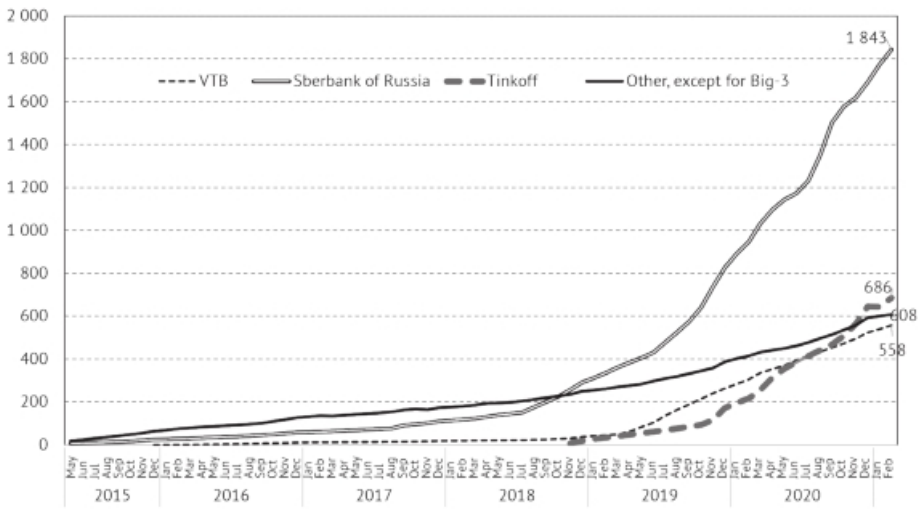


Fig. 59. The number of PIAs with Big-3 brokers, thousands of accounts

Source: own calculations based on the data of the Moscow Exchange.

PIAs maintained with the Sberbank increased from 291,000 in 2018 to 1.8 mn in February 2021 or 6.3-fold.

As per the data of the NAUFOR[1], in 2020 individual investors' savings in PIA balances, including brokerage and trust management account balances amounted to about Rb375bn; as compared with 2018, their value increased 3.1-fold. By the estimate of the RF Central Bank, in 2020 the average PIA balances within the brokerage service framework amounted to Rb88,000 (Rb92,000 a year before), while within the trust management framework, to Rb263,000 (Rb301,000 a year before).[2]

According to the outputs of the NAUFOR's survey, in 2020 28.0% of assets in brokerage PIAs were held by their owners in equities of public joint-stock companies (PAOs); 21.2% in money market instruments, 19.0% in ruble-denominated corporate bonds, including structured and bank bonds; 13.7% in foreign equities; 6.8% in OFZs; 6.2% in ETFs and exchange-traded mutual investment funds (exchange-traded PIFs); 1.5% in mutual investment funds (PIFs) and 3.6% in other assets.

The funds were distributed in trust management PIAs as follows: 37.0% in exchange-traded PIFs and ETFs; 25.4% in units of PIFs; 16.1% in corporate bonds, including bank bonds; 7.0% in OFZs; 6,0% in monetary funds; 1.4% in foreign equities and 7.1% in other assets, that is, as compared with brokerage PIAs these accounts were largely meant for pooled investments.

In 2020, the distribution of the portfolio in terms of brokerage PIAs changed considerably as compared with the previous year. Investments in equities of foreign companies increased from 4.0% in 2019 to 13.3% and those in foreign currency-denominated bonds, primarily, Eurobonds, from virtually the zero level to 17.1%. At the same time, investments decreased in equities of Russian PAOs from 30.0% to 18.3%; OFZs from 12.0% to 3.9% and ruble-denominated corporate bonds from 11.0% to 4.9%.

In 2020, perceptible changes took place in the distribution of the PIA portfolio in terms of trust management accounts as compared with the previous year. The share of investments in exchange-traded PIFs and ETFs increased from 10% to 37% and that of investments in ruble-denominated corporate bonds, from 10.0% to 16.1%. At the same time, investments in PIF decreased from 51.0% to 25.4% and those in OFZs, from 10.0% to 7.0%.

So, though active PIAs have failed to become a long-term private savings instrument and assets in such accounts are much smaller than in conventional brokerage accounts and trust management accounts, personal investment account holders took more interest in instruments which make it feasible to diversify better their portfolio and protect it from the risk of the volatile ruble. A pickup in PIAs results in increased demand for effective pooled investment products, primarily, index-linked ETFs and exchange-traded PIFs.

