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FINANCIAL STABILITY REVIEW

Information and analytical review

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Contents

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12 Neglinnaya St., Moscow 107016, Russian Federation
Bank of Russia website: www.cbr.ru

SUMMARY

The structure of key risks and vulnerabilities in this issue of the Financial Stability Review (Q2-Q3 2019) has not changed substantially. The main risks are attributed to external factors, predominantly the tightening of trade and geopolitical tensions and, as a result, deeper slowdown of economic growth. Lower demand for Russian export commodities negatively affects the growth rate of the Russian economy. External environment and global financial market conditions also exert pressure on internal financial market and financial system. Currently, the situation is rather stable, but surges of volatility occur from time to time. Overall, short-term external risks lowered, whereas long-term risks increased against the backdrop of "low for longer" interest rate policies of major central banks. The set of internal vulnerabilities, which may lead to materialization or aggravation of financial stability risks also remain unchanged. Increase of debt burden against the slow growth of disposable income is one of the key vulnerabilities. Banks' exposure to interest rate risk is still high. Besides, concentration of banks' loan portfolio in largest companies persists, however this vulnerability is not described separately in this report, the Bank of Russia continues to study the issue and together with banks develop approaches to identification of highly indebted companies (see section 2.2.3 for more details).

1. External and internal risks of the economy and financial system

Since the publication of the previous Financial Stability Review, the outlook of global economy growth has considerably worsened. According to the International Monetary Fund's forecast as of October 2019, the global GDP growth in 2019 can slow down to 3%, which is the lowest level since the financial crisis of 2007-2008. Global economic slowdown is partly connected to cyclical factors (mainly the end of the upward phase of the US economic cycle) as well as to the tightening of trade and geopolitical tensions in the world (including the introduction of new tariffs by the US and China and uncertainty caused by another Brexit delay).

Under these circumstances, ambivalent trends were observed in terms of financial stability in the reporting period. On the one hand, short-term negative effects due to downward changes in growth expectations were offset by the reduction of policy rates by major central banks (US Federal Reserve and European Central Banks) and restoration of the ECB's asset purchase program. On the other hand, medium- and long-term risks persist and even grow due to uncertainties about the impact of trade wars on economy and financial sector as well as long-term impact of accommodative monetary policies on financial stability (including growth in debt burden of non-financial sector in leading economies and negative impact of low interest rates on profitability of financial institutions).

Russia is deeply integrated into the global economy and is not isolated from external threats. Amid global economic growth slowdown, the increased volatility in the external financial markets can be transmitted to the Russian financial market, although its sustainability increased in recent years. US sanctions imposed in August (prohibition to participate in the initial offerings of Russian Government Eurobonds) did not have a significant effect on the Russian financial market. The budget rule contributes to reduction of Russia's dependence on oil prices dynamics. At the same time, the risk of oil prices decline remains significant, especially amid global economic slowdown. Currently, geopolitical factors support oil prices, but their role can become less prominent. The decline in demand in China and increased oil production in the US (according to the US Department of Energy, US oil production is expected to rise to a record 12.24 million barrels per day in 2019) can have increased impact on oil prices.

In the first half of the year the situation in the Russian economy has somewhat aggravated, including due to the global slowdown. The decline in external demand for Russian export commodities, sluggish investment activity and temporarily tightened budget policy (decrease in the extended budget expenditures in real terms in the first half of 2019) continue to negatively affect economic growth. Amid slow growth of household real disposable income, during the reporting period the annual growth of retail trade turnover deaccelerated (at the same time, in October 2019 there was acceleration of the mentioned indicator). Due to these factors, the risks in corporate and retail lending continue to persist. At the same time, a number of internal vulnerabilities in the financial system is still relevant and can potentially lead to materialization of financial stability risks.

2. Vulnerabilities of the financial system

Vulnerability 1. The growth of the population debt burden

Against the background of the measures introduced by the Bank of Russia, the growth rate of unsecured consumer lending has declined slightly. The annual growth rate decreased to 23.5% as of 1 October 2019 (from the maximum level of 25.3% as of 1 May 2019). The share of non-performing loans has reached its minimum level over the last five years (8.1% as of 1 October 2019). Nevertheless, in some banks, growth rates of NPLs outpaced loan portfolio growth rates (these banks account for 13.1% of the market). Early warning indicators show a slight decrease in the quality of unsecured loans issued during the period from the end of 2018 to the beginning of 2019, but the loan quality still remains close to its historical maximum. The analysis of credit history bureau data (on individual agreements level) reveals that in recent years the increase in debt burden took place in large part due to new borrowers, who had not had debt obligations before. In particular, 45% of borrowers with outstanding consumer loan as of 1 September 2019 did not have any outstanding liability on consumer loans at the beginning of 2017.

At the same time, from the beginning of 2019 banks have softened credit underwriting standards through issuing loans to borrowers with increased debt burden. Simultaneous use of different credit products has become increasingly popular with borrowers. In particular, a share of mortgage borrowers who have other loans increased from 39% at the beginning of 2015 to 46% as of 1 September 2019. The change of economic cycle phase can lead to an increase in consumer loans arrears.

Sustainability factors and actions taken

1. *Unsecured consumer lending.* In June 2019, the Bank of Russia introduced add-ons to risk-weights on consumer loans depending on the effective interest rate (EIR) and on the debt service to income (DSTI) which applied to new loans issued from 1 October 2019. This measure contributes to higher capital buffers of banks and demotivates them from issuing loans to highly indebted borrowers. Capital buffer established by add-ons on unsecured consumer loans amounts to 0.44 p.p. of capital adequacy of the banking sector (if the add-ons are reduced to zero the capital adequacy will be 0.44 p.p. higher than the current value). The amount of capital buffer built by banks through new add-ons that took effect starting from 1 October 2019 is sufficient to absorb significant part of losses from risks equivalent to those, which materialized in 2014-2015. Furthermore, there are envisaged measures for debt restructuring for borrowers with high debt burden. Banks may not recalculate the DSTI ratios on restructured loans for borrowers who have problems with servicing their debt.

2. Mortgage. In the mortgage market, due to the adopted macroprudential measures, the share of loans with a small downpayment (from 10 to 20%) decreased (from 40.7% in Q1 2019 to 35.9% in Q2 2019). The quality of mortgage loans is still historically high. The share of overdue debt on mortgage loans in rubles does not exceed 0.9% as of 1 October 2019. The estimated share of consumer loans, which borrowers can use as a downpayment on a mortgage loan, does not exceed 5%.

Vulnerability 2. Dollarization of the banking sector

- The share of FX loans in the banks' assets reduced. This limits the exposure of the Russian economy to external shocks. At the same time, the share of deposits of individuals in foreign currency remained stable in recent months (about 21%).

Sustainability factors and actions taken

On 1 July 2019, the Bank of Russia increased mandatory reserve requirements for FX liabilities to individuals by 1 p.p. (up to 8.0%). As well, the Bank of Russia in cooperation with the Ministry of Finance of Russia is planning to propose the legislative reduction of the marginal deviation of interest rates on FX deposits from the base rate of return on FX deposit, over which banks pay additional and increased additional insurance premiums, which will also limit the growth of FX deposit rates.

- A possible growth of FX deposits is a source of interest rate risk for banks with a breakdown by currency, since, according to Russian legislation, the potential for lowering interest rates on banks' liabilities is limited by zero level floor, while the interest rates on many types of assets in many foreign currencies are negative. Against the backdrop of ongoing easing of the monetary policy of leading economies, the growing attractiveness of arbitrage contributes to an increase of the euro deposit portfolio of corporate clients at large Russian banks.

Sustainability factors and actions taken

Currently, the impact of negative interest rates in the Eurozone on the profits of Russian banks is negligible (losses from placing funds in European assets with negative returns correspond to 1% of banking sector profits). However, the implications may be more significant in the event of a further worsening of the situation in the Eurozone or if the US federal funds rate becomes negative. Due to requests of individual credit organizations the issue is currently being studied by the Bank of Russia.

Vulnerability 3. Dependence on external financing. Money market benchmarks reform

- The dependence of the government bond yields (and, as a consequence, other interest rates) on the behavior of foreign investors remains. In Q2 2019, as part of the carry trade strategy, foreign investors showed high interest in OFZ, but in Q3 their share in the market stabilized. In October, due to investors' expectations of easing of monetary policy and favourable external environment, an inflow of non-residents resumed and the share of non-resident investment into OFZ amounted to 32%[1] as of 1 November 2019.

Sustainability factors and actions taken

One of the factors that ensures the Russian OFZ market stability is strong demand for OFZ from domestic investors (including non-credit financial organizations and systemically important banks). The attractiveness of OFZ is primarily associated with a low level of total public debt, a high credit rating, a significant sustainability of the Russian budget under the budget rule and the preservation of the budget surplus along with the replenishment of reserve funds.

- The future of the LIBOR rate after 2021 remains uncertain. At this stage, the Financial Conduct Authority of the United Kingdom has reached an agreement with contributing banks on their participation in the publication of the rate until the end of 2021. The International Swaps and Derivatives Association (ISDA) is developing a number of measures aimed at supporting the derivatives market after 2021. In addition to choosing alternative rates, a mechanism for replacing

[1] *According to current data, as of November 27, the share of non-residents' investments in OFZs on accounts of foreign depositories in National Settlement Depository (NSD) amounted to 31.5%. The indicator is based on the incomplete sample and on average is 0.6 p.p. below the statistical data published on the Bank of Russia website.*

LIBOR in existing contracts is also being worked out. There are several possible scenarios going forward, however, market participants must take risks into account when entering into new contracts (including the risk of complete discontinuation of rate publication).

In the Russian market of derivatives with floating interest rate, LIBOR is the most widely used rate. As of 1 November 2019, the share of such contracts in the market of cross-currency swaps and interest rate swaps exceeded 36 and 57% respectively. LIBOR is also used in the corporate lending market, however, new loans with this reference rate are virtually not issued (no more than 11 billion rubles per quarter starting from 2017), which significantly reduces the risks for credit institutions after 2021.

Sustainability factors and actions taken

To reduce the exposure to the global risk of LIBOR cessation, Russian derivatives market participants who have references to LIBOR in contracts maturing after 2021 should transit away from LIBOR to alternative rates or introduce fallback provisions in contracts.

Vulnerability 4. Growth in the share of long-term assets against the backdrop of a significant share of short-term funding

Amid inflation slowdown and reduction of the Bank of Russia key rate by 0.75 p.p. in Q2–Q3 2019, banks decreased deposit and lending rates. Outpacing reduction of rates on short-term deposit market operations led to some growth of attractiveness of long-term ruble savings, however, banks' dependence on short-term funding (up to 1 year) is still significant and greatly exceeds the level of late-2014 (40%), accounting for 61.8% as of 1 October 2019. At the same time, an increase in long-term assets is observed, including consumer loans and mortgages. Therefore, the maturity mismatch increases, exposing credit institutions to interest rate risk. Moreover, a decline in lending rates will lead to higher demand for refinancing from borrowers, thereby increasing banks' interest rate risk.

Sustainability factors and actions taken

It is expected that, as the cycle phase of interest rate reduction in Russia ends, the banks will increase the share of long-term deposits by offering relatively higher deposit rates. The securitisation market development will facilitate long-term loan refinancing by banks.

3. Assessment of the sustainability of the banking sector

During Q2 – Q3 2019, one of the factors of systemic risks reduction in the banking sector was the improvement of quality of credit portfolio: the share of loans of quality categories IV and V reduced. Favourable factors include significant profits of the banking sector (1.5 trillion rubles as of 1 October 2019), an increase in the return on assets from 1.4% to 1.9%, and the return on equity – from 12.4% to 17.4% (for the period from 1 October 2018 to 1 October 2019).

Sustainability of the banking sector is characterized by the significant level of the capital adequacy ratio which ensures the accumulation of sufficient capital reserves (14.4% as of 1 October 2019, with the exception of banks that underwent financial recovery, -0.1 p.p. compared to 1 April, 2019). Macroprudential risk-weight add-ons provide higher capital adequacy: up to 0.8 p.p. for the banking sector as a whole and up to 4 p.p. for retail banks. Taking into account the implementation of macroprudential measures in certain lending segments the Bank of Russia Board of Directors decided to keep the national countercyclical capital buffer at the level of 0% of risk-weighted assets.

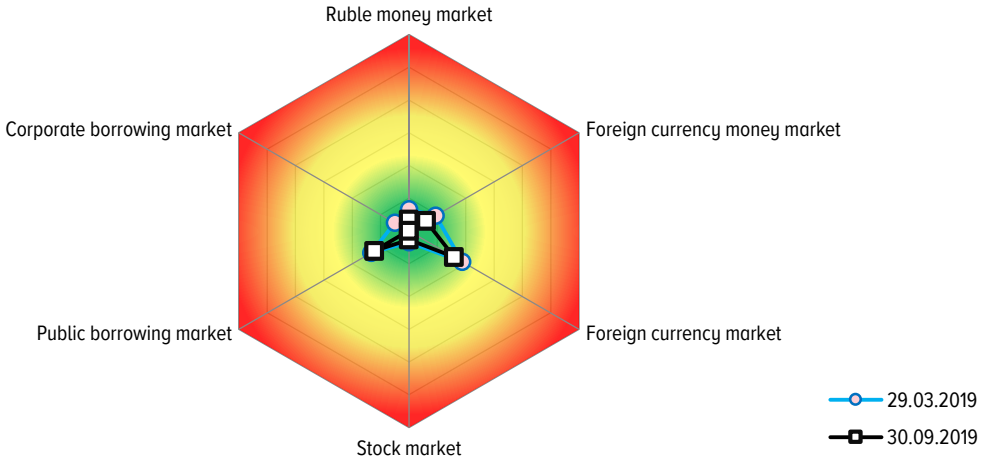
4. Assessment of the sustainability of non-credit financial organizations

Currently observed developments in various sectors of activity of non-credit financial organizations cannot lead to materialization of financial stability risks. At the same time, non-credit financial organizations are facing new challenges. Importance of climate risks increases for insurance sector, which entails the need for a qualitative assessment of disaster risk that requires inter-agency

cooperation. During the period under review, the dynamics of investment life insurance premiums showed signs of a stagnation. A large share of the contracts is sold through credit institutions. Amid the increase of pension reserves, the risks of concentration of assets remain relevant for non-governmental pension funds (a share of closed-end investment funds with assets in the form of securities issued by affiliated to NPFs entities is still high in the pension reserves portfolio). Operations between brokers and their affiliates (residents and non-residents) may become one of the vulnerabilities in the broker-dealer sector. Further improvement of regulation will mitigate the risks of non-credit financial organizations – introduction of a threshold value for the liquidity coverage ratio for brokers, new pension reserves investment rules and revised requirements to the insurers' sustainability.

