Factor Analysis of the Russian Stock Market

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Abstract: A quarter of a century after the first Russian joint stock companies were set up, the Russian equity market has become the leading market in Eastern and Central Europe. Russia has a state of the art trading and settlement system, with the Moscow Exchange (MOEX) being its centerpiece. The Russian joint stock companies successfully introduce the best practices of corporate governance. The accounting system is becoming more and more adequate and transparent. However, in the last decade the Russian stock market has demonstrated one of the worst returns in the world among the 20 largest economies. Judged by the main indicators (P/E, P/B, Dividend Yield) the Russian market looks very much undervalued.

The authors analyze the causes of this situation, define the factors which impact most the Russian stock market (the ownership structure, volatility, dividend policy, the role of foreign investors, correlation with oil prices) and make the conclusion that the most important factor has been the sanctions imposed upon the largest Russian companies after 2014.

Keywords: Stock market, Russia, financial markets, emerging markets, regulation.

1. INTRODUCTION

In autumn 2017, the Russian equities market (we use the terms stocks, equities and shares interchangeably) celebrated its 25th anniversary. The large-scale privatization that started in 1992 gave birth to joint stock companies, whose securities are traded in Russia and abroad (in the form of GDRs and ADRs)**. The period is long enough to evaluate the results, especially if one tries to compare them with China, since the Chinese stock market began to develop intensively at approximately the same time.

Since its inception in 1992, the Russian securities market has grown to become one of five leading emerging markets. The total capitalization of Russian companies is comparable to South Korea, Brazil and India. In the beginning of 2008, the capitalization of Russian companies reached US$ 1.5 trillion or nearly 100% of the GDP – nearly the level of the mature markets. In 2005-2007, the Russian stock market demonstrated the annual growth of 30-40% and was one of the best in the world in terms of return.

By 2007, the liquidity of the stock market had radically improved. Judged by the value of share trading, the MICEX (Moscow Interbank Currency Exchange, now – Moscow Exchange) had become the largest stock exchange in Eastern and Central Europe (Rubtsov 2013).

The situation had drastically changed in 2008 when the Russian stock market, measured by the RTSI index, plunged fivefold. In 2018, it was still more than two times lower than at its peak in early 2008 (Figure **1**). The domestic market capitalization of Russian equities in dollar terms in 2014-2017 was US$ 448 - 623 billion (Table **1**). The number of domestically listed companies has been shrinking every year since 2010, falling to just 230 at the end of 2017 (Table **2**). The value of equity trading in 2017 halved in comparison to 2011, being stable in ruble terms, (but we should take into account the devaluation of the ruble during this period).

Judged by the traditional indicators of P/E, P/B, Div.Yield, the Russian stock market looks extremely undervalued (Table **3**).

What are the reasons for these results and what are the main factors affecting the Russian stock market? In responding these questions, we will demonstrate that the performance of the Russian stock market has been profoundly influenced by the international sanctions imposed on the Russian economy in 2014 following the accession of Crimea into Russia.

2. THE STOCK MARKET AND ECONOMIC DEVELOPMENT

The importance of the stock market (and of financial markets in general) has been widely discussed in the

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**Some early steps in the development of the Russian stock markets before 1992 have been observed in Rubtsov (2013), Kuznetsova, Kuznetsov, Mirkin (2011)