1 NAUFOR. The Annual Survey of Individuals' Activities on the Stock Market. February 24, 2021.
2 The RF Central Bank. The Review of Key Indicators of Professional Securities Market Participants. 2020. Analytical and Information Review. Issue No.4, 2021.

Domestic institutional investors

The influx of individual investors to the domestic market made up partially for the outflow foreign investors' funds. However, no such breakthroughs took place in the segment of domestic pooled investments in 2019–2020. Growth in pension savings with the Pension Fund of the Russian Federation and fund managers were restrained by the "freezing" of the system of mandatory pension savings since 2014. No alternative solutions as regards corporate and individual plans have been made. Owing to low interest rates on deposits and high volatility on the equity market, there is a sustainable inflow of investors' funds, however, this segment's growth was hindered by investors' high costs, obsolete unit distribution system and insufficient transparency of the information on funds' activities.

In 2020, vigorous growth in exchange-traded PIFs combining the advantages both of low costs and sale of units on exchange can be attributed to the most positive events in the segment of pooled investments. The value of exchange-traded PIFs and ETFs increased from Rb39 bn in 2019 to Rb146 bn in 2020 or 3.7-fold.

The share of bank assets in GDP increased from 87.8% in 2019 to 106.0% in 2020 (*Fig. 60*), and this can be largely explained by appreciation of the value of financial instruments owned by banks and bank lending growth amid the declining key rate. Apart from deposits, banks use actively other funding instruments, including bond issues.

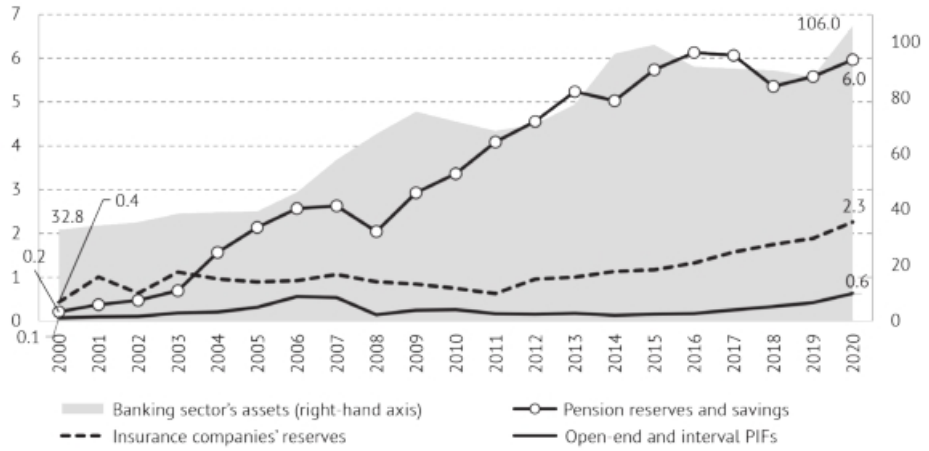


Fig. 60. The share of bank assets (%, right-hand axis), pension reserves and savings, insurance companies' reserves and the value of net assets of open-end and interval PIFs (%, left-hand axis) in GDP in Russia in 2000–2020

Source: own calculations based on the data of the RF Central Bank, the Pension Fund of the Russian Federation and the Rosstat.

The share of pension savings and reserves in GDP increased from 5.6% in 2019 to 6.0% in 2020. The share of the value of net assets of open-end and interval PIFs in GDP rose from 0.4% to 0.6% and that of insurance companies' reserves in GDP, from 1.9% to 2.3%.