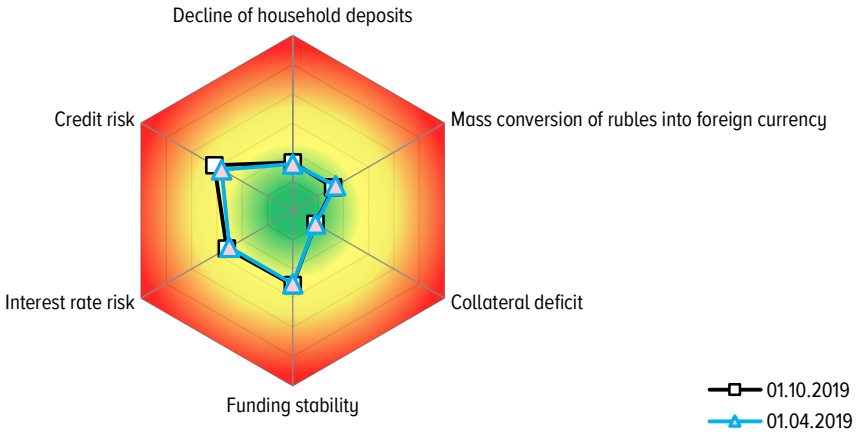
RISK MAP

MAP OF RUSSIA'S FINANCIAL MARKET RISKS *Chart 1*



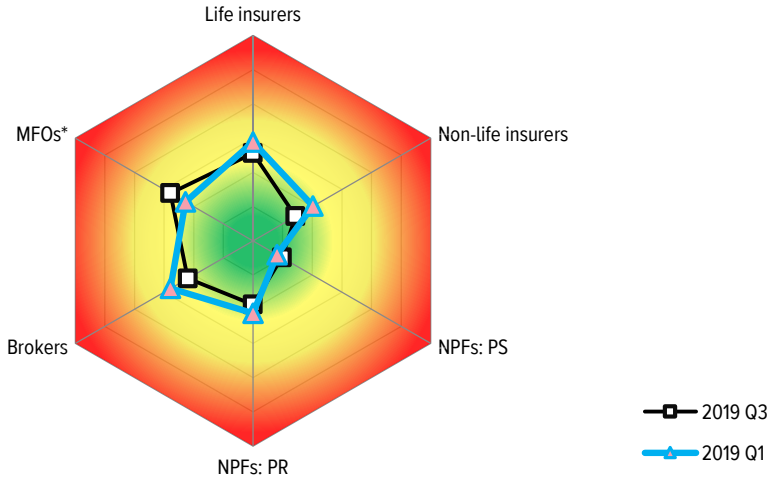
Sources: Bloomberg, Thomson Reuters, Cbonds, Bank of Russia calculations.

MAP OF RUSSIA'S BANKING SECTOR RISKS *Chart 2*



Source: Bank of Russia.

MAP OF NON-CREDIT FINANCIAL ORGANISATIONS' RISKS *Chart 3*



** Data on MFOs are presented for Q1 and Q2 2019.*
Source: Bank of Russia.

1. RISKS OF THE GLOBAL ECONOMY AND GLOBAL FINANCIAL MARKETS

Russia has been largely integrated into the world economy and interrelated with external financial markets; therefore, external market conditions are of great importance for the country's financial stability. Trade tensions during the reporting period led to worsened global growth rate prospects and had a suppressing impact on economic growth in many emerging market economies (EMEs), which is true for Russia as well. Despite small surges of volatility in external markets, the situation in the Russian financial market remained consistent. The situation in the markets stabilised rapidly thanks to the major central banks' (the US Federal Reserve, ECB) transition to monetary softening. On the one hand, such a stimulating policy supports stock index growth and helps decrease EMEs' bond yield. On the other hand, keeping rates low for longer may trigger further accumulation of vulnerabilities in the medium and long terms (including debt burden growth in the non-financial sector).

International organisations (the IMF, the World Bank and the OECD) have revised downwards their assessments on global GDP growth in the next few years. According to the IMF forecast as for October 2019, the global GDP growth rate this year may slow down to 3% (from 3.3% in April forecast). This figure is significantly lower than the rate of 3.6% in 2018 and is the weakest since 2009. A slowdown of growth rates is observed in all countries, both advanced economies and emerging markets (Table 1). On the one hand, world economy growth is slowing down amid the cyclical slowdown of economy growth in advanced economies (in the US and the euro area). On the other hand, the process is being intensified by aggravated foreign trade disputes between the US and China.

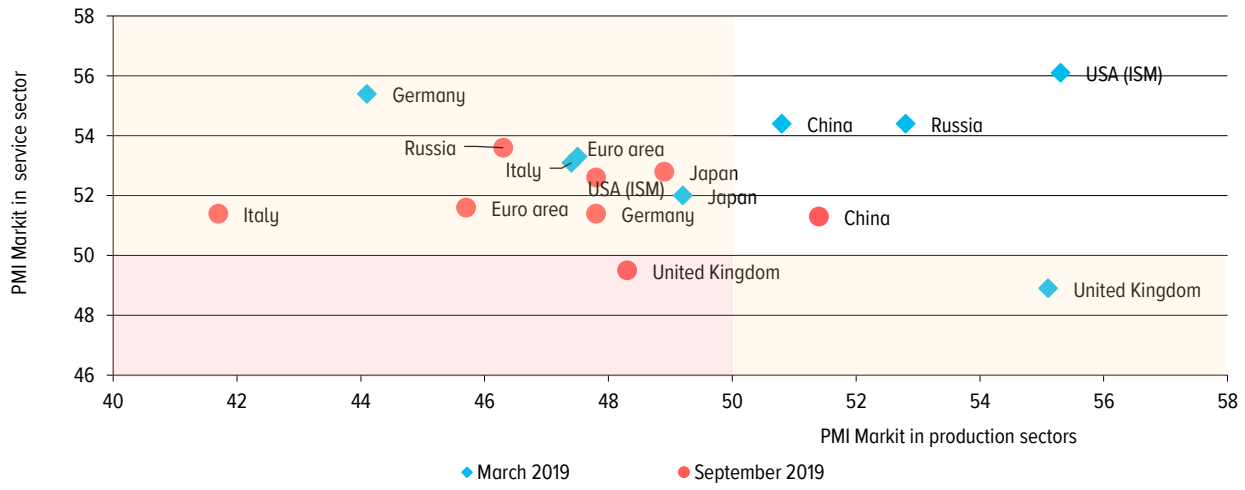
GDP GROWTH RATES (%), IMF FORECAST FOR OCTOBER 2019 *Table 1*

	2018 (%)	Forecast for October 2019 (%)		Deviation from April 2019 forecast (pp)	
		2019	2020	2019	2020
Global GDP growth rates	**3.6**	**3.0**	**3.4**	**-0.3**	**-0.2**
Advanced economies	***2.2***	***1.7***	***1.7***	***-0.1***	***0.0***
USA	2.9	2.4	2.1	0.1	0.2
United Kingdom	1.4	1.2	1.4	0.0	0.0
Euro area	1.8	1.2	1.4	-0.1	-0.1
Germany	1.5	0.5	1.2	-0.3	-0.2
Japan	0.8	0.9	0.5	-0.1	0.0
EMEs and developing countries	***4.5***	***3.9***	***4.6***	***-0.5***	***-0.2***
China	6.6	6.1	5.8	-0.2	-0.3
India	7.1	6.1	7.0	-1.2	-0.5
Russia	2.3	1.1	1.9	-0.5	0.2
Brazil	1.1	0.9	2.0	-1.2	-0.5
South Africa	0.8	0.7	1.1	-0.5	-0.4
Mexico	2.0	0.4	1.3	-1.2	-0.6
Growth rates of global trade in goods and services	**3.6**	**1.1**	**3.2**	**-2.3**	**-0.7**
Imports					
Advanced economies	3.0	1.2	2.7	-1.8	-0.5
EMEs and developing countries	5.1	0.7	4.3	-3.9	-1
Exports					
Advanced economies	3.1	0.9	2.5	-1.8	-0.6
EMEs and developing countries	3.9	1.9	4.1	2.1	-0.7

Source: IMF.

PMI MARKIT IN THE PRODUCTION AND SERVICE SECTORS IN THE LEADING COUNTRIES

Chart 4



Source: Bloomberg.

In August–September 2019, the parties announced a new round of tougher trade tariffs.[1] Against this background, the IMF has significantly revised its assessment of global trade growth rates for goods and services in 2019 downward to 1.1% (vs 3.4% in April) from 3.6% in 2018 and 5.7% in 2017 (Table 1).

Trade barriers are disrupting global supply chains, and growing concerns in the trade sector have a negative impact on business confidence and make it difficult to plan investment decisions. Amid such conditions, many companies in the leading economies are starting to reduce capital investments, which is leading to a drop in business activity in manufacturing (Chart 4). The situation in the service sector has remained stable so far, amid escalated threats that the manufacturing sector's issues may spread to the service sector as well. The consequences of the trade tensions have had the greatest impact on the European economy, which depends on global trade to a greater extent than the US (Chart 5). According to Eurostat data for Q2 2019, the EU's exports of goods and services accounted for 46.8% of GDP. At the same time, the US and China are the largest export markets for European countries. The risks of a slowdown in Europe's economic growth are also increasing due to the escalating trade conflict between the EU and the US.[2]

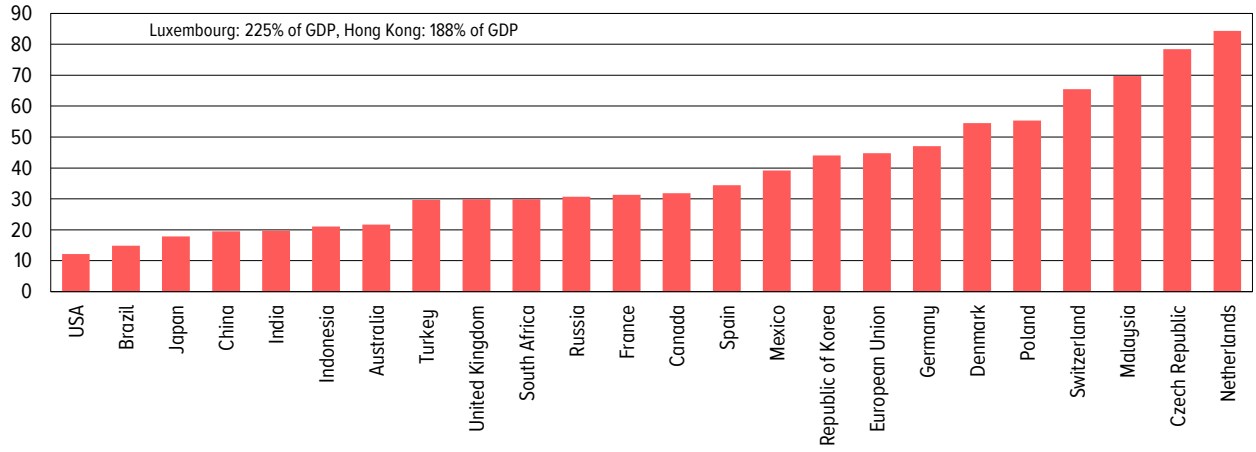
Besides tougher trade restrictions, a number of other international economic factors may lead to serious economic and financial shocks; in particular, the Brexit issue remains open (the exit date has been postponed until 31 January 2020). At present, the markets are not taking the possibility of a no-deal Brexit consideration. If such a risk materialises, it may cause a serious macroeconomic shock in Great Britain (according to the updated assessment by the Bank of England, in the worst-case scenario the British GDP will drop by 5.5%, which is a considerable decrease, although it is more optimistic than the last year's assessment of an 8% drop in the GDP). As a result, global markets may witness significant volatility growth, and additional support measures may be required from leading central banks.

[1] *The United States imposed tariffs of 15% on $125 billion worth of Chinese imports on 1 September, and it plans to levy 15% tariffs on $175 billion worth of goods from China on 15 December. The decision to increase tariffs on about $250 billion worth of Chinese goods from 25% to 30% has been suspended. China placed levies of 10% on $75 billion worth of US products on 1 September, with additional tariffs of 5% planned for 15 December along with tariff increases of 25% and 5% on cars and auto parts imported from the US respectively. Trade negotiations between China and the US continue. Currently, the first stage agreement is discussed.*

[2] *US tariffs of 10% and 25% on $7.5 billion worth of European goods took effect on 18 October (in a row over EU subsidies to Airbus).*

VOLUME OF GOODS AND SERVICES EXPORTS TO GDP IN 2018
(%)

Chart 5



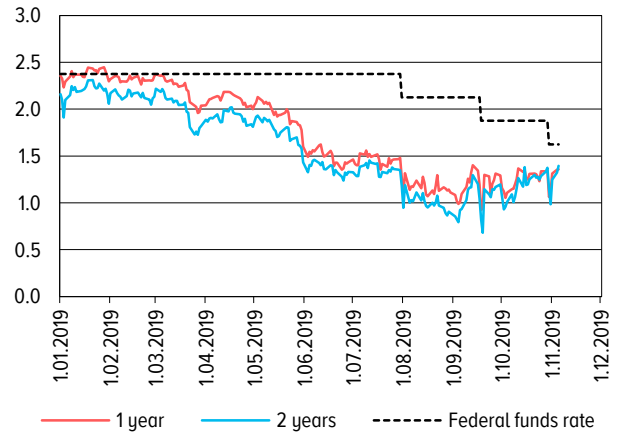
Source: World Bank.

Amid the increased risks of a slowdown in economic growth, leading central banks have transitioned to a monetary softening cycle.

- The US Federal Reserve has decreased the range of the target federal funds rate three times by 0.25 p.p. in July, September and October 2019 to 1.50–1.75%. However, the US Federal Reserve and market participants still differ in their estimates of subsequent rate dynamics. The regulator has signalled a possible pause in the softening of the monetary policy if the economic indicator dynamics do not change considerably. At the same time, futures market traders' quotes are based on the assumption of another decrease in the rate by 0.25 p.p. within the next year (Chart 6). The US Federal Reserve has also taken measures to relieve tension in the money market (the overnight repo rate went up in mid-September). For example, the US Federal Reserve decreased the interest rate on excess reserves (IOER) by 0.30 p.p. to 1.8%; it started to hold repo auctions, which are to take place at least until January 2020 (daily overnight repo operations and 14-day repo operations twice a week); and it has begun to purchase short-term treasury bills for $60 billion a month from 15 October through Q2 2020 (inclusive).
- At its September meeting, the ECB decreased the deposit rate by 0.1 p.p. to -0.5% and introduced a multi-tiered deposit rate system. Starting 1 November, the ECB also restarted the asset purchase programme at a monthly pace of €20 billion, which is expected to run 'for as long as necessary to reinforce the accommodative impact of its policy rates', and launched the TLTRO III programme. At the same time, the ECB expects the rates to remain at their current or lower levels until the inflation outlook reaches its target level of just under 2% (the rates were previously expected to remain at their prior level till the end of H1 2020). Market participants expect the deposit rate to stay at its present level of -0.5% for at least two years (Chart 7).