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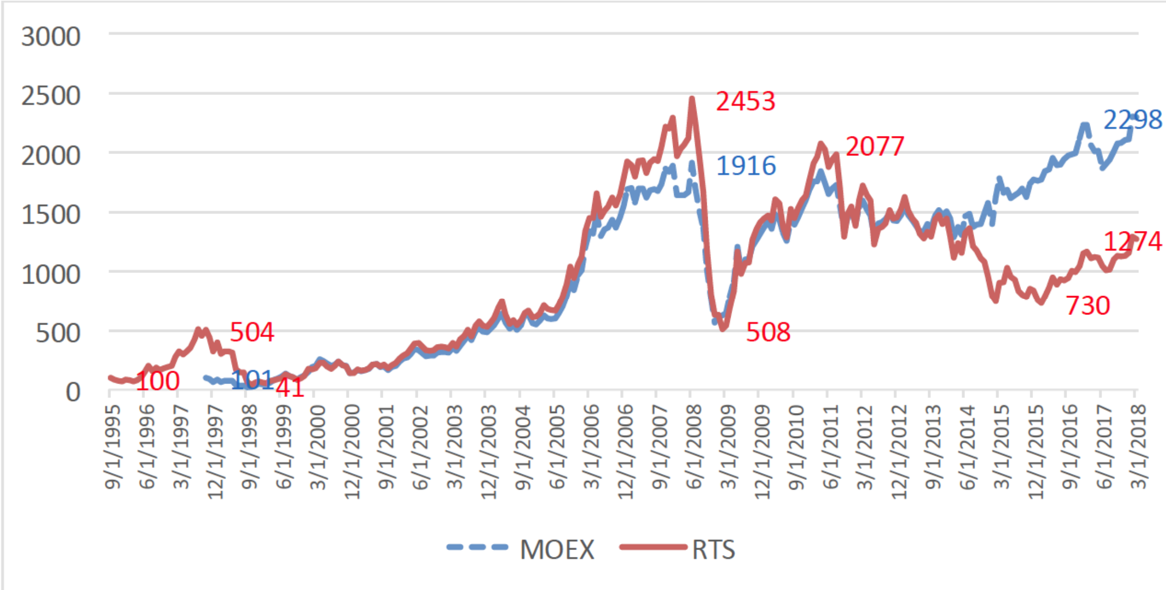

Figure 1: RTS and MOEX 01.09.1995-01.03.2018*.

*At the beginning of the month. RTS 1.09.1995 = 100, calculated in dollar prices; MOEX (previously MICEX) 22.09.1997 = 100, calculated in ruble prices.

Source: Thomson Reuters Datastream.

Table 1: Capitalization of the Selected Developed and Emerging Markets, Millions of US$, End of the Year

Country	2000	2005	2007	2010	2013	2014	2015	2016	2017
USA	15104	17001	19923	17283	24035	26330	25068	27352	32120
Japan	3157	4573	4331	4100	4543	4378	5042	4955	6223
France	1447	1713	2740	1748	2288	2128	2088	2180	2765
Germany	1270	1221	2105	1430	1936	1739	1490	1548	2262
Italy	768	798	1073	563	619	595	626	586	771
China	591	402	4479	4027	3949	6005	7651	7312	8712
India	143	553	1819	1632	1139	1558	1480	1567	2351
Korea	148	718	1123	1092	1235	1213	1200	1254	1772
South Africa	204	549	828	925	943	934	827	951	1231
Brazil	204	475	1370	1546	1020	844	588	759	955
Russia	**41**	**531**	**1334**	**1001**	**771**	**448**	**473**	**622**	**623**
Saudi Arabia	68	646	519	353	467	483	421	449	451
The world	*32105*	*42932*	*63865*	*55025*	*62000*	*68188*	*67269*	*70157*	*85471*

Source: S&P, World Federation of Exchanges.

literature (Goldsmith 1969; King and Levine, 1993; Franklin and Gale, 2000; Beck, Demirgüç-Kunt and Levine, 2000, 2001, 2002; Demirgüç-Kunt and Levine 1999; Demirgüç-Kunt and Maksimovic, 2000; Levine 2002, 2004; Rajan and Zingales, 1998, 2000, 2003).

Their research shows that the stock market has a special significance for technologically intensive companies and the development of new knowledge. One of the reasons why the US is so successful in developing new industries is the presence of a highly sophisticated stock market in the country. In general, available data reveal that the business environment in countries with market-based financial systems offer greater support to start-ups than the business environment in countries with a bank-based system.