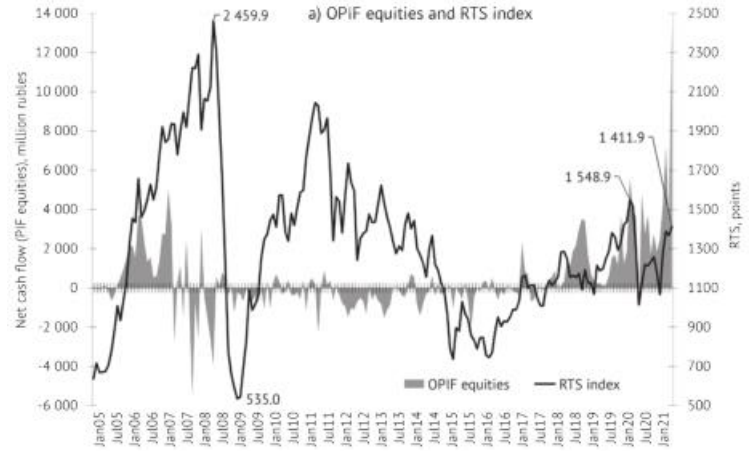
Some important and interesting trends in the development of open-end mutual investment funds (OPIFs) can be seen in *Fig. 60*. As shown in *Fig. 61a*, individual investors' behavior in respect of PIF equities was normally of a procyclical nature: a drop in the RTS index brought about sales of units of such mutual investment funds, while index growth facilitated the inflow of investors' funds. Despite the RTS index negative return of -10.4% in 2020, the net inflow of investors' funds in PIF equities amounted to Rb38.4 bn as compared with Rb18.0 bn in 2019. This investors' behavior is in harmony with a wide-spread behavioral finance assumption that investors most commonly prefer to invest new funds on bull market, but withdraw them more reluctantly on bear market. Expecting RTS index growth based on economic recovery in 2021, only in January-February investors invested Rb16.9 bn in OPIF equities, that is, a bit less than in the entire 2019.

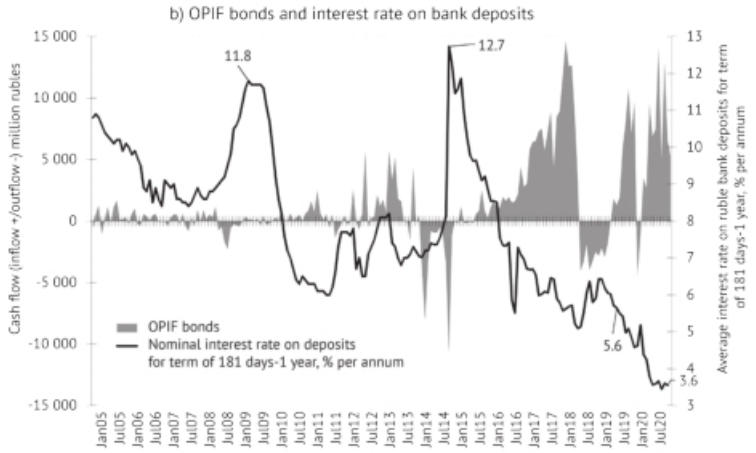
On mid-term horizons, investors' cash flows in OPIF bonds depend on interest rates on bank deposits (*Fig. 61b*). In 2020, the reduction in interest rates from 3.6% per annum to 5.1% per annum on bank deposits for the term of 181 days -1 year led to a vigorous inflow of new cash funds in OPIF bonds. This indicator grew from Rb17.2 bn in 2019 to Rb72.9 bn in 2020. In January-February 2021, these funds received additional Rb11.8 bn worth of investors' money. However, in future if after the RF Central Bank's decision of March 2021 to raise its key rate by 0.25 p.p. this trend continues, unit holders of PIF bonds are likely to withdraw their money from these funds.

As shown in *Fig. 61b*, amid the outflow of funds of private investors of foreign mutual investment funds specializing in equities of Russian companies (Russia-EMEA-Equity), the accumulated volumes of domestic investors' funds in Russian OPIF equities are becoming comparable with those of the specified foreign investment funds. In December 2004 – February 2021, investors' accumulated funds in Russia-EMEA-Equity amounted to $1.1 bn, which is almost comparable with the indicator of $1.0 bn worth of investments in Russian PIF equities. And yet, this trend can hardly be regarded as positive because this equality was achieved mainly owing to the stable outflow of foreign investors' savings from funds investing in Russian equities, rather than the inflow of large amounts of funds in PIF equities.

Finally, shown in *Fig. 61d* is the difference in behavior of foreign and domestic private investors as regards their investments in the same equities of Russian companies through investment funds. The point is that foreign private investors sought to invest when Russian equity prices were low and withdrew at the first signs of risks of their equities being overvalued and weakening of the national currency.