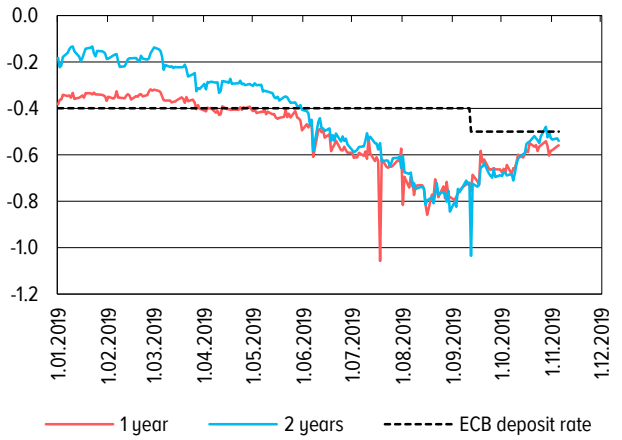
The dynamics of many global financial market indicators during the reporting period (Chart 8) were associated with growing concerns regarding global economy growth estimates and expected softening of policy by major central banks. In August 2019, escalated trade disputes between the US and China led to a considerable growth in investors' demand for 'protective' assets, in particular, US treasury bonds. As a result, the US treasury bond yield decreased significantly (in early September, the yield of 10Y securities dropped to 1.47%, which is the lowest level since mid-2016, 1.92% as of 7 November). In August, the volatility of US treasury bonds (the MOVE index) grew to its maximum level since the beginning of 2016. In August 2019, an inverted US treasury bond yield curve was seen in the 2–10 year segment for the first time since June 2007. Other advanced economies also witnessed a downward trend in rates. During the reporting period, 10Y government bond yields

FEDERAL FUNDS FUTURES *Chart 6*
(%)



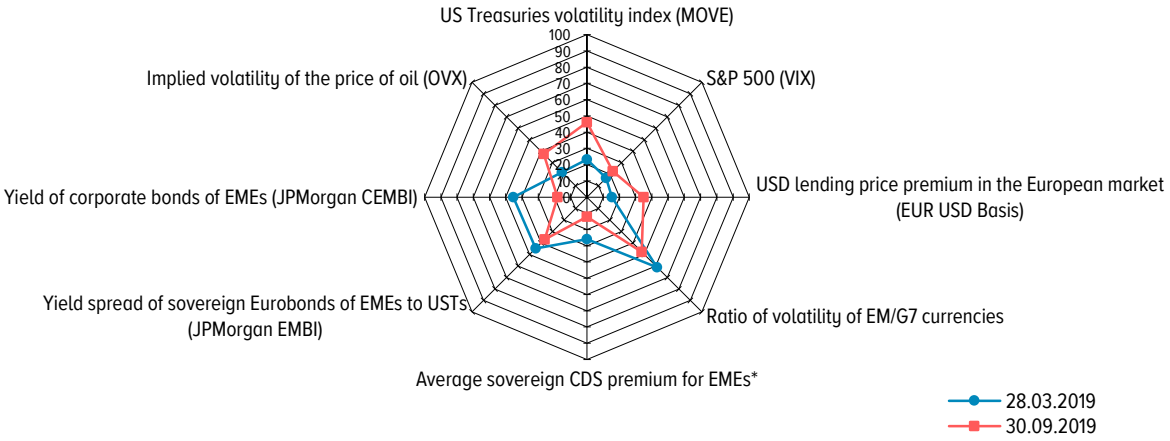
Source: Bloomberg.

ECB DEPOSIT FUTURES *Chart 7*
(%)



Source: Bloomberg.

CHANGE IN KEY PERFORMANCE INDICATORS OF THE GLOBAL FINANCIAL MARKET IN APRIL–SEPTEMBER 2019 *Chart 8*
(UNITS)



** Selection of countries: China, India, Indonesia, the Philippines, Malaysia, Thailand, Mexico, Brazil, Colombia, Chile, South Africa, Turkey, Poland, Hungary.*

The scale from 0 to 100 units reflects the minimum and maximum values of the indicators during the period from 1 January 2012 to 28 September 2019. From the centre to the edge: growth of volatility (MOVE, VIX, OVX, EME/G7), growth of yields and risk premium.
Sources: Bloomberg, Thomson Reuters.

became negative in Austria, Belgium, Denmark, Finland, France, Germany, the Netherlands, Sweden and, in late 2018–early 2019, in Switzerland and Japan. Changes in global public debt markets are significant considering their close interrelation (an assessment of the spillover of shocks in global debt markets can be found in Box 1).

Amid decreased rates in advanced economies, EMEs have also witnessed a decline in yields of both sovereign and corporate bonds, with the exception of Argentina. This trend was also promoted by the softened monetary policy in EMEs amid disinflation (Table 2). Since April 2019, key rates have been lowered in Brazil, Chile, India, Indonesia, Mexico, the Philippines, Russia, South Africa, Thailand and Turkey. At the same time, EMEs have observed a drop in sovereign risk premiums. The average CDS spread level for a sample of 15 EMEs (not including Argentina) declined to its lowest level since early 2018 (100 b.p. as of 30 September). EMEs' corporate bond yield (JPMorgan CEMBI Broad Composite Yield) declined noticeably in 2019 from 6.2% to 5.0% as of 30 September.

CHANGE IN THE KEY RATE AND INFLATION IN EMES *Table 2*

	Central Bank key rate		Annual inflation	
	Level as of 6 November 2019 (%)	Change since early April 2019 (pp)	September 2019 (%)	Deviation from the average inflation for April–September 2019 (pp)
Turkey	14.00	-10.00	9.3	-6.5
India	4.90	-1.10	7.0	-0.5
South Africa	6.50	-0.25	4.1	-0.2
Russia	**6.50**	**-1.25**	**4.0**	**-0.7**
Indonesia	5.00	-1.00	3.4	0.1
Mexico	7.75	-0.50	3.0	-0.8
Brazil	5.00	-1.50	2.9	-0.9
Chile	1.75	-1.25	2.2	-0.3
Philippines	4.00	-0.75	0.9	-1.4
Thailand	1.25	-0.50	0.3	-0.5

Source: Bloomberg.

At the same time, in August 2019, amid a decrease in risk appetite among global investors, there was an outflow of foreign capital from EMEs' shares. According to EPFR, net capital outflow from funds investing in EMEs' shares in August amounted to $15.6 billion, which was the maximum net outflow for the month since August 2015. In August, EMEs' national currencies also weakened against the US dollar by an average of 3.5% for a sample of 15 countries (not including Argentina). However, in September–October, against the backdrop of accommodative measures by the US Federal Reserve and the ECB, the situation in EMEs' markets mainly normalised.

In many EMEs, the ability to withstand external threats is largely limited due to weak macroeconomic and financial indicators (the current account balance of payments, budget, debt burden, including in foreign currency, and provision level). In Russia, the macroeconomic situation and the situation in the financial sector are more favourable (the GDP-at-risk estimate is presented in Box 2), which contributes to maintaining stability during periods of increased volatility.

A comparative assessment of changes in key indicators of EMEs' financial market (Table 3) shows that in August 2019 the situation in the Russian market remained strong despite lower oil prices and newly imposed sanctions. Sanctions related to the purchase of Eurobonds in the primary market did not result in significant OFZ sales by non-residents in August. The decrease in the volume of OFZs held by non-residents amounted to only ₽4 billion during the month. The share of foreign investments in OFZs stabilised and amounted to 29.8% as of 1 October 2019. According to current data, the share of OFZs held by non-residents on foreign depository accounts opened with NSD amounted to 31.5% as of 27 November. The OFZ yield curve for August decreased by 17 b.p. on average for all terms, and as of 1 November it had dropped below the level of early April 2018 (before sanctions were imposed against Rusal). In August, non-residents' investments in the sovereign Eurobonds market did not change, and the yields of sovereign Eurobonds decreased by an average of 38 b.p. for all terms over the month.

The risks of a slowdown in global growth have a significant impact on oil price dynamics. The cost of Brent in the reporting period fell by 11.1%. The abrupt surge in oil prices in mid-September against the backdrop of drone attacks on the largest oil processing complex in Saudi Arabia was short-lived. In general, the impact of geopolitical factors (sanctions against Venezuela and Iran) has decreased. In the longer run, a new oil production spike in countries outside of OPEC (especially in the US) may become an important factor that will place pressure on oil prices. According to the US Department of Energy, in 2019, US oil production will reach a record high of 12.24 million barrels per

CHANGE IN THE FINANCIAL MARKET INDICATORS IN EMERGING MARKETS *Table 3*

EMEs	Exchange rates of national currencies against the US dollar		Stock index		10Y government bond yield		5Y sovereign CDS spreads		Rank based on four indicators (1 corresponds to the worst result, and 16 corresponds to the best result)	
	%				bp					
	For April–September 2019	In August 2019	For April–September 2019	In August 2019	For April–September 2019	In August 2019	For April–September 2019	In August 2019	**For April–September 2019**	**In August 2019**
Argentina	-24.8	-26.3	-13.1	-41.5	362	61	6633	5047	1	1
China	-6.1	-3.8	-6.0	-1.6	8	-12	3	6	2	7
South Africa	-4.2	-5.6	-2.9	-2.7	-27	-9	-6	5	3	4
Columbia	-8.3	-4.7	-1.7	-0.7	-62	6	-15	7	4	5
Malaysia	-2.5	-1.9	-3.6	-1.4	-43	-28	-10	3	5	12
Hungary	-6.8	-2.4	-2.6	-2.4	-86	-38	-10	-4	6	14
Poland	-4.3	-2.8	-3.9	-4.9	-85	-35	-4	1	7	11
Indonesia	0.3	-1.2	-4.6	-1.0	-37	-2	-13	11	8	9
Chile	-6.7	-3.4	-3.8	-3.4	-135	-15	-8	0	9	8
India	-2.4	-3.7	0.0	-0.4	-65	19	-32	3	10	6
Mexico	-1.6	-4.6	-0.6	4.3	-116	-54	-7	-5	11	16
Philippines	1.4	-2.3	-1.8	-0.8	-93	-36	-12	4	12	13
Thailand	3.7	0.9	-0.1	-3.3	-99	-39	-12	0	13	15
Brazil	-5.7	-8.1	9.8	-0.7	-194	19	-38	7	14	3
Russia	**1.4**	**-4.6**	**10.0**	**0.0**	**-140**	**-14**	**-51**	**1**	**15**	**10**
Turkey	-1.4	-4.3	12.0	-5.3	-466	78	-69	66	16	2
Change in indicators on average (not including Argentina)	-2.9	-3.5	0.0	-1.6	-109	-11	-19	7		

The final rank is calculated based on the average of the linearly normalised values in the interval [0, 1] of the change in each EME's market financial indicators. When normalising, the minimum and maximum values are set taking into account the historical changes in indicators since 2018:

Exchange rates of national currencies against the US dollar (%)	Stock index (%)	10Y government bond yield (bp)	5Y sovereign CDS spreads (bp)
-15	-20	-150	-100
0	0	0	0
15	20	150	100

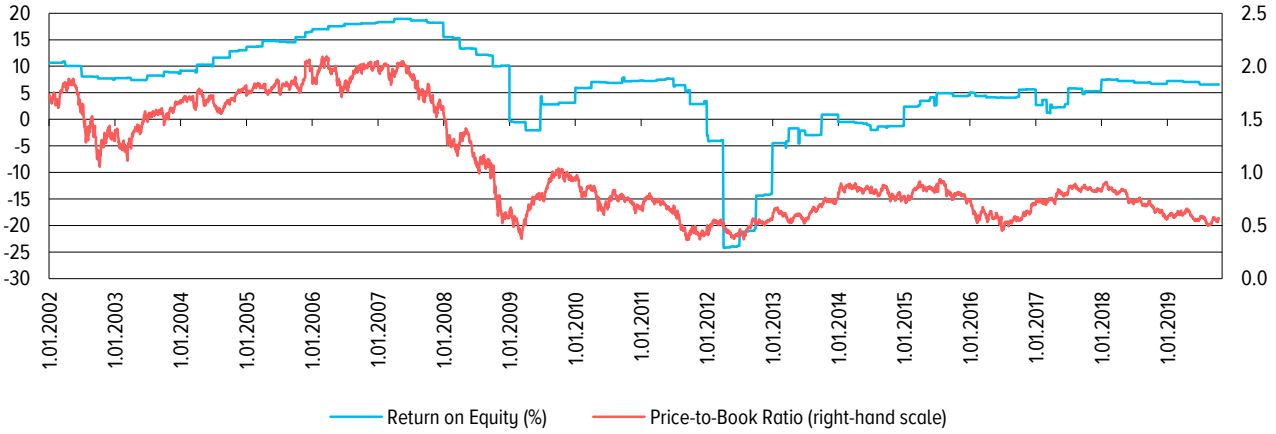
Sources: Bloomberg, Thomson Reuters.

day. The International Energy Agency forecasts the return of a significant oil surplus to the world market in 2020.

Despite the accommodative measures taken by regulators in many countries, their impact on economic growth may be limited (due to the fact that rates in advanced economies are already at very low levels and have even become negative). In this light, an even greater slowdown of global economic growth cannot be ruled out. At the same time, the global economy may transition to a state where low growth rates will be accompanied not only by low rates for longer but also by low inflation (the Japanese scenario). Moreover, low rates will stimulate the further accumulation of vulnerabilities in economies and financial systems in the medium and long terms.

- An increased debt burden in the corporate sector remains a key vulnerability for both advanced economies and EMEs. According to the Bank for International Settlements (BIS), as of Q1 2019, the debt of non-financial companies in advanced economies amounted to 89.4% of GDP, while in EMEs it was 100.6% of GDP. In the softened financial conditions, further accumulation of corporate debt may be expected, including an increase in more risky lending. As a result, companies will be exposed to the risks of unexpected increases in interest rates and/or reduction in profits

ROE AND PB FOR THE BANKS INCLUDED IN EURO STOXX BANKS *Chart 9*



Source: Bloomberg.

amid the economic growth slowdown. The subsequent reduction in investments and rise in defaults will negatively affect economic activity. Significant corporate debt vulnerabilities are concentrated in China. Mass corporate defaults in China may lead to panic in the financial markets. This year saw record high level of defaults in China in the domestic corporate bond market. According to China Chengxin International Credit Rating Co., in January–August 2019, national issuers failed to perform bond payments in the amount of 31.8 billion yuan ($4.4 billion), while in 2017–2018 defaults amounted to 26.7 billion yuan. Excessive accumulation of household debt can also be a serious vulnerability factor. According to the BIS, as of Q1 2019, household debt in advanced economies amounted to 72.0% of GDP, while in EMEs it amounted to 41.6% of GDP. At the same time, in some countries this indicator exceeds 100% (Australia, Canada, Denmark, the Netherlands, Norway and Switzerland).

- The volume of dollar financing continues to increase worldwide, which leads to higher global risks of a US dollar liquidity deficit. According to the BIS, as of Q1 2019, the total amount of cross-border claims of internationally operating banks (on all sectors, including banks, non-bank financial institutions and non-financial companies) reached $30.5 trillion, of which US dollar claims account for $14.7 trillion. An indicator of the cost of US dollar financing outside the United States is the cross-currency basis. Since the 2008 crisis, this indicator in developed markets has been in the negative zone. Moreover, as a result of the post-crisis implementation of requirements in banking regulation, sharp surges in volatility in the cross-currency swap markets began to be observed at the end of the quarter. Last September, an unexpected increase in rates on the US repo market was additional evidence that the risks of dollar funding shortages were potentially very high. In the event of a significant and continued increase in volatility, financial institutions may be exposed to significant risks of a US dollar liquidity outflow. In Russia, there is a trend toward a decrease in credit institutions' foreign exchange assets and liabilities, while preserving the liquid part of foreign assets contributes to a favourable situation with foreign exchange liquidity (for details, see Section 2.1, Vulnerability 2).