Table 2: The Number of Domestically Listed Companies of the Selected Developed and Emerging Markets, End of the Year

Country	2000	2005	2010	2013	2015	2016	2017
India	5853	4763	5034	5294	5835	5820	5478
USA	7281	5145	4279	4180	4381	4331	4336
Japan	2561	2767	2690	3408	3504	3541	3598
China	1035	1377	2063	2489	2827	3052	3485
Korea	702	1619	1781	1798	1948	2039	2114
France	808	664	684	657	669	661	799
Germany	744	648	690	639	555	531	450
Brazil	464	342	373	352	345	338	335
Italy	291	275	332	292	310	312	332
South Africa	583	348	352	322	316	303	294
Russia	**249**	**277**	**316**	**287**	**251**	**245**	**230**
The World	*44137*	*44999*	*45000*	*45000*	*46719*	*48291*	*44087*

Source: S&P, World Federation of Exchanges.

Table 3: The Selected Performance Indicators of National Stock Markets

Country	Div.Yld., %	P/E	P/B	Number of companies
France	2.9	14.5	1.8	87
Germany	2.63	12.0	1.8	80
Japan	1.91	15.2	1.5	509
USA	1.93	21.9	3.3	614
Brazil	2.98	18.5	2.1	80
China	1.8	13.6	1.8	262
India	1.42	23.2	3.2	139
Russia	5.16	8.2	0.7	40
South Africa	2.86	21.3	2.4	82

Source: FTSE Index Series Monthly Review, April 2018, p.1-4.

This is also true of Russia. The importance of the stock market for the development of new industries in the case of Russia can be illustrated by the following facts. The creation of the mobile communication industry in the country was attributed to a large extent to equity finance. The first IPO in modern Russian history was executed in 1996 by the mobile phone company Vimpelcom (although that was done at NYSE). Together with the current largest cell operator MTS, Vimpelcom is among few Russian companies traded at US stock exchanges (in the form of ADRs).

In the 1990s, in Russia persistent efforts were made to create an efficient stock market and to develop financial institutions necessary for its smooth and successful operation (broker-dealers, investment funds, pension funds). The young reformers who occupied important positions in the Russian government in the early 1990s understood the importance of the stock market and had the US model of the market economy (including the financial market) as a blueprint.

But the reality proved to be different. The stock market as an investment mechanism began to function only in 2002 when the media company RBC (RosBusinessConsulting) launched the first ruble IPO. Some other companies followed suit. The amount of funds thus mobilized was limited ($13-14 million in 2002 and 2003, $300 million in 2004 and 2005, $1.5 billion and $14 billion in 2006 and 2007), especially compared to some other emerging markets, China and India in particular. More resources were raised through selling equity in foreign markets in the form of depository receipts - nearly US$50 billion in 2000-2007. However, unlike the US and other countries, in Russia most shares were issued by companies in traditional industries. The international financial crisis of 2007-2009 has damaged this money accumulation mechanism and in the second half of 2008 new issues stopped abruptly. The IPO/SPO market remained frozen in Russia for several years. In 2011-2013 one could see a certain revival of the market. In 2014-2015 there was a new interruption caused by the accession of Crimea, war in Donbass and the sanctions imposed on Russia. The signs of a weak recovery emerged in 2016-2017. In 2017, 16 public offerings took place on the Moscow Exchange raising 258 billion rubles ($4.4 billion). It is evident that the Russian stock market plays an insignificant role in the supply of firms with investment capital. The ratio of “stock issuance/gross fixed capital formation” in Russia was only 0.1-1.8% in the last ten years.

3.THE REASONS FOR THE CURRENT STATE OF THE RUSSIAN STOCK MARKET

Despite the efforts of the young Russian reformers of the 1990s the financial system of Russia has developed as bank-based, with banks in control of 90% of all financial assets accumulated by the financial institutions (excluding the Central Bank). Institutional investors are very weak, investing mainly in fixed income securities (Figure **2**), see also below.

The main source of domestic external funds for Russian companies is bank loans. But the banks are not strong enough to finance investments. Their cumulative_assets are less than those of any top 15 global bank; the largest Russian bank, Sberbank, is in the 59th place among the world largest banks (The Banker: “Top 1000 World Banks 2018”). Their investments in stocks are insignificant and they provide mainly short-term loans to business enterprises.