In terms of the rate of return on long-term investments, the Russian equity market is cyclic and for this reason investors have to pay more attention to global diversification of such individual portfolios.


a) OPIF equities and RTS index
Net cash flow (PIF equities), million rubles
RTS, points
2 459.9
535.0
1 411.9
1 548.9
OPIF equities
RTS index


b) OPIF bonds and interest rate on bank deposits
Cash flow (inflow +/outflow -) million rubles
Average interest rate on ruble bank deposits for term of 181 days-1 year, % per annum
11.8
12.7
5.6
5.6
OPIF bonds
Nominal interest rate on deposits for term of 181 days-1 year, % per annum


c) Investors' cash flows in Russian PIF equities and Russia-EMEA-Equity foreign funds (cumulative) (December 2004 = 0)
million USD
14 116
1 732
1 020
1 150
OilPIF equities
Equity foreign funds

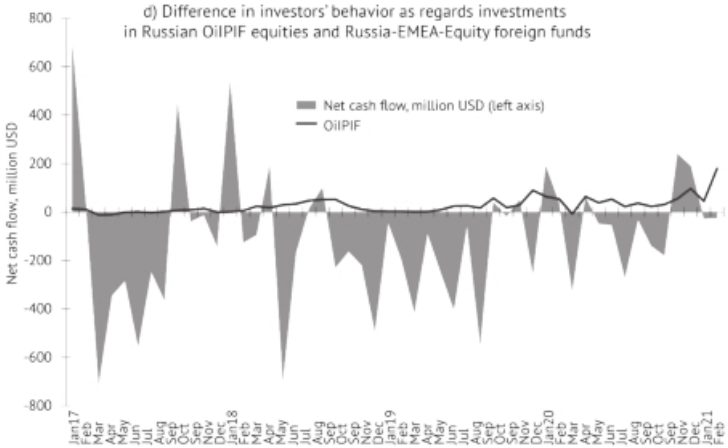


Fig. 61. The specifics of behavior of private investors in various mechanisms of pooled investments in equities and bonds of Russian issuers, including:

a) investors' monthly net cash flows in open-end PIF (OPIF) equities, billion rubles (left-hand axis) and RTS index, points (right-hand axis);
b) investors' monthly net cash flows in OPIF bonds, billion rubles (left-hand axis) and average interest rates on households' deposits with banks for the term of 181 days - 1 year, % per annum (right-hand axis);
c) investors' monthly net cash flows in open-end and interval PIF (OiIPIF) equities and equities of foreign equity funds specializing in equities of Russian companies, cumulative, million USD (December 2004 = 0);
d) investors' monthly net cash flows in Russian OiIPIF equities (right-hand axis) and foreign equity funds specializing in equities of Russian companies (left-hand axis), million USD.
Source: own calculations based on the data of Investfunds.ru and Emerging Portfolio Fund Research (EPFR Global) web resource [URL: https://www.epfrglobal.com/].

So, the year 2020 saw different trends in the segment of pooled investments. The development of pension savings and reserves is hindered by relevant key legislative issues which remain unsolved. In the segment of traded unit investment funds, there is moderate growth in domestic savings which unlike brokerage accounts is not accompanied by large retail banks' aggressive sales. However, the segment of retail PIFs remains rather small with high costs for investors and insufficient investment appeal to a wide range of investors.

Foreign investors

On various emerging markets, foreign portfolio investors often follow similar scenarios. They take decisions to invest or withdraw from such funds based on the general cyclic pattern and weight of one or another country in global stock indices, rather than the individual specifics of economies and issuers of different countries.[1]

1 For more details about the investment strategy of such funds in terms of Russia, refer to *Abramov A*. Differences in Behavior of Domestic and Foreign Private Investors on the Russian Stock Market // Russia's Economic Development, Issue No.11, 2014.