Further reduction in interest rates in global markets will negatively affect the financial institutions' profitability and may increase the risks of an economic growth slowdown. According to Bloomberg, the volume of bonds with negative yield has reached $15 trillion. This indicates that investors expect very low return on investment and slower growth rates in the future. The risks of decreased interest rates are especially acute for Europe and Japan, where banks faced the problem of low profitability after the crisis due to reduced net interest margins, a high share of non-performing loans and significant transaction costs. The average return on equity of EU banks in Q2 2019 was

6%, which is lower than that in 2007 (10%). At the same time, the price-to-book ratio of European banks' shares is below 1 (Chart 9). Low profitability has a number of negative consequences: it limits the banks' ability to finance growth from retained earnings and makes it difficult to attract new capital, which becomes more expensive; over time, banks begin to use capital rather than profit to absorb losses; all the above factors ultimately limit banks' ability to implement recovery plans. On macrolevel, low yield makes banks less willing to finance the real economy, and weakened economic activity places an even greater pressure on bank yield indicators, resulting in a spiral.

Box 1. Spillover of financial risks in global markets and their impact on the Russian economy

Diebold and Yilmaz (2009)[1] have developed a methodology for building an index of the spread of shocks on the world financial markets (a 'side effect' index or spillover index). This methodology is used to assess the spillover of shocks in global government debt markets using a VAR (vector autoregression) model with 15 variables and two lags. The significance of the financial market situation of each country included in the sample for the dynamics of national financial market indicators is determined based on the estimated decomposition of the variance of the financial variables forecast.

INTERRELATION OF PROCESSES IN DIFFERENT COUNTRIES' FINANCIAL MARKETS *Table 4*

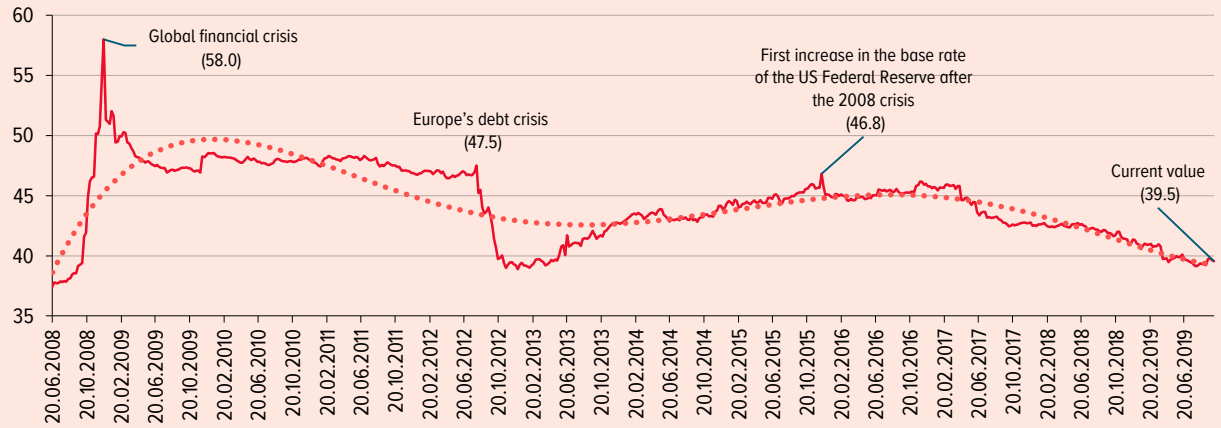
Spillover Index	USA	United Kingdom	France	Germany	Canada	Japan	Indonesia	India	China	Thailand	Brazil	Russia	Mexico	Columbia	South Africa	Share of dispersion unattributed to own dynamics
USA	93.3	1.7	0	0.5	0.2	0.3	0.2	0.4	0.8	0.3	0.1	0.3	0.7	0.3	0.9	6.7
United Kingdom	52.7	38.5	0.1	0.2	0.4	0.6	0.6	0.6	1.2	0.2	0.3	1.9	0.8	0.6	1.4	61.5
France	38.3	8.8	44.4	0.5	0.3	0.3	0.6	0.8	0.7	0.6	0.1	1	1	0.9	1.8	55.6
Germany	53	10.8	11.6	17.1	0.3	0.4	0.7	0.6	0.8	0.4	0.1	1	0.6	1	1.7	82.9
Canada	70.6	3.6	0.3	0.4	22.6	0.1	0	0.2	0.9	0.2	0.1	0.2	0.3	0.1	0.5	77.4
Japan	25.5	2.2	1.2	0.8	0.1	66.2	0	0.3	0.6	0.1	0.4	0.2	0.1	2.1	0.1	33.8
Indonesia	3.4	0.7	1.6	1	0.8	0.2	84.5	0.1	0.7	0.6	0.1	0.9	3	0.1	2.3	15.5
India	2.5	0.1	0.4	0.4	1.3	1.1	1.9	86.1	0.3	1.6	0.1	1.9	1	0.8	0.4	13.9
China	1.1	1.2	0.3	0.1	0.3	1.4	0.9	1.3	90.1	1	0	0.2	1.5	0.4	0.4	9.9
Thailand	9.2	0.4	0.2	0.1	1	0.9	2.8	1.8	1.9	78.3	0	0.8	0.3	0.9	1.3	21.7
Brazil	1.2	1	0.1	0.5	1.1	0.4	3.8	0.3	0.4	2.8	86.5	0.7	0.4	0.3	0.5	13.5
Russia	3.2	1.2	1	0.2	0.8	0.8	0.9	1.4	0.6	1	1.6	85.8	0.1	0.2	1.3	14.2
Mexico	7	0.3	0.2	0.7	0.9	0.2	14.8	0.2	1	1.8	3.3	1.7	67.3	0.2	0.4	32.7
Columbia	3.2	0.8	0	0.4	1.4	0.9	5.3	0.4	0.5	1	1.2	1.4	5.6	77	0.9	23
South Africa	2.4	0.3	0.3	0.8	0.3	0.3	4.7	1	0.3	2	1.7	0.6	4	1.3	80	20
Contribution into dispersion of other variables	273.3	32.9	17.2	6.7	9.1	8.1	37.2	9.3	10.6	13.6	9	12.7	19.4	9.2	13.8	482.3
Contribution into own dispersion and other variables	366.6	71.4	61.6	23.8	31.8	74.4	121.7	95.4	100.7	91.9	95.5	98.5	86.7	86.3	93.8	32.20%

Sources: Thomson Reuters, Bank of Russia calculations.

[1] *Diebold F.X., Yilmaz K. (2009). Measuring financial assets return and volatility spillovers, with application to global equity markets. The Economic Journal, vol. 119, pp. 158–171.*

SPILLOVER INDEX IN GLOBAL PUBLIC DEBT MARKETS
(PERCENT)

Chart 10



Sources: Thomson Reuters, Bank of Russia calculations.

The data on the 10Y government bond yield denominated in national currencies are used. The sample includes data from six advanced economies[2] and nine emerging market economies[3]. Weekly data are used in the first differences for the period from 23 May 2003 to 4 October 2019. The sliding window method is used to calculate the dynamic index of shock spillover (the window included 200 weeks).

The following results were obtained.

1. The general level of shock spillover in global debt markets is 32.2% (Table 4[4]), which testifies to a relatively high degree of interconnection of processes in the global risk-free debt markets[5].

2. The degree of interconnection of processes in world markets can change over time (Chart 10): there is an increase in correlation during periods of crisis and financial stress. Since H2 2017, there has been a trend toward a decrease in the degree of sensitivity of national financial market parameters to external events.

3. Processes in the US (3.2%), Brazil (1.6%), India (1.4%), South Africa (1.25%) and the UK (1%) have the greatest impact on Russian bond market dynamics[6].

The degree of sensitivity of Russian financial market parameters to events in foreign markets corresponds to the level of EMEs with a similar sovereign rating. The contribution of processes in the US financial market to the change in profitability in the Russian domestic market is 3.2%, which is comparable with the level of Indonesia (3.4%), Colombia (3.2%), South Africa (2.4%) and India (2.5%) and lower than that in Thailand (9.2%) and Mexico (7%). The financial markets of advanced economies are closely integrated, so the contribution of lag values of the country's own variable to dispersion in some advanced economies is lower (while the level of dependence on changes in profitability in other advanced economies is higher) than in EMEs.

The share of dispersion not explained by the country's own dynamics of government bond yields is 14.2% in Russia, which corresponds to the level of Brazil (13.5%), India (13.9%) and Indonesia (15.5%). In Russia, this indicator is significantly lower than in many other EMEs (Mexico (32.7%), Colombia (23%), Thailand (21.7%) and South Africa (20%)), which indicates the relative stability of the national financial system parameters against shocks in global debt markets.

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[2] *The US, the UK, France, Germany, Canada and Japan.*

[3] *Indonesia, India, China, Thailand, Brazil, Russia, Mexico, Colombia and South Africa.*

[4] *The data in the table are to be interpreted as follows. From left to right, the table shows data on the dispersion share of variables by rows, which is explained by the dynamics of the variables mentioned by columns. For example, 93.3% of the dispersion in US treasury bonds yield is explained by its own dynamics, and 6.7%, by the dynamics of other variables (in particular, 1.7% is explained by processes in the UK financial market, 0.5%, in the German market, etc).*

[5] *In Diebold and Yilmaz (2009), the Spillover Index for indicators of profitability and volatility of stock indices are 35.5% and 39.5%, respectively (based on the data from 19 countries for 1992–2007), and the authors assess this level as high.*

[6] *A considerable share of dispersion of variables is explained by internal dynamics (in Russia, this indicator amounts to 86%), as in Diebold and Yilmaz (2009).*

Box 2. The impact of financial conditions on GDP dynamics: a GDP-at-risk estimate based on Russian data

The results of recent scientific research prove that the condition of the financial sector has an impact on the economic growth outlook. Increased financial sector vulnerabilities (excessive debt burden, extremely high lending growth rates) and tightened financial market conditions (increased asset cost volatility, extended loan spreads) may lead to a decline in the real GDP in the medium and long terms.

To assess the interrelation between the financial and real sectors of the economy, the GDP-at-Risk (GaR) assessment methodology has been developed: a means of assessing the breakdown of future real GDP growth rates by economic and financial[1] conditions based on quantile regression. At present, GaR is assessed in the financial stability reviews by IMF and major central banks (ECB, central banks of Great Britain, Canada and Japan).

According to the latest IMF Global Financial Stability Report (2019)[2], short-term risks for the global economy are balanced, taking into account the softened financial conditions in global markets, despite the slowdown of global growth rates. At the same time, there is a possibility that the volatility may increase in the short term against the backdrop of general uncertainty about trade issues and Brexit-related risks. Medium-term risks remain at a higher level due to accumulated vulnerabilities amid softened financial conditions in the global market.

The GaR based on Russian data was estimated by means of the methodology suggested in Adrian et al (2019)[3] (see Appendix 2. GDP-at-Risk methodology). The results are described below. The model specification is based on quarterly and monthly data.

Quarterly specified model is using the following data (time series from Q1 2000 to Q2 2019):

- Russian real GDP growth rate YoY
- VIX

Monthly specified model is using the following data (time series from January 2007 to October 2019):

- Russian Current Activity Indicator (CAI) (proxy variable for GDP) calculated by Goldman Sachs
- Russian Financial Conditions Index (FCI) calculated by Goldman Sachs.

The following results were obtained.

1. The conclusions drawn in Adrian et al (2019) that the tightening of financial conditions increases downside risks[4] have been proved correct—that is, the tightening of financial conditions may precede the decline of economic growth rates. During economic downturns, the conditional density function is characterised by a left-skewed distribution. Upper quantiles of distribution are much less dependent on the changes in financial conditions (Chart 12, 13). In late 2008, there was a 5% probability that GDP growth rates could have fallen below -3.5%, and taking financial conditions into account, below -9.5%.

Therefore, GaR could be used for stress scenario calibration and assessment of the probability of their materialisation. At the same time, GaR model could be used as a methodological basis for the financial stability risks assessment and valuation of macroprudential policies impact.

2. At present, risks for the economy are balanced, taking into account the changes in financial conditions (the 5th percentiles in the distribution with and without financial conditions are similar) (Chart 14, 15), which is proved by both model specifications.

In general, calculations confirm that changes in financial conditions may have an impact on economic growth prospects during volatility spikes in the financial markets. That is why it is necessary to apply measures to stabilise such volatility, including measures aimed at stabilising the foreign exchange market (foreign exchange market transactions, including foreign exchange REPO, swaps, etc). A stabilising effect is also achieved by monetary policy measures (increased interest rates, which limit inflationary risks and, as a result, help stabilise and then decrease the long and medium segments of the yield curve).

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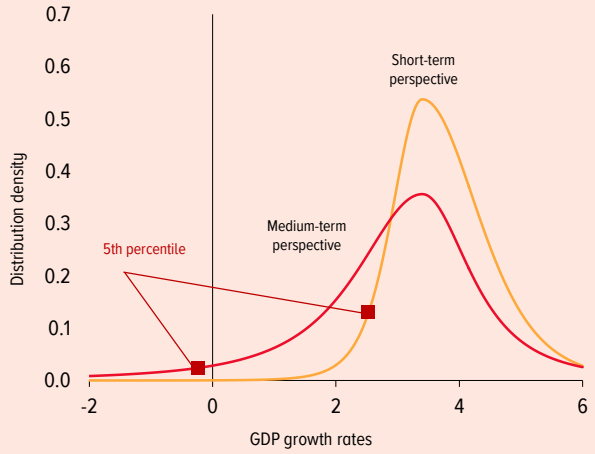
[1] A complex indicator reflecting the situation in the domestic (asset cost volatility, credit aggregates and risk premium) and external (world commodity prices and global risk demand) financial markets is usually treated as a financial condition variable. Indicators characterising the situation in certain financial market segments or even macroprudential policy tools may also be chosen as a conditional variable in order to assess its effectiveness (e.g., Aikman D, Bridges J, Hacioglu Hoke S, O'Neill C, Raja A (2019). Credit, capital and crises: a GDP-at-Risk approach. Bank of England Staff Working Paper, no. 824. September 2019).

[2] IMF. (2019). Global Financial Stability Report. Lower for longer. October 2019.

[3] Adrian, T, Boyarchenko, N, Giannone, D (2019). Vulnerable Growth. American Economic Review, 109(4), pp. 1263–1289. DOI: http://doi.org/10.1257/aer.20161923

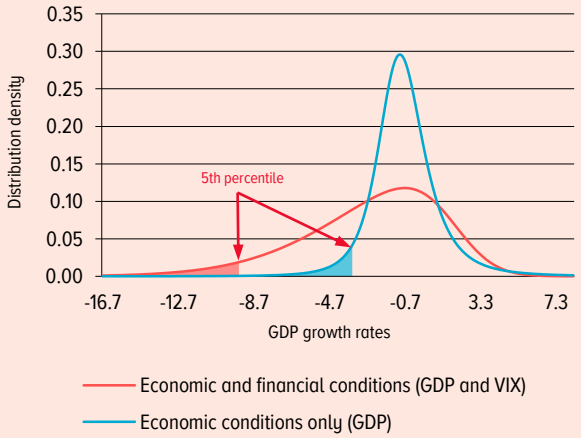
[4] According to the IMF Global Financial Stability Report, the tightening of financial conditions may pose upside risks in some EMEs due to the procyclicality of international capital flows (IMF. (2017). Global Financial Stability Report. Is growth at risk? October 2017).