Household savings in Russia are small, primarily because of the low income of the vast majority of the population. The savings are mostly concentrated in banks (60% are kept in the state owned Sberbank) as ordinary people trust them more than other financial institutions. Besides, the savings are highly concentrated: one per cent of personal bank accounts hold about 60% of all deposits by physical persons.

The population in Russia has no tradition of saving. In the centrally planned economy due to the directive distribution of the national income there was no need (and no money) to save neither for retirement, nor for the loss of health or the job. The state guaranteed a certain minimum level of pensions and medical care while the wages were kept at a low level. Besides, the Russian population is mindful of the long history of state induced financial expropriations in the XX century and the recent devaluations.

All this suggests that funds available for investment in stocks and other securities are extremely limited. In 2017 only 1.3 million Russians had brokerage accounts (Russian Stock Market: Events and Facts 2017, p.47). This is less than one per cent of the total population. By comparison, in the developed countries this share is between 6 and 35 per cent.

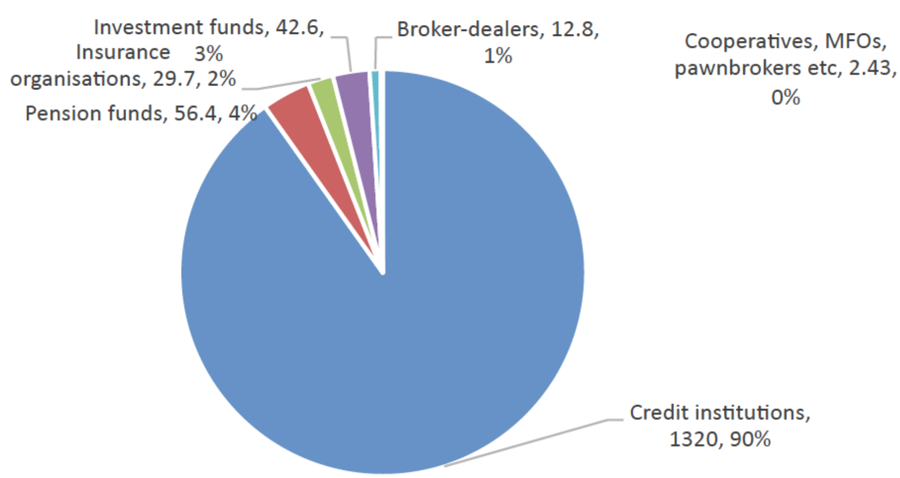

Figure 2: Financial institutions assets. 2016.$ bln..; per cent.

Source: Bank of Russia Annual Report 2016. Ruble figures converted into dollars.

With little savings available internally, an obvious solution for enterprises is to find them in the international market. In fact, for many years foreign portfolio investors were the driving force in the Russian stock market. In 2007 portfolio investments in Russian equities (IMF statistics - international investment position) exceeded $300 billion. After 2014 and the imposition of sanctions the inflow of foreign portfolio (as well as direct) investments has drastically decreased and in 2014 – 2017 the figure fluctuated between 100 and $160 billion. The main reason is the uncertainty induced by political factors.

The Russian stock market used to be one of the most volatile in the world. That feature was repeatedly studied and explained (Mirkin 2002, 2011, Kuznetsova, Kuznetsov, Mirkin 2011). The average daily standard deviation of the RTS index in 1998 was 4.8% , in 2005 and 2007 - 1.3-1.4%, in 2008 - 4.2% (Russian Economy in 2008, p.509-510; Mirkin 2002). In the recent years, however, the volatility of the Russian stock market has become comparable to the mature markets: in 2012-2013 the daily volatility was 1.6%, in 2014-2016 - 1.9% and in 2017 only 1.1% (authors' calculations). Low volatility should attract longer-term investors, but this does not happen. The influence of other factors is much stronger.

The ownership of Russian companies is highly concentrated. In most cases the majority owners are the state or super rich individuals (the so-called oligarchs). The highest free float of Russian companies is that of the retailer Magnit 66% and Moscow Exchange 58% (https://www.moex.com/ru/listing/free-float.aspx), for the whole market the figure is 25-30%. The owners in many cases are not very interested in the appreciation of their companies' shares, being confident that minority shareholders will not be able to dismiss them. They are mainly concerned with managing the financial flows in own interests. This serves as a negative factor for the Russian stock market and suppresses its liquidity.