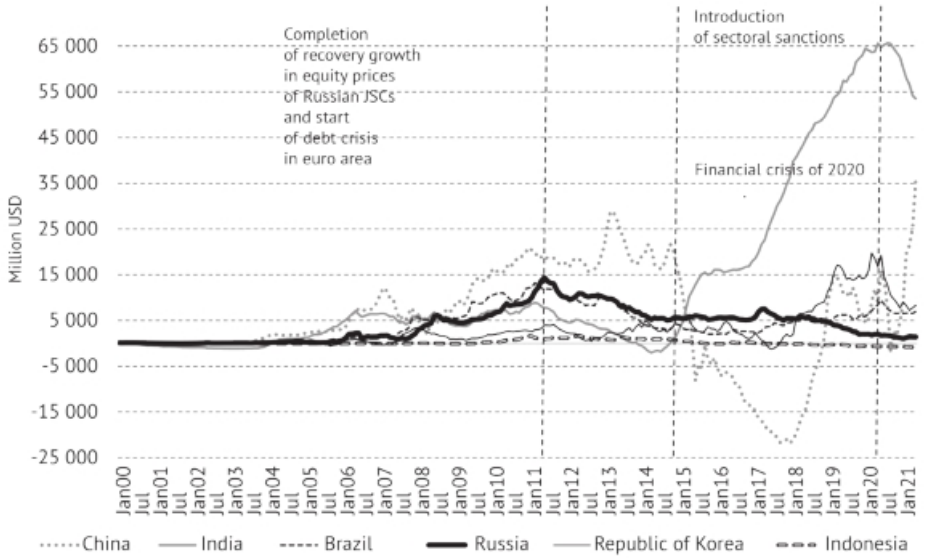


Fig. 62. Cumulative cash flows of foreign investment funds specializing in investments in equities of one or another country with emerging market, January 2000-February 2021

Source: own calculations based on the data of the EPFR web resource.

According to the data of the EPFR web resource, the Russian equity market has faced large-scale withdrawal of foreign investment funds since the mid-2011 (*Fig. 62*). The comparison with other five large emerging equity markets – Brazil, India, China, South Korea and Indonesia – reveals that they all encountered a similar phenomenon at the same period of time. As the year 2020 was quite complicated for emerging capital markets, foreign investors were withdrawing funds from them: $18.8 bn were withdrawn from funds of 8 developing countries, including $0.3 bn from Russia-EMEA-Equity funds.

The behavioral specific of investors in Russia-EMEA-Equity funds as compared with other seven emerging markets consists in the fact that in the past 20 years the largest amount of funds was withdrawn from "Russian funds." In 2011 – February 2021, $8.6 bn were withdrawn from funds; within complete 10 years on the 2011–2020-time horizon, positive cash flow was seen only in 2012 and 2015–2016.

Further, investors have been withdrawing consistently from Russia-EMEA-Equity funds since the mid-2011 which indicates their pessimism over investments in equities of Russian companies.

Further, investors have been withdrawing consistently from Russia-EMEA-Equity funds since the mid-2011 which indicates their pessimism over investments in equities of Russian companies. Probably, such pessimism of foreign investors is the reason for consistently low risk premium for equities of Russian issuers.

By estimates of the Thomson ONE web resource, the overall value of investments of large global investment funds in equities of Russian companies decreased from $83.3 bn in 2019 to $65.6 bn in 2020.

So, despite macroeconomic stability achieved by 2020 and risk premium reduction, the Russian market of equities and bonds, except for OFZ, still lacked investment appeal and the outflow from foreign investment funds specializing in equities of Russian issuers proves it.

3.1.13. Russian financial market risks

On the mid-term time horizon, investors on the domestic financial market may encounter serious risks: sudden outflow of investments from emerging markets if it is declared that monetary and budget policies are going to be tightened; domestic investors flight from markets of risk investment assets; partial losses of the value of investments in ruble-denominated assets owing to considerable depreciation of the ruble; stagnation of the equity market in case of the scenario of stabilization or decline of prices of oil, gas and other primary products on global financial markets; stock market stagnation in case of increasing government dirigisme in the economy, finances and social policy.

According to the Bank of America Fund Manager Survey carried out on March 5, 2021, the risks related to Covid-19 epidemic gave way to new concerns about inflation growth and repetition of "taper tantrum" of May 2013 on the bond market.[1] It is noteworthy that 37% of the respondents noted that the inflation rate was the main problem and 35% of the respondents feared "taper tantrum," a bond market strong reaction in case the Federal Reserve gave up unexpectedly its monthly buying of assets. Coronavirus-related risks cause concern with only 15% of the respondents, half as many as in February.[2]

Countries with high debts in foreign currency and a trade balance deficit are more prone to sudden outflow of global portfolio investors. Experts of the Economist[3] magazine believe that such countries include Brazil, India, Indonesia, Mexico, Turkey and South Africa. In this regard, the maintenance of financial stability in Russia - in terms of low public debt and its financing by means of ruble-denominated debt instruments, moderate foreign debt of Russian companies and trade balance surplus – is instrumental in preventing financial shocks in case of a new "taper tantrum" which global institutional investors believe is highly likely on emerging markets.