DENSITY OF DISTRIBUTION OF GLOBAL GDP GROWTH RATES IN THE SHORT AND MEDIUM TERMS (AS OF Q3 2019) *Chart 11*



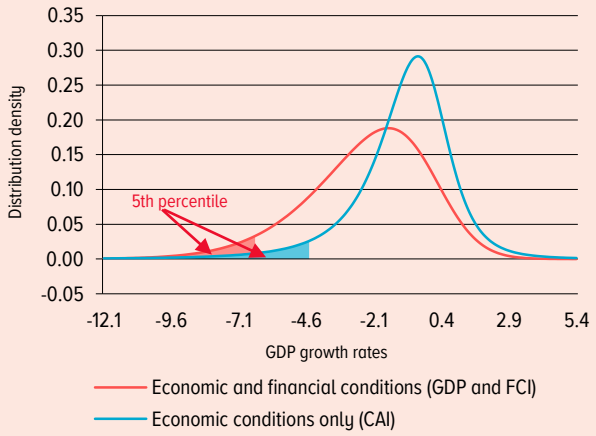
Source: IMF (2019).

GDP GROWTH RATE DISTRIBUTION DENSITY DEPENDING ON ECONOMIC AND FINANCIAL CONDITIONS AFTER ONE QUARTER (AS OF Q4 2008) *Chart 12*



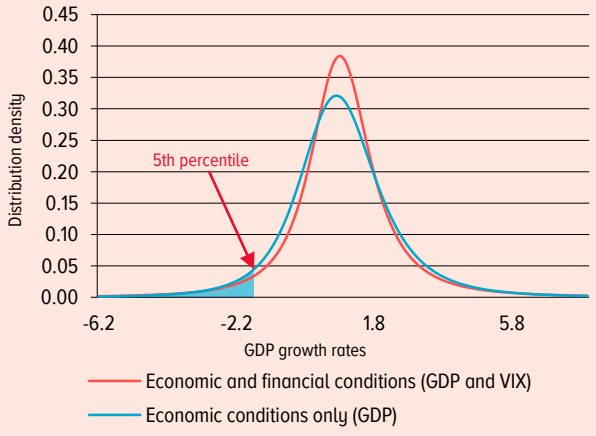
Sources: Rosstat, Bloomberg, Bank of Russia calculations.

CAI GROWTH RATE PROBABILITY DENSITY FUNCTION DEPENDING ON ECONOMIC AND FINANCIAL CONDITIONS FOR THE FIRST QUARTER AHEAD (AS OF THE END OF Q4 2014) *Chart 13*



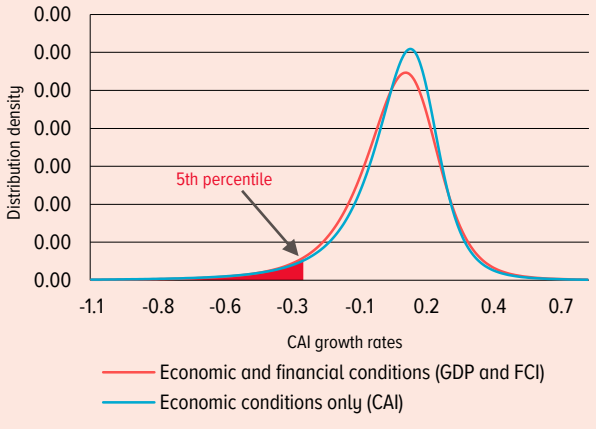
Sources: Rosstat, Bloomberg, Bank of Russia calculations.

GDP GROWTH RATE PROBABILITY DENSITY FUNCTION DEPENDING ON ECONOMIC AND FINANCIAL CONDITIONS FOR THE FIRST QUARTER AHEAD (AS OF THE END OF Q1 2019) *Chart 14*



Sources: Rosstat, Bloomberg, Bank of Russia calculations.

CAI GROWTH RATE PROBABILITY DENSITY FUNCTION DEPENDING ON ECONOMIC AND FINANCIAL CONDITIONS FOR THE FIRST QUARTER AHEAD (AS OF 01.08.2019) *Chart 15*



Sources: Rosstat, Bloomberg, Bank of Russia calculations.

2. KEY VULNERABILITIES AND MACROPRUDENTIAL POLICY OF THE BANK OF RUSSIA

The internal vulnerabilities inherent to the economy may lead to an increase in financial stability risks. To eliminate such risks, the Bank of Russia applies macroprudential instruments. During the period from 1 April to 1 October 2019, the Bank of Russia took measures to limit the risks related to increased debt burden of households and banking sector dollarization.

At the same time, the experience of implementing macroprudential policy in Russia and foreign countries proves that it is important for the regulator to have various macroprudential regulation instruments available to curb excessive lending growth in high-risk segments and to mitigate accumulated systemic risks in the financial sector. The Bank of Russia has held consultations with banking market participants, the results of which will be used to develop amendments to the current legislation.

2.1. KEY VULNERABILITIES IN THE RUSSIAN FINANCIAL SYSTEM AND MACROPRUDENTIAL MEASURES OF THE BANK OF RUSSIA

Vulnerability 1. Growth of the household debt burden

Unsecured lending

The unsecured consumer lending market is passing through a saturation period, and, going forward, a slowdown in debt growth rates is expected in this segment. Therefore, the requirement that took effect from 1 October 2019 for credit and microfinance organisations to calculate the debt service to income ratio (DSTI) and additional capital requirements under loans and microcredits issued to borrowers with a high debt burden is becoming even more important. The use of the payment to income ratio in regulation will help limit the excessive growth of consumer lending to borrowers with a higher debt burden level, which will reduce the vulnerability of banks and microfinance organisations to shocks associated with the decline of household incomes.

Debt burden

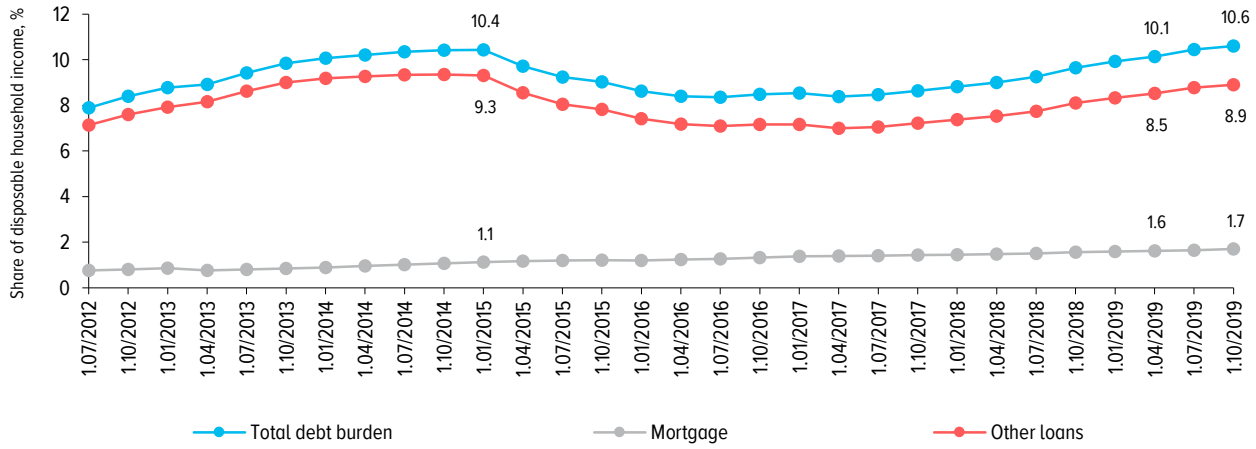
The population debt burden under unsecured loans is calculated as the ratio of scheduled payments to household disposable income[1], from 1 April to 1 October 2019, increased by 0.4 p.p. to 8.9%, having converged to its maximum level of 9.3% in 2014. The main factor of the growth of debt burden at the macrolevel is the slow increase in disposable household incomes as compared to the growth of loan debt, whose annual growth rates were at their highest level in late May (25.3%) and then decreased to 23.5% as of 1 October. Demand for loans is growing amid the lowering interest rates. To a great extent, banks were engaged in lending by means of attracting new borrowers who did not have any loans as of 1 January 2019 (5.6 million individuals since the beginning of 2019, or 21% of borrowers[2]). Moreover, since the beginning of the year, 4 million people have repaid their debts under consumer loans and have not received any new loans.

The influence of other factors (rate level and loan term) on the dynamics of the population's debt burden under unsecured consumer loans was insignificant. From 1 April to 1 October 2019, the weighted average total effective interest rate (EIR) in the largest 'Cash Loan' segment decreased

[1] *It takes into account the disposable income of Russia's population as a whole, including individuals who have not received any loans. Therefore, the ratio is lower than the actual debt burden of households with at least one loan.*

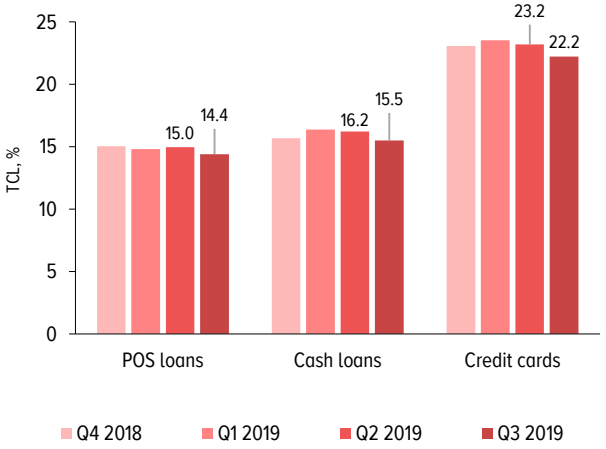
[2] *Based on the analysis of aggregate data from the three largest credit history bureaus.*

POPULATION DEBT BURDEN INDICATOR *Chart 16*



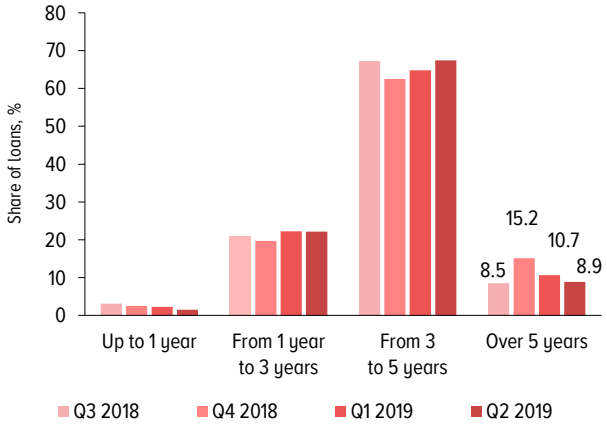
Source: based on bank reporting forms 0409101, 0409128, 0409316 and Rosstat data.

EFFECTIVE INTEREST RATE DYNAMICS BROKEN DOWN BY LENDING SEGMENTS *Chart 17*



Source: reporting form 0409126.

DYNAMICS OF LOAN AGREEMENT MATURITY (UNSECURED CONSUMER LOANS) *Chart 18*



Source: based on the monitoring of outstanding household loans.

from 16.4% to 15.5% (Chart 16). The increase in the maximum loan maturities observed at the end of 2018 was replaced by the opposite trend: the share of loans extended for more than five years amounted to 8.9% in Q2 2019 as compared to 10.7% in Q1 2019 and 15.2% in Q4 2018 (Chart 18). On 1 October 2019, amendments to Bank of Russia Ordinance 4892-U entered into force, limiting the loan term to five years for the purpose of calculating DSTI; this was meant to mitigate the risk of artificially increasing the maturities of unsecured consumer loans.

Since the beginning of 2019, there has been an increase in borrowers' debt burden at the microlevel as well. Certain credit institutions increased the share of loans granted to borrowers with a high level of debt burden: borrowers with a Payment/Income ratio[3] of more than 80% in the 'Cash Loan' segment accounted for 9.9% of the volume of loans granted in Q2 2019, which is 1.2 p.p. higher compared to the previous quarter and 4.9 p.p. higher compared to Q4 2018 (Chart 19). It should

[3] *Statistics on debt burden indicators and terms of issuance are calculated according to the 'Household Loan Debt Monitoring' survey. The following banks were included in the survey: Sberbank, VTB Bank (PJSC), Gazprombank JSC, Russian Agricultural Bank JSC, Rosbank PJSC, Tinkoff Bank JSC, Raiffeisenbank JSC, Sovcombank PJSC, Otkritie FC JSC, HCF Bank LLC, Unicredit Bank JSC, KB Renaissance LLC, Rusfinance Bank LLC, Russian Standard JSC, Vostochny PJSC and SKB-Bank PJSC. Banks are not required to consider information on borrowers' loans issued by other banks. The borrowers' income was assessed by the banks using their internal methods.*

DYNAMICS OF LOAN BREAKDOWN BY THE LEVEL OF BORROWERS' DEBT BURDEN IN 'CASH LOANS' SEGMENT

Chart 19

Source: based on the monitoring of outstanding household loans.

be noted that the statistics provided on the debt burden of borrowers may differ from the data that banks will calculate in accordance with Bank of Russia's Ordinance 4892-U due to the more conservative methodology provided for in the Ordinance.

The weakening of lending standards associated with loans issued to borrowers with an increased level of debt burden is partly due to credit institutions' efforts to issue loans before the introduction of increased premiums on risk ratios from 1 October 2019, depending on the DSTI ratio. After 1 October, these risks will be mitigated by increased premiums.

Loan portfolio quality

Early indicators of the quality of the loan portfolio for loan generations issued in 2019 indicate a slight increase in materialised credit risk as compared to 2018. The share of debt overdue by more than 30 days in the fifth month of the life of the loan generation grew at the beginning of 2019 from 1.4–1.5% (in mid-2018) to 1.8% (Chart 20). The share of debt overdue by more than 60 days increased from 0.8 to 1–1.1%. At the same time, these values are still significantly below the levels of 2013–2015.

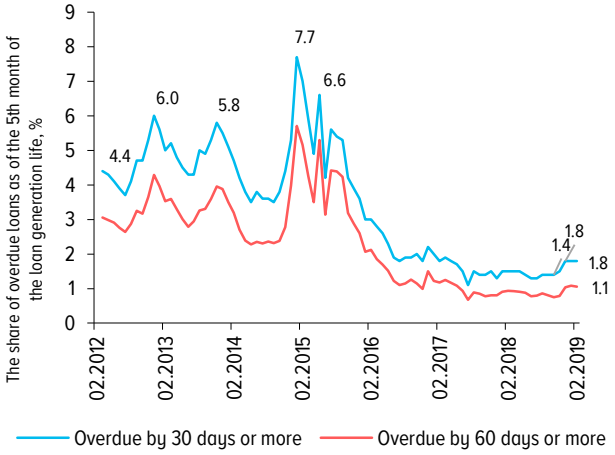
The share of unsecured consumer loans with debt overdue by more than 90 days has consistently decreased in Q2 and Q3 2019: since April, it has decreased by 0.6 p.p. to 8.1%. This is due to both the growth of the loan portfolio and the banks' actions aimed at writing off non-performing debt on loans issued in 2015–2016, including by means of sale. The total amount of debt overdue by more than 90 days decreased by 1 October 2019 by 4.8% compared to the same period last year. For some banks, the growth rate of non-performing loans exceeds the lending growth rates (such banks account for 13.1% of the total debt on unsecured consumer loans).