The government announced its intention to sell off its holdings in public corporations, but the depressed stock market makes privatization unprofitable and it has been postponed.

Because of the existing ownership structure, the controlling owners in many cases are not worried about paying low dividends to the shareholders. Until the middle of previous decade (2000s) in Russia the payment of dividends was an exception rather than a rule. The situation has changed, at least in the largest companies, but still the dividend payout ratio in Russia is low compared to market-based financial systems - 25-30% for the 10 largest public companies in 2014-2017. Since 2013, the government has obliged the government-controlled public companies to pay a certain share of profits as dividends. Initially, it was 25%; from 2018 the figure is 50%. However, the largest companies (Gazprom, Rosneft) find ways and excuses not to pay in full.

Nevertheless, as indicated in the beginning, the dividend yield in Russia looks attractive to the investors.

The industry structure of the Russian stock market capitalization reflects the structure of the current Russian economy characterized by the predominance of the extracting industry. Oil, gas and electricity production account for 49% of Russian capitalization. Together with metals, financials and communication they account for 91% of capitalization. The share of manufacturing industry is negligible, just 2.5%.

It is not surprising that the Russian stock market is highly correlated with the price of oil (Figure **3**). For the entire period from September 1995 to February 2018 the correlation coefficient was 0.88. The calculations were executed on the basis of absolute figures. Classical analysis on the basis of log returns yields opposite results, which contradicts common sense, so we decided to use absolute figures. During the crises of 2008 and 2014 the correlation increases.

The Russian market showed a slight weakening of the dependence on the world oil prices in 2005-2007 (correlation - 0.76) and in 2009-2013 (correlation 0.74).

The rise of oil prices in 2017-2018 is the main factor, supporting the Russian stock market.

The period of 2005-2007 was quite advantageous for Russia both in terms of international conditions and the situation inside the country. This resulted in increased interest of foreign investors in the Russian market in general and in industries not associated with the extraction and processing of hydrocarbons in particular. Russian investors were also interested in the stock market. However, the global financial crisis and growing tensions in international relations that took place in 2008 caused a massive withdrawal of investors from the Russian market and a slump of the RTS index - in the second half of 2008 its value decreased five times.

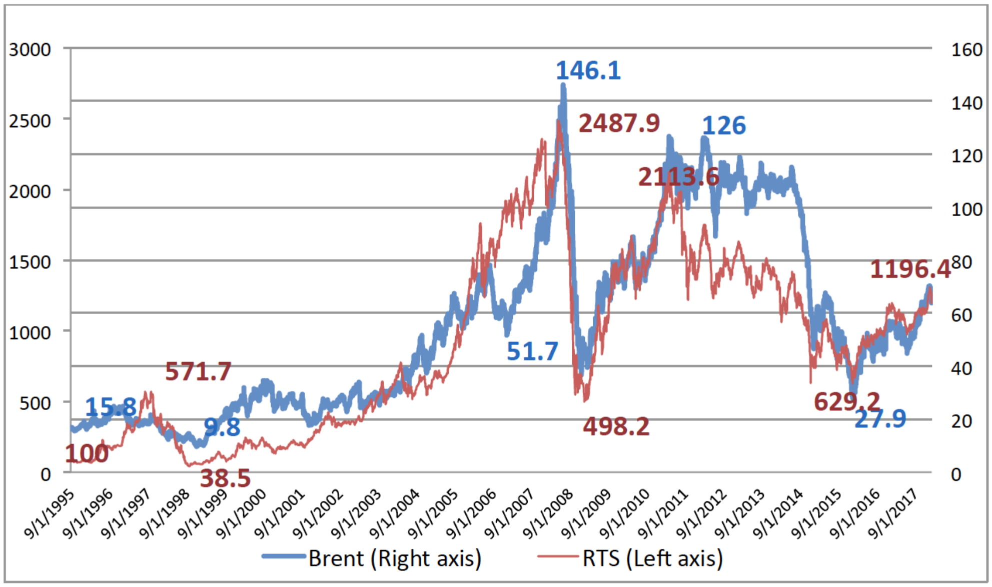

Figure 3: Price of Brent ($/barrel) and RTSI 01.09.1995-09.02.2018. daily.