Taking into account the fact that private investments are normally procyclical, it is important to pay attention to the risk of sudden sales of assets by domestic

1 The definition "taper tantrum" denoting financial market participants' sudden "hysterics" emerged in May 2013 when the first statements by Federal Reserve representatives on gradual tightening of the monetary policy after the 2008 crisis in terms of reduction in the Fed balance and interest rate rise led to a sudden outflow of foreign portfolio investments from emerging stock markets and triggered financial assets price shocks and local currency exchange rate shocks.

2 *Cox Jeff*. Investors now fear inflation and the Fed more than Covid, Bank of America survey shows. CNBC news, March 16.2021; *Bruno Valentina, Shin Hyun Song*. Capital Flows and the Risk-Taking Channel of Monetary Policy. SSRN. July 6. 2012; *Hofmann Boris, Par Taejin*. The broad dollar exchange tare as an EME risk factor. BIS Quarterly Review, December,2020. P. 13–24.

3 The Economist. Free exchange. The fragile four. March 6th. 2021. P. 72.

investors. In future, such risks may arise on the bond market in case of upturn in inflation and, consequently, Bank of Russia key rate. It is noteworthy that sales may affect the market of foreign companies' equities, too.

The Russian market problem consists in the fact that the bulk of individual investments is made beyond the framework of pooled investment schemes and corporate and individual pension plans which make it feasible to invest on a more diversified basis and use professional investments protection methods recommended by pension plan managers.

In 2019-2020, exponential growth in the number of brokerage accounts and activities of holders thereof was driven by 3–4 large retail banks' aggressive marketing aimed at reorientating their customers to brokerage service. Specifically, banks gave preference to direct investments, rather than beginner investors' less risky pooled investments. Such practice was not accompanied by substantial upgrading of the standards of sales of financial products and instruments, for example, utilization of the open architecture principles of sales as well as fiduciary standards for sellers and investment advisors. These factors entailed higher risks of unscrupulous sales of financial products which may materialize in the mid-term.

Recurring risks of depreciation of the national currency are a key obstacle on the way to formation of domestic savings in Russia. Most commonly, depreciation of the ruble proceeds along one and the same scenario. A decline in prices of oil and capital outflow give rise to depreciation of the ruble followed by a period of 6-8 years when the ruble remains stable and even appreciates a little (*Fig. 63*). Depreciation reduces domestic savings motivation. Though the exchange rate liberalization measures and the fiscal rule introduced in the past few years facilitated reduction in depreciation risks, structural economic changes are required to manage them in full.

Russia has seen four waves of depreciation of the ruble since September 1995. During the first wave (from September 1, 1995 till August 31,1998) the average exchange rate amounted to Rb5.7 per $1. After the crisis of August 1998 till August 2008, the average exchange rate was equal to Rb27.5 per $1. Starting from the 2008 crisis and during the subsequent period of lower prices of oil till September 2014, the average exchange rate remained at the level of Rb31.1 per $1. The currency crisis of 2014 and the subsequent long-term depreciation of prices of oil up till now led to the stabilization of the exchange rate at the level of Rb61.7 per $1. Finally, as a result of the financial crisis of 2020 the average ruble exchange rate amounted to Rb74.2 per $1 starting from the beginning of this year.

Russian companies' equity prices depend largely on prices of oil. From September 1995 till February 2021, the determination coefficient (R^2) between monthly values of the RTS index and Brent oil prices was equal to 0.75 (*Fig. 64*), which indicates close correlation between these indicators. The price of oil still has a considerable effect on the exchange rate, too, particularly, in case of one or other price shocks on the market.