The risk variance between different levels of borrowers' debt burden remained low, indicating a relatively favourable macroeconomic background. However, in the event of any changes in the credit cycle phase and deterioration in the macroeconomic background, the level of defaults on consumer loans may increase due to the growing share of borrowers with a high level of debt burden, whose solvency is much more sensitive to any decrease in real income.

Macroprudential measures

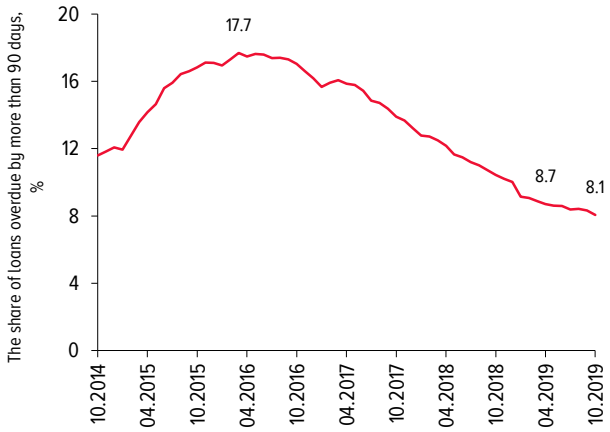
Risk-weights add-ons that are applied to unsecured consumer loans were increased on 1 April and 1 October 2019. Effective from 1 October 2019, risk-weights add-ons under unsecured consumer loans depend not only on EIR but also on the borrower's DSTI. For loans with a borrower debt

CHANGE IN THE SHARE OF LOANS OVERDUE BY 30/60 DAYS OR MORE, BROKEN DOWN BY GENERATIONS *Chart 20*



Source: based on the data from CHBs.

DYNAMICS OF THE TOTAL PORTFOLIO SHARE ACCOUNTING FOR LOANS OVERDUE BY MORE THAN 90 DAYS *Chart 21*



Source: based on the data of reporting form 0409115.

burden of more than 50%, risk ratio premiums have increased by 10–100 p.p. (depending on EIR and DSTI).

The add-ons form additional capital buffers at banks and discourage disbursements in consumer lending segments with an increased level of borrower credit risk. The effectiveness of macroprudential measures in relation to certain credit institutions depends on the amount of capital available to the credit institution and the speed at which the loan portfolio is renewed, since the add-ons apply to newly granted loans.

The additional capital buffer formed by add-ons on unsecured consumer loans as of 1 October 2019 amounted to 0.44 p.p.[4] in the banking sector (with the exception of credit institutions that were undergoing financial recovery). The formed capital buffer is enough to cover 70% of the aggregate losses that materialised in 2014–2015 (loss provisions increased by 6.7% of the loan portfolio, less the value of the LLPs). Given the increase in add-ons effective from 1 October 2019, the capital buffer will continue to grow.

The potential negative consequences of measures to limit the debt service to income ratio may restrict the access of borrowers with the largest debt burden to bank loans and increase defaults on loans attracted by them. Conventionally, low-income borrowers are the most vulnerable to such risk; however, the amount of their shares of loans in total loans is low. In the volume of loans issued since the beginning of 2019, only 3.1% of the debt falls on borrowers with a DSTI of more than 80% and an income of less than ₽20,000 (at the same time, bank models show that, as a rule, such borrowers also have a significant share of unofficial income). To facilitate the process of restructuring loans to borrowers that are facing difficulties in servicing their debt, the Bank of Russia amended Bank of Russia Ordinance 4892-U to allow banks not to recalculate the payment to income ratios under loans if the new payment schedule reduces the debt burden on the borrower.

Box 3. MFO market situation

In Q2 2019, the consumer microfinance market[1] witnessed a slowdown in the annual microloan portfolio growth rate from 50.3% to 45.3% (Chart 21), and their share in the aggregate portfolio of unsecured loans and borrowings remains low (1.9%). At the same time, higher growth rates of debt overdue by more

[1] *Microloans extended to individuals.*

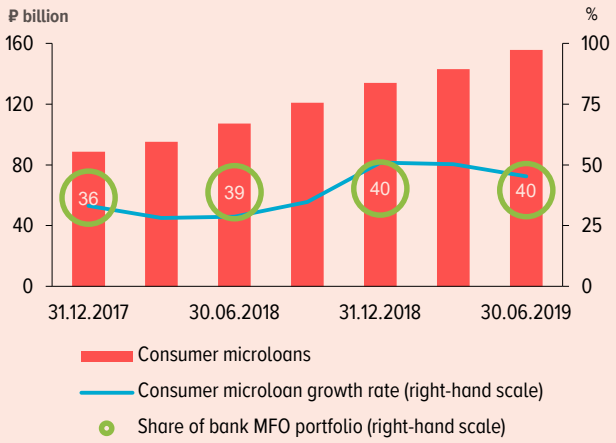
[4] *If the premium value was set to zero, the banking sector's capital adequacy would be 0.44 p.p. above its current level.*

than 90 days (NPL90+) were noted against the backdrop of a slowdown in microloans, which became the main factor in increasing the cost of risk2 to 44.7% (+5.3 p.p. over Q2 2019 Chart 22).

Among consumer microloans, the PDL segment (payday loans) stands out; it demonstrates a significant acceleration in the annual growth rate of disbursements during the 6 months of 2019 from 10.2% to 37.2% (in H1 2018 vs H1 2019, respectively). This circumstance was associated with MFOs' active marketing policies in order to increase interest income amid the anticipated tightening of the requirements for interest rates and overpayments on accrued interest and other income under microloan agreements[3] aimed at reducing the population's debt burden. An additional factor in the growth of payday loans could be increased demand of households for financing of basic consumer needs in the context of insufficient income growth.

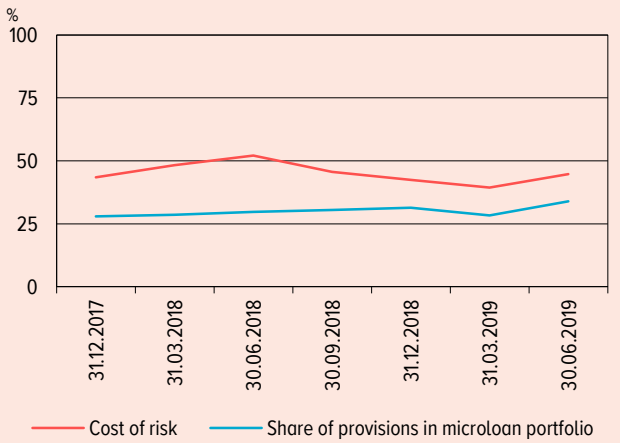
In H1 2019, for the first time in several years, there was a decrease in the annual growth rate of banking MFOs' portfolio from 67.2% to 48.9%. It should be noted that several organisations still account for the largest share of microloans issued by banking MFOs (94%), which indicates the absence of a systemic flow of banks' credit activity to the microfinance market. At the same time, the Bank of Russia notes the existence of cross-sectoral regulatory arbitrage aimed at issuing loans and microloans to the same borrowers and positioning MFOs as nominal sellers of services in order to increase banking business. The Bank of Russia provides for systematic monitoring of the activities of MFOs affiliated with banks and MFOs participating in banking groups/holdings. In addition, the Bank of Russia has already taken a number of measures to bring regulatory requirements applicable to MFOs and credit organisations closer together. In particular, for microloans issued as from 1 October 2019, increased risk ratios begin to apply if the borrower's debt burden (debt servicing to income ratio) exceeds 50%[4]. Moreover, pursuant to Bank of Russia Regulation No. 509-P[5], for MFOs participating in banking groups/holdings, when calculating the banking group's capital adequacy ratio (H20.0), the assets and capital of the banking group participants must be assessed in compliance with the internal documents developed by the parent credit organisation of the group, which significantly minimises the possibility of regulatory arbitrage.

CONSUMER MICROLOAN DYNAMICS *Chart 22*



Source: Bank of Russia calculation.

DYNAMICS OF MICROLOAN PORTFOLIO QUALITY *Chart 23*



Source: Bank of Russia calculation.

[2] *Change in the amount of the microloan portfolio with payments overdue by more than 90 days and the volume of assigned principal debt and written-off debts for the year against the average microloan portfolio for the year.*

[3] *According to Clauses 1 and 3 of Part 4 of Article 3 of Federal Law No. 554-FZ, dated 27 December 2018, 'On Amending the Federal Law "On Consumer Loans" and the Federal Law "On Microfinance Activities and Microfinance Organisations"'.*

[4] *Bank of Russia Ordinance No. 5115-U, dated 2 April 2019, 'On Setting Economic Ratios for a Microfinance Company Attracting Funds from Individuals, Including Individual Entrepreneurs and/or Legal Entities, in the Form of Loans and for a Microfinance Company Issuing and Placing Bonds'; and Bank of Russia Ordinance No. 5114-U, dated 2 April 2019, 'On Setting Economic Ratios for a Microcredit Company Attracting Funds from Individuals, Including Individual Entrepreneurs Who Are Founders (Members, Shareholders), and/or Legal Entities in the Form of Loans'.*

[5] *According to Clause 1.6 of Bank of Russia Regulation No. 509-P 'On Calculating the Capital, Required Ratios and Open Currency Position Limits of Banking Groups'.*

Mortgage lending

Amid the temporary increase in mortgage rates in H1 2019, the growth rate of loan debt under ruble mortgage loans decreased slightly during Q2 and Q3 2019: the annual growth rates decreased from 24.7% as of 1 April 2019 to 20.2% as of 1 October (including adjustment for the securitisation transaction[5]). Given the relatively low level of interest rates on mortgages and long loan terms, the contribution of mortgages to the population's debt burden remains insignificant (1.7% of household disposable income) as compared to unsecured lending.

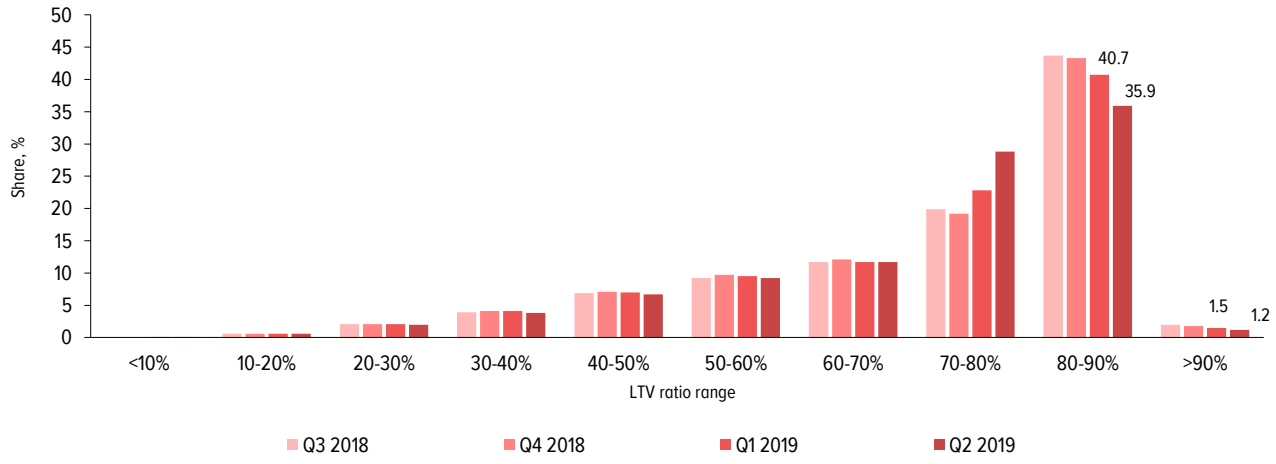
The quality of the mortgage loan portfolio remains at a consistently high level. As of 1 October 2019, the share of the mortgage portfolio overdue by more than 90 days amounted to 1.4%, which is 0.1 p.p. less than as of 1 April 2019.

The Bank of Russia continues to monitor the practice of using unsecured consumer loans as a down payment on mortgage loans. During the first eight months of 2019, 5% of mortgage borrowers (co-borrowers) took a consumer loan of more than ₽100,000 three months prior to receiving a mortgage loan. Compared to 2014, the share of such borrowers increased by 1.3 p.p. Given that this share is currently insignificant, and the figure only indirectly points to the use of a consumer loan as the down payment under a mortgage loan, this practice does not pose a threat to banks' financial stability.

Macroprudential measures

Since the beginning of 2019, the Bank of Russia has increased risk-weights add-ons under mortgage loans with a down payment of less than 20%. Loans with a small down payment are characterised by an increased level of borrower credit risk as they reflect the borrower's inability to accumulate funds. The relatively higher level of risk under loans with a small down payment is reflected in the interest rates on such loans. Differentiation of mortgage loan interest rates depending on the size of the down payment reached the level of 0.3–0.7 p.p. (according to the information from credit institutions' websites in early October 2019) as compared to 0.2–0.5 p.p. in January 2019. In Q2 2019, the share of mortgage loans with a small down payment (from 10% to 20%) continued to decline, which has been observed since the beginning of the year, having decreased by an additional 4.8 p.p. over the quarter to 35.9% of total loans (Chart 24).

BREAKDOWN OF MORTGAGE LOANS BY THE LOAN-TO-VALUE RATIO *Chart 24*



Source: based on the monitoring of outstanding household loans.

[5] *In June–July 2019, VTB Bank (PJSC) sold ₽100 billion worth of mortgage loans to DOM.RF JSC. Under mortgage-backed securities guaranteed by DOM.RF JSC, the risk ratio has been reduced to 20%, which makes the securitisation procedure profitable from the point of view of saving capital.*

SHARE OF MORTGAGE LOANS WITH CONSUMER LOANS ISSUED NOT LONG BEFORE THE MORTGAGE LOAN WAS RECEIVED

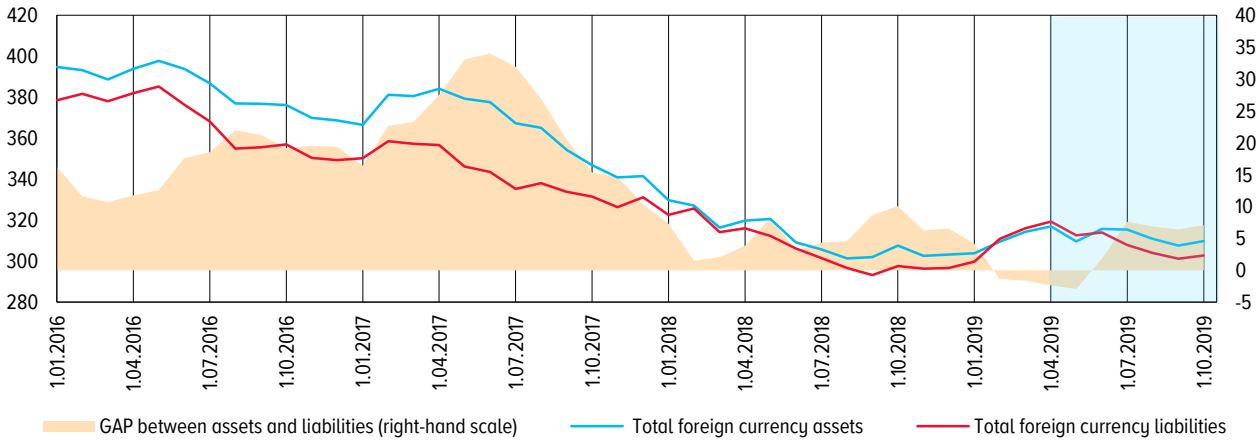
Table 5

Period	Share of mortgage loans with consumer loans issued three months before the mortgage loan was received
2014	3,7
2016	3,5
2018	4,4
2019 (January–August)	5

Source: data from three credit history bureaus - NBCH, OCB, Ekvifax.