Source: Thomson Reuters.

World oil prices are the dominant factor affecting the Russian stock market. but it would be unfair to ignore the positive market reaction to the Russian authorities' efforts aimed at improving the market infrastructure and its regulation. We believe that the impact of this factor was very significant in 2009-2013. In 2011. after serious preparation and several rounds of discussions with the professional community of legislative initiatives, three federal laws aimed at harmonizing the requirements for the activities of financial infrastructure institutions by the Russian regulators with the requirements for similar financial institutions in international practice were simultaneously adopted. This reduced operational risks in settlements (clearing) and increased the level of protection securities owners' rights in the depositary accounting system.

The adoption of the federal law "On Clearing, Clearing Activities and the Central Counterparty" on February 7, 2011 significantly brought the settlement conditions for transactions with financial instruments to standards familiar to global investors. The specifics of transactions with financial instruments, including equities, is a significant gap in time between the moment the transaction was concluded (the moment when the parties reached an agreement on the material terms of the transaction, having assumed the corresponding obligations) and the moment of settlement and the delivery of assets on the basis of accepted obligations. Prior to the coming into force of the law "On Clearing, Clearing Activities and the Central Counterparty," transaction participants took on not only traditional risks associated with work in the stock market, but also specific regulatory risks of the Russian market caused by the lack of legitimization in practice and application at the level of federal laws of such specific concepts as clearing, clearing pool, collective / individual clearing maintenance and a number of other specific concepts, routine in the international practice of clearing activities in traditions and customs in business and civil turnover. This circumstance was estimated by foreign investors as an additional risk factor, which has a very significant impact on the size of limits opened for Russian financial instruments and for Russia as a whole.

It is especially worth emphasizing the importance of introducing business transactions in the Russian stock market involving a central counterparty. The status of the central counterparty, its competencies and functions was first determined by the said law. The institution of the central counterparty, acting as buyer for all sellers and a seller for all buyers who concluded transactions in compliance with the corresponding conditions, is absolutely new phenomenon for the Russian market. The introduction of this institution into the daily practice of business turnover in the stock market led to a significant reduction in the probability of default on obligations under transactions. Most brightly, the effectiveness of the central counterparty institution was manifested in REPO transactions: in 2017, repo transactions with a central counterparty accounted for more than the total turnover of repo transactions (XXI Review of the Russian REPO Market, p. 6).

Legislative leveling among the depositary institutions of the central depository (the federal law of December 7, 2011 "On the central depositary") and the creation of a functioning increased reliability regime in relation to it (in comparison with other accounting institutions of the Russian financial market) with simultaneous allocation of a number of exclusive powers to it, including when working with global non-resident investors and securities of foreign issuers, significantly reduced the risks of securities, transferred to depositary institutions. In addition, the time and costs for the delivery of securities in fulfillment of obligations under transactions were reduced. At the end of 2017, the value of customers' securities on the accounts of the National Settlement Depository - the central depository of Russia - was more than 39 trillion rubles (nearly $ 680 bln.), including more than 5 trillion - securities of foreign issuers. (NSD Annual Report 2017).

Traditionally, the issues of corporate governance in joint-stock and other companies are problematic for the Russian stock market. This is due to the insufficient maturity of corporate law in Russia as an independent branch of civil law. The emergence of the central market depository had a positive impact in this direction: in connection with the growth in the number of securities of foreign issuers, the growth of corporate actions initiated by the NSD was also observed, in 2017 it was 84% compared to the previous year. (NSD Annual Report 2017).

Currently, the NSD is actively introducing e-voting services into the practice of holding annual meetings, which will significantly reduce the possibility of interference by interested parties in vote counting procedures in order to distort the results of voting.