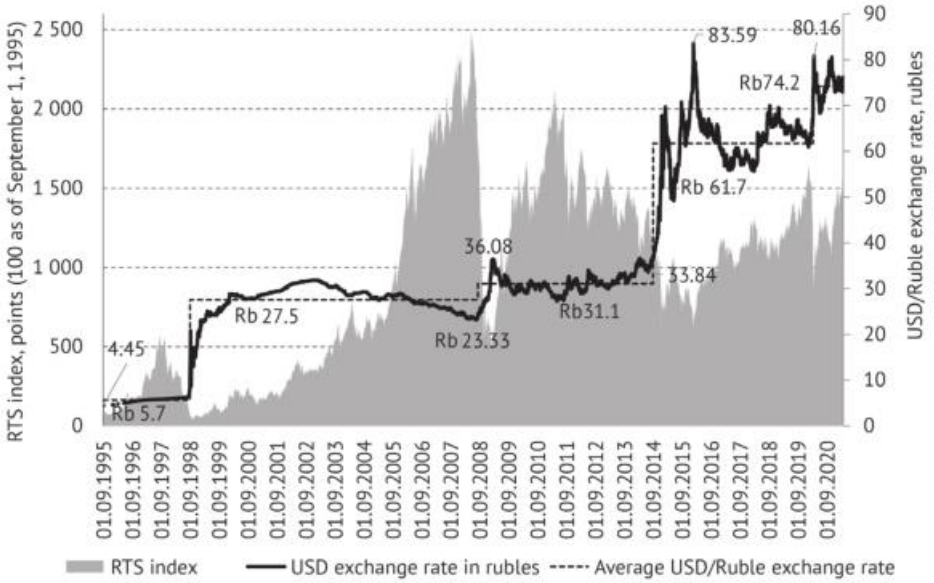


Fig. 63. RTS index and the ruble exchange rate, September 1, 1995 – March 25, 2021

Source: own calculations based on the data of the RF Central Bank and the Moscow Exchange.

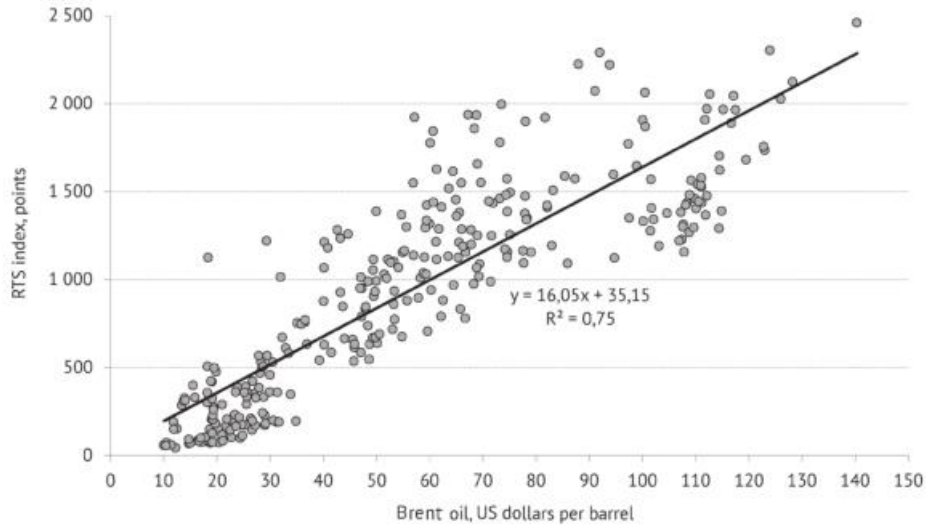


Fig. 64. Correlation between the RTS index and Brent oil price, September 1995-February 2021

Source: own calculations based on the data of the Finam company and the Moscow Exchange.

Substantial risks to the financial market are still posed by sanctions though their impact on market participants' behavior is rather limited at the moment. The main channels of sanctions' impact on the financial market are limitations on the volumes of borrowings by Russian companies, appreciation of the cost of borrowed funds and outflow of foreign investments from the equity market. The existing sanctions and current expectations of tougher sanctions prevent large companies and the government to borrow on global markets and consequently hinder investment activity of the business.

Finally, one of the risks of the Russian stock market is an increase in the load of state regulation of the market when households' main savings are used for funding investment projects selected by various agencies and a direct ban is imposed on individual investors' investments in foreign assets. On the back of these measures, households may lose interest in investments and paternalism of individuals as regards financing of their own pension schemes will increase.