FX ASSETS AND LIABILITIES OF THE BANKING SECTOR
($ BILLION)

Chart 25



Source: Bank of Russia's Banking Sector Review.

Taking into account the effectiveness of the measures already introduced, the Bank of Russia will continue to monitor the situation related to loans with a small down payment. Moreover, on 1 October 2019, the requirement for credit institutions to calculate the debt burden on newly issued loans to individuals has taken effect, making it possible to revise risk-weights add-onsa under mortgage loans taking into account the borrower's DSTI ratio.

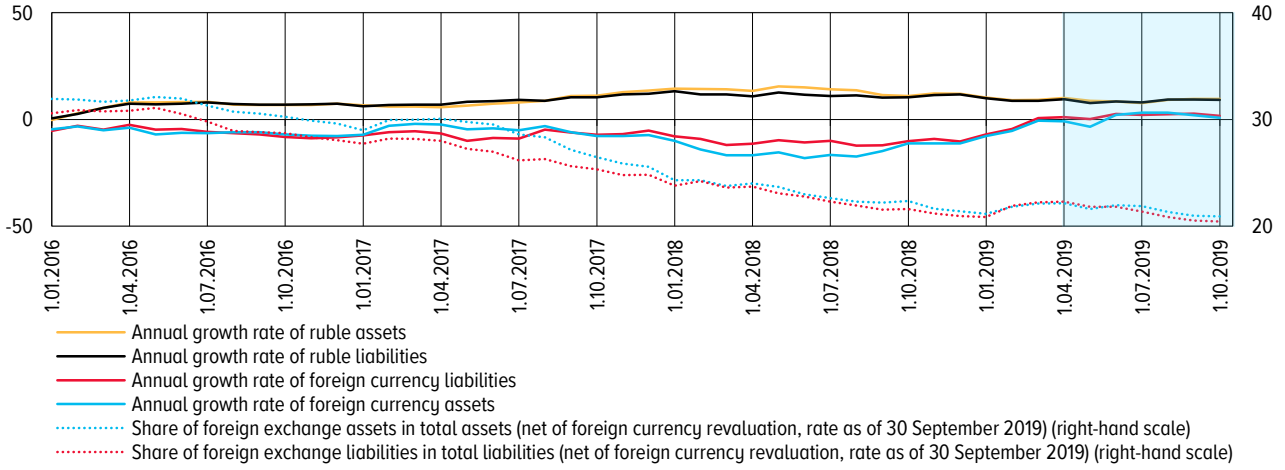
Vulnerability 2. Banking sector dollarization

In Q2 and Q3 2019, there was a revival of the trend toward reducing the dollarization of the banking sector balance. Credit institutions' foreign exchange assets and liabilities decreased (Chart 25), and the annual growth rate of the ruble component of the balance exceeded the annual growth rate of the foreign exchange segment (Chart 26). As a result, the share of foreign exchange assets in the banking sector balance decreased, excluding foreign currency revaluation, by 1.2 p.p. to 21% during the period from 1 April 2019 to 1 October 2019, and the share of foreign exchange liabilities decreased by 1.9 p.p. to 20%. At the same time, for individuals, the deposit dollarization level stabilised at 21%.

In terms of assets, against the background of the measures taken, the currency component of the corporate loan portfolio of banks continued to decline. The debt of non-financial organisations (resident) under foreign currency loans had decreased over the past 12 months by $12.0 billion, or 13.7%, by 1 October 2019.

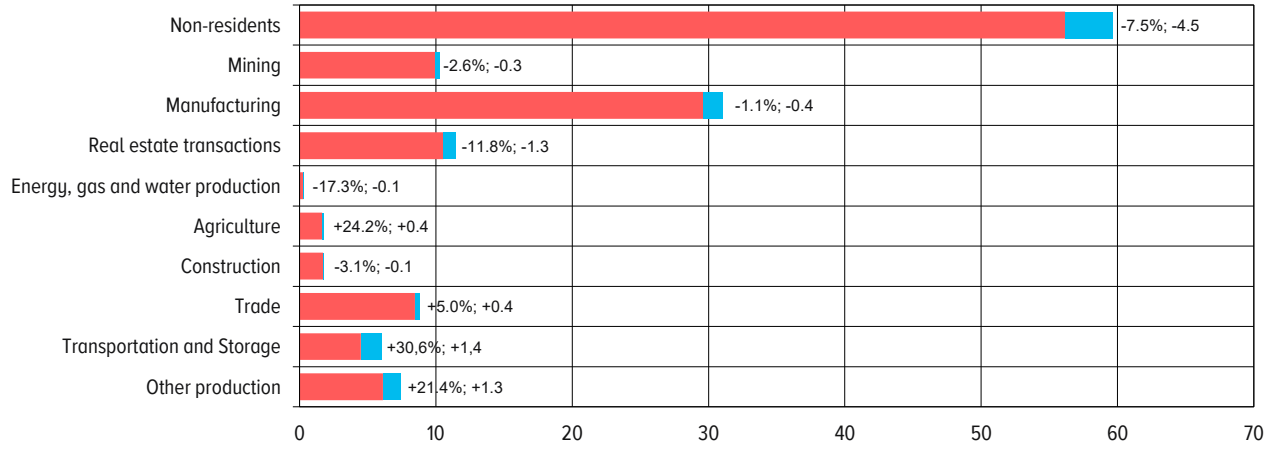
According to data from reporting form 0409101, excluding foreign currency revaluation, the debt under foreign currency loans decreased by 4.5% during the period from 1 April to 1 October 2019. Debt reduction was observed across a wide range of economic activities. Increased debt growth in the 'Transportation and Storage', 'Agriculture' and 'Other' sectors was due to loans issued to export-focused companies.

GROWTH RATE OF ASSETS AND LIABILITIES AND THEIR SHARE IN THE BANKING SECTOR BALANCE SHEET (%) *Chart 26*



Source: Bank of Russia's Banking Sector Review.

CHANGE IN OUTSTANDING LOANS FOR THE PERIOD FROM 1 APRIL THROUGH 1 OCTOBER 2019 ($ BILLION) *Chart 27*



Source: reporting form 0409303.

Since 1 January 2018, the decrease in the debt of non-financial organisations to banks under foreign currency loans was 50% due to loan amortisation, 40% due to the conversion of foreign currency lending into ruble lending and 10% due to the sale of claims under loans to financial companies. Debt amortisation occurs mainly under loans to export-oriented companies from resource-based industries, in which revenue growth is observed.

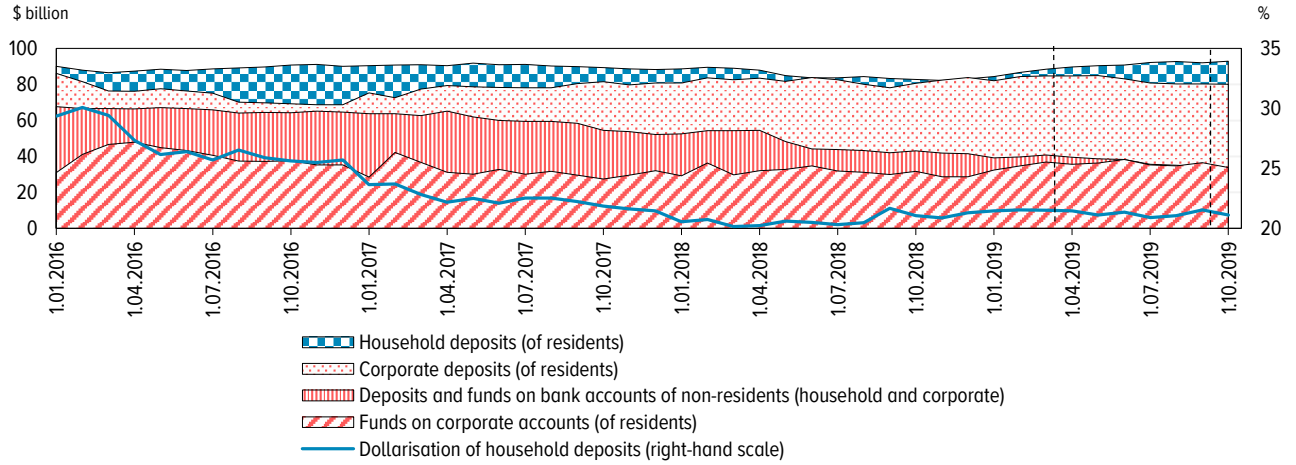
The main contribution to foreign exchange asset growth was still made by the dynamics of balances on correspondent and deposit accounts with non-resident banks. This led to an increase in the liquid part of foreign assets to $17.0 billion (by $4.7 billion during the period from 1 April 2019 to 1 October 2019).

The decrease in the volume of credit organisations' foreign currency liabilities in Q2 and Q3 2019 was mainly due to a decrease in the balances of credit organisations' funds on deposit accounts and the corporate deposit portfolio. In April–September, the volume of corporate deposits in foreign currency decreased by $9.5 billion to $103.3 billion (approximately equally among both residents and non-residents' funds), and balances on current accounts decreased by $2.5 billion to $40.7 billion.

At the same time, the transition of the leading countries' markets to negative interest rates may lead to an increased demand for deposits denominated in such currencies since the possibility of

DYNAMICS OF DEPOSITS AND FUNDS ON BANK ACCOUNTS IN FOREIGN CURRENCY

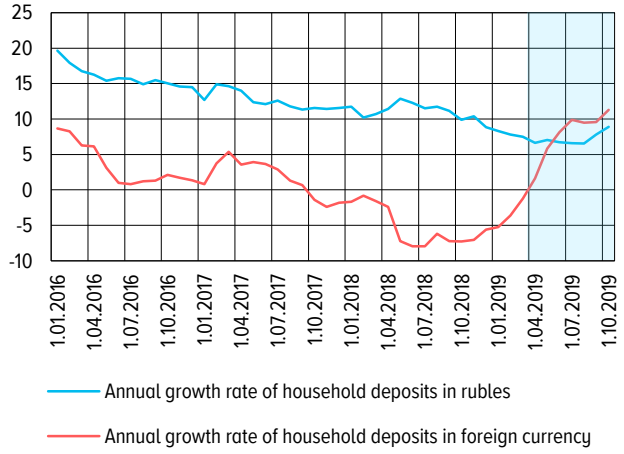
Chart 28



Source: reporting form 0409101.

GROWTH RATE OF THE HOUSEHOLD DEPOSIT PORTFOLIO
(%)

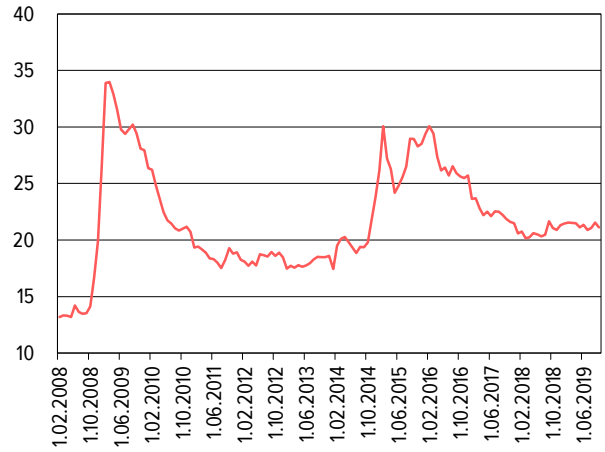
Chart 29



Source: reporting form 0409101.

DOLLARISATION OF HOUSEHOLD DEPOSITS
(%)

Chart 30



Source: Bank of Russia's Banking Sector Review.

setting negative interest rates for a number of foreign currencies on accounts of Russian banks' customers is not provided for by Russian law. In addition to the increased dollarization, this may lead to a reduction in the banks' net interest income on operations in foreign currency: attracting euro deposits with positive returns and placing them in assets with negative returns will lead to a reduction in the interest margin on foreign exchange transactions. Among the currencies of countries with negative rates, the euro accounts for the largest deposit portfolio of Russian banks. Currently, the impact of negative rates in the eurozone on Russian banks' profits is insignificant (about 1% of the banking sector's profits); however, it may increase with the growing attractiveness of arbitrage. In the light of banks' requests, the Bank of Russia is currently considering this issue.

In April–October 2019, the dollarization level of bank liabilities to the population remained relatively stable. By the end of Q1 2019, the volume of foreign currency household deposits recovered after an outflow in 2018 and continued to grow (Chart 28). The annual growth rate of the retail deposit portfolio in foreign currency had increased to 11.4% by 1 October 2019 (Chart 29).

To suppress the risks of the growth of dollarization in the credit institutions' liabilities, effective from 1 July 2019, the Bank of Russia increased reserve requirements for foreign currency liabilities to individuals by 1 p.p. to 8.0%. At the same time, the Bank of Russia in cooperation with the Ministry of Finance of Russia is planning to propose the legislative reduction for the marginal deviation

of interest rates on FX deposits from the base rate of return on FX deposits that determines the additional and increases additional insurance premiums. According to this proposal, additional premium will be paid if the interest rate on FX deposits exceeds the base rate by 1-1.5 p.p. (instead of current range of 2-3 p.p.), increased additional premium will be paid if interest rate on FX deposits exceeds the base rate by 1.5 p.p. (instead of current 3 p.p.).

Amid the measures taken, the dollarization of household deposits has remained at a stable level of about 21% (Chart 30) in recent months, and it has not required additional measures by the Bank of Russia.

Vulnerability 3. Dependence on external financing. Money market benchmarks reform.

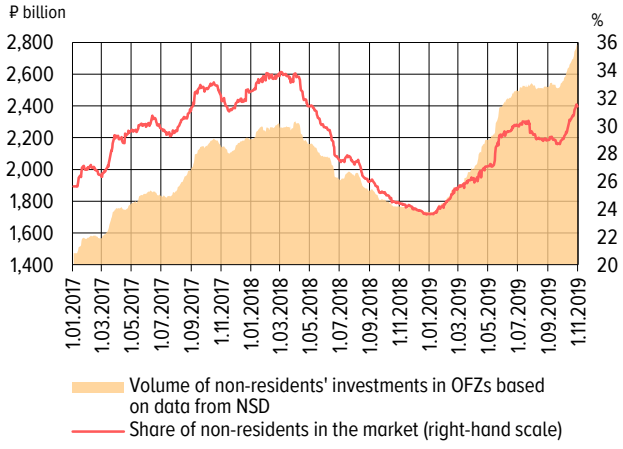
Dependence on external financing

Dependence on foreign financing is a traditional vulnerability for emerging markets. In Russia, the significant presence of foreign investors in the government bond market, on the one hand, contributes to decreased bond yields, but, on the other hand, it may lead to imbalances in the supply to demand ratio during certain periods.