The market reacted to the positive changes in settlement infrastructure with some growth and attempts to "get rid" of the oil prices impact - in the 2009-2013 period the correlation coefficient was 0.74, the RTS index increased by 42%.

The activity of institutional investors and, in particular, of pension funds (the latter in countries with a funded pension system) often has a decisive influence on stock markets in developed countries.

In Russia, neither insurance companies, nor investment funds, nor pension funds play any significant role in the stock market. According to NAUFOR (National Association of Stock Market Participants), as of the end of 2017, pension funds' volume of investment resources (in Russia they are called "non-state investment fund" - NPF) has reached 5.7% of GDP. (Russian Stock Market: Events and Facts 2017). Herewith pension funds traditionally invested in bonds, although after the softening of investment rules pension funds can invest up to 65% of their assets in shares. Shares percentage in pension portfolios of the management companies, according to NAUFOR, fluctuated insignificantly during 2005-2017. In the period of the stock market's rise in 2006, it amounted to only 1.1% in pension portfolios, in subsequent years, with the onset and expansion of the financial crisis, it fell to 0.39% (in 2008), reaching its lowest level of 0.06% and 0.05% respectively in 2014 and 2015 (Table **4**). In the fall of 2014 the panic drop of shares in pension funds was triggered by the shock ruble devaluation, related to the cancellation by the Russian monetary authorities of the currency corridor that existed for more than 20 years and the reorientation of monetary policy to target inflation rather than maintaining the exchange rate within the currency corridor. A sharp devaluation of the ruble in relation to the major world currencies (US dollar, euro) was caused by the implementation of these measures as well as the market drop and mass sales of Russian issuers' shares. Percentage of shares in pension portfolios was only 0.12% by the end of 2017. Meanwhile, pension funds clearly lack financial instruments to diversify their portfolios and have the resources to invest in shares: this is evidenced by the growth in the deposits share in rubles opened by pension funds in credit institutions. The current legislation allows to form the structure of the pension fund's assets according to the following limits: investments in shares - up to 65% of assets, in bonds - no more than 80% of assets, in deposits - no more than 20%.

The further development of pension funds in Russia, as well as their place in the stock market, will be determined, first of all, by the course of implementation of policy for the funded pension system development. Until now, this policy has been very inconsistent in this respect, as evidenced by the very low share of pension funds in the structure of Russia's financial institutions (Figure **2**).

Evaluating the results achieved in constructing the Russian stock market, we can mention the following:

A necessary trading infrastructure has been constructed; it is now quite efficient and developed even in comparison with the most mature markets.

Table 4: Structure of Management Companies' Pension Portfolios, in Percent at the End of the Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Securities	81	85.8	88.6	96.8	84.1	87.1	80.9	76.4	81.1	83.4	81	77.1	78.1
including:													
Shares of Russian companies	0.6	1	1	0.4	0.8	0.7	0.4	0.3	0.2	0.1	0.1	0.1	0.1
Deposits in rubles	0.2	0.2	0.2	0.3	1.5	7.8	10.3	15.2	7	14.7	16.6	12.1	13.6
Other assets	18.2	13.0	10.2	2.5	13.6	4.4	8.4	8.1	11.7	1.8	2.3	10.7	8.2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

(Table **4** was compiled by the authors according to the section "Composition and structure of management companies' pension portfolios " of NAUFOR official site http://nlu.ru/struct-portfolio.htm?inc_stateuk=on).

Professional intermediaries and their staff are sufficiently competitive and can effectively perform their functions.

The legislation is detailed and meets the best international standards.

However, the market still does not work as a monetary machine transferring financial resources from savers to investors and most importantly, contributing to gross fixed capital formation.

The disappointing situation with the Russian stock market is a reflection of the situation in the Russian economy as a whole and predominantly is a result of political and geopolitical causes.

Among several specific obstacles to the development of the Russian stock market analyzed in this article, the political dimension is of overwhelming importance. In the case of Russia, the growth of the stock market is curbed by the current US and EU sanctions against the largest Russian companies and probably even more by the fear and uncertainty regarding the future relations of the Russian government with the current centers of economic power.

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