In Q2 2019, against the backdrop of favourable market conditions, the Ministry of Finance of Russia placed record high OFZ volumes: with a planned volume of placements of ₽600 billion (at par value), the Ministry of Finance placed OFZs for ₽870 billion. This helped the Ministry of Finance reduce the borrowing programme for the third quarter and place OFZs at higher prices. In Q2 2019, foreign investors demonstrated increased interest in OFZs as part of the carry trade strategy, but in the third quarter the share of non-residents in the market remained stable at about 29.0%[6] (Chart 31). After a significant increase in non-residents' demand for OFZs in Q2 2019, the ratio of net purchases by non-residents and the net supply of securities[2] by the Ministry of Finance in the third quarter decreased on average (Chart 32). In general, the increase in non-residents' investments in OFZs on foreign depository accounts opened with NSD amounted to ₽545 billion in Q2 and Q3 2019.

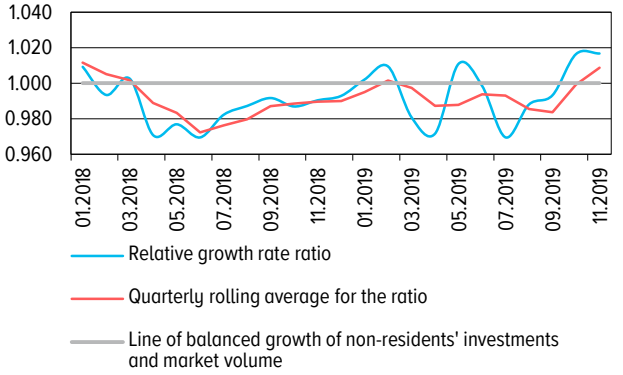
As of 1 November 2019, amid favourable external and internal conditions, OFZ purchases by non-residents slightly exceeded the placement volume, and the line of balanced growth[7] was ex-

DYNAMICS OF THE VOLUME OF OFZS HELD BY NON-RESIDENTS ON FOREIGN DEPOSITORY ACCOUNTS OPENED WITH NSD *Chart 31*



Source: NCI JSC NSD.

ESTIMATED RATIO OF NET PURCHASES OF OFZS BY NON-RESIDENTS AND GROWTH OF OFZ MARKET VOLUME, RELATIVE GROWTH RATE RATIO* *Chart 32*

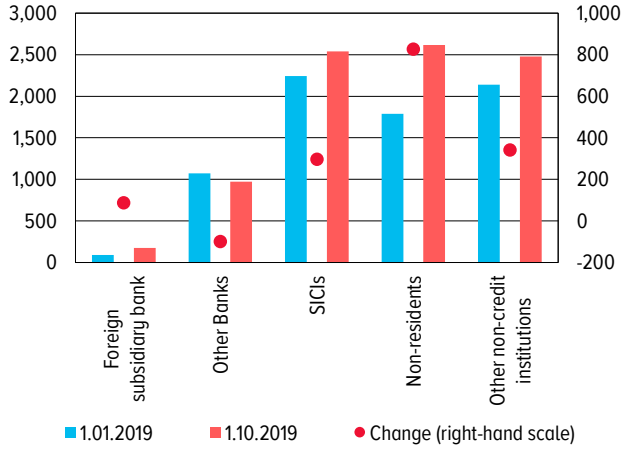


$$* \ \frac{\left(1 + \frac{\text{Growth of non-residents for the period}}{\text{Volume of OFZ market at the beginning of the period}}\right)}{\left(1 + \frac{\text{Growth of OFZ market volume fo the period}}{\text{Volume of OFZ market at the beginning of the period}}\right)}$$

[6] *On 26 July, the rapid change in the share of non-residents by minus 0.7 p.p. was associated with a one-time growth in the volume of placed OFZs by ₽212 billion as a result of the measures implemented to support VEB.*

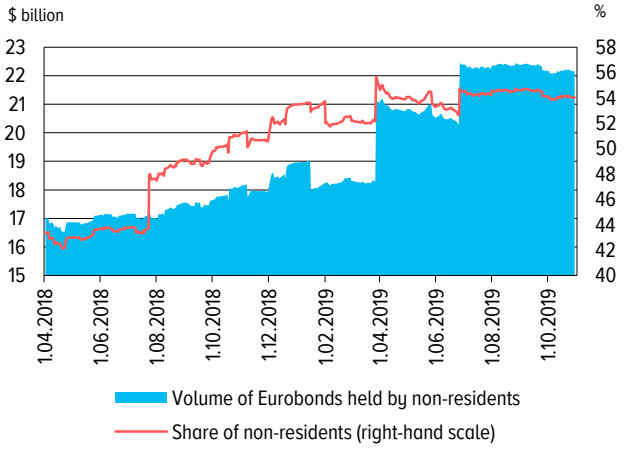
[7] *The line of balanced growth of non-residents' investments and market volume (= 1 or 100%). The condition when the growth of non-residents' investments in OFZs is equal to the growth of the volume of the OFZ market.*

DYNAMICS OF INVESTMENTS IN OFZS BROKEN DOWN BY PARTICIPANT TYPES BASED ON THE BANK OF RUSSIA'S REPORTING FORM 0409711
(₽ BILLION)
Chart 33



Source: bank reporting form 0409711.

DYNAMICS OF THE VOLUME OF EUROBONDS HELD BY NON-RESIDENTS ON FOREIGN DEPOSITORY ACCOUNTS OPENED WITH NSD
Chart 34



Source: NCI JSC NSD.

ceeded by 1.6 p.p. The growth was caused by increased OFZ placement for the terms popular among non-residents (6–10 years) and deferred demand for them from non-residents. In future, taking into account the reduced interest rates in the market as well as stabilised supply, the ratio of net purchases of OFZs by non-residents and the growth in OFZ market volumes is expected to return to the line of balanced growth.

Demand on the part of domestic participants is an important condition for market stability. In 2019, among local participants, the largest increase in the portfolio of investments in OFZs was observed among non-credit financial institutions and SIBs by ₽350 billion and ₽297 billion, respectively (Chart 33). Among credit institutions, the largest increase in OFZ investments in relation to assets was seen among foreign subsidiary banks from 4.3% to 8.1%, which is explained by the low base effect at the beginning of 2019.

In addition to placing OFZs in 2019, the Ministry of Finance carried out two Eurobond issues (on 21 March and 20 June) totalling $5.5 billion and €750 million. This attracted volume exceeds the placed volumes in 2018 ($4 billion and €1 billion). The introduction of new sanction restrictions on American investors' ability to participate in the initial placement of sovereign non-ruble bonds has had an insignificant impact on the share of non-residents' investments on foreign depository accounts opened with NSD. In 2019, foreign investors increased investments on foreign depository accounts opened with NSD by $3.2 billion[8], and their share increased by 0.51 p.p. to 54.0% (Chart 34).

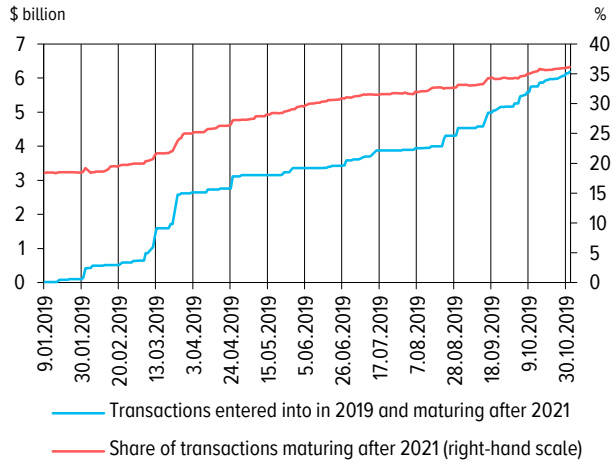
The factor that helps maintain the stability of the Russian market is strong domestic demand from both systemically important banks and non-bank financial organisations. The fundamental attractiveness of OFZs is associated with low total public debt, a high credit rating, a significant margin of safety of the Russian budget under the budget rule and a continued budget surplus along with the replenishment of reserve funds.

Gradual abandonment of LIBOR as a benchmark rate for money market

The international financial market has for a long time considered abandoning LIBOR as a benchmark money market rate due to a number of its shortcomings. Among them, the exposure to risk of manipulation, low representativeness, and its difference from the actual cost of borrowing in the money market are usually mentioned. There are currently risks of the discontinuation of LIBOR after

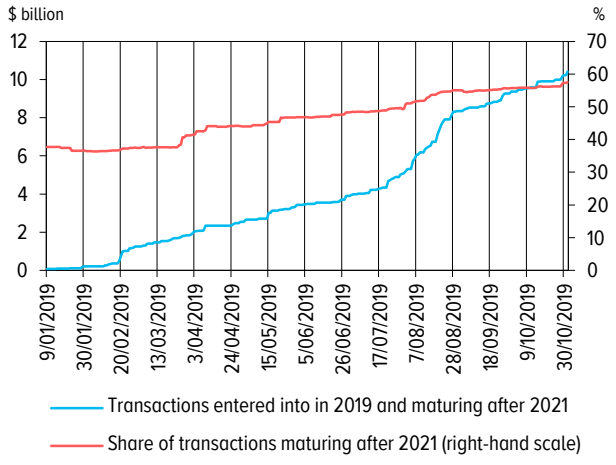
[8] *Eurobonds in euros have been converted into US dollars at the Bank of Russia's cross rate.*

CURRENCY INTEREST RATE SWAPS *Chart 35*



Source: NCI JSC NSD.

PLAIN VANILLA INTEREST RATE SWAPS *Chart 36*



Source: NCI JSC NSD.

2021.[9] Since April 2018, the US Federal Reserve and the Bank of England have been publishing the calculated SOFR and SONIA rates, respectively, and in October 2019 the ECB began calculating and publishing an alternative to LIBOR on the European market—ESTR (euro short-term rate). However, despite the clear tendency toward a transition to alternative rates, many contracts that mature after 2021 are still concluded with reference on LIBOR. According to the US law agency Arnold & Porter, the volume of LIBOR contracts maturing after 2021 amounts to about $35 trillion.

In the Russian derivatives market, LIBOR is most often used in floating rate transactions. In 2019, LIBOR transactions maturing after 2021 are also concluded extensively. In the currency interest rate swap segment, from the beginning of the year to 1 November 2019, $6.2 billion worth of such transactions were concluded, and $10.4 billion worth of plain vanilla (single-currency) interest swaps were concluded.[10] The total share of such transactions (in terms of open positions) in the segment of currency interest rate swaps as of 1 November 2019 exceeded 36%, while in the segment of plain interest rate swaps it had already exceeded 57% (Chart 35 and Chart 36). Most LIBOR interest rate swap contracts expire in 2022, 2023 and 2024 ($5 billion, $3.6 billion and $4 billion, respectively) (Chart 37). Plain (single currency) LIBOR interest rate swaps were concluded for longer periods—contracts worth $10.3 billion are to expire only after 2025 (Chart 38).

Thus, market participants continue to actively use the LIBOR rate as a floating rate for foreign currency contracts (in addition to the dollar rate, the rates in euros, British pounds, Swiss francs and Japanese Yen are also used), which bears certain risks when switching to alternative money market rates.

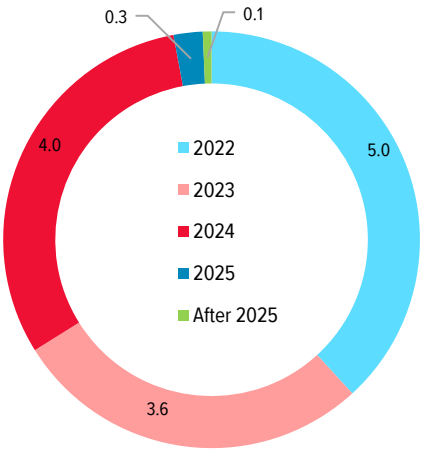
In corporate lending, most transactions are concluded at fixed rates (69%), and the total share of LIBOR loans remains low at the level of 6%.[11] However, if only floating rate transactions are considered, then the share of LIBOR is 20% (Chart 39). Moreover, among foreign currency floating rate loans, LIBOR transactions are the most popular. However, unlike in the derivatives market, the volume and share of new LIBOR floating rate transactions remain low in the corporate lending market. From 2017 to the current period, the volume of new transactions in each quarter concluded with

[9] *The UK Financial Conduct Authority has reached an agreement with contributing banks to voluntarily participate in calculating the LIBOR rate until the end of 2021. After 2021, contributing banks may refuse to participate in the calculation of the rate, which may lead to an even greater loss of the representativeness of LIBOR and, as a result, to the cessation of LIBOR's publication.*

[10] *As of October 2019*

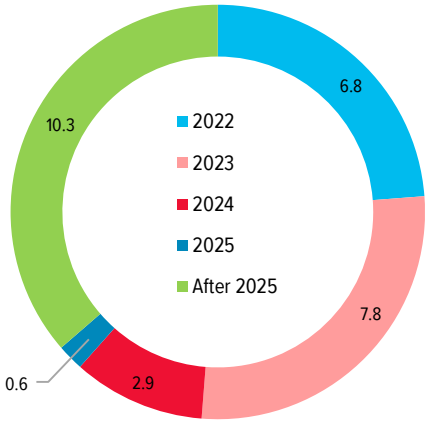
[11] *As of the beginning of 2019 Q3*

CURRENCY INTEREST RATE SWAPS BROKEN DOWN BY TIME LEFT TO MATURITY
($ BILLION)
Chart 37



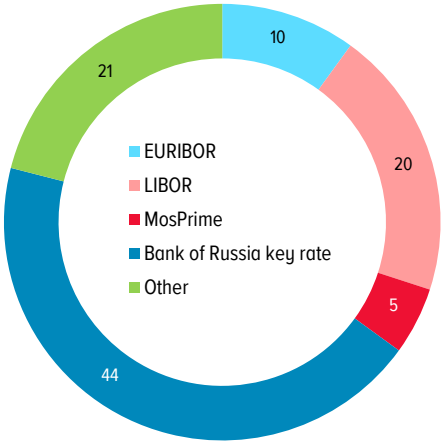
Source: NCI JSC NSD.

PLAIN VANILLA INTEREST RATE SWAPS BROKEN DOWN BY TIME LEFT TO MATURITY
($ BILLION)
Chart 38



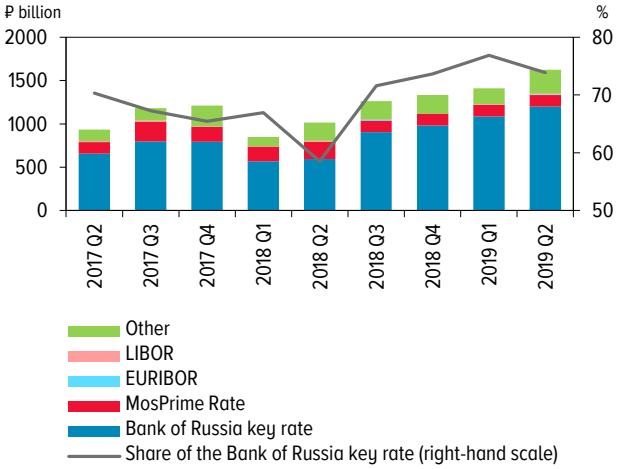
Source: NCI JSC NSD.

CORPORATE LOAN PORTFOLIO STRUCTURE (UNDER FLOATING RATE AGREEMENTS)
(%)
Chart 39



Source: Reporting form 0409303.

DYNAMICS OF NEW LOAN STRUCTURE ISSUED TO LEGAL ENTITIES, 2017–2019
Chart 40



Source: Reporting form 0409303.

reference to LIBOR have not exceeded ₽11 billion (in ruble terms), which is insignificant as compared to the market of loans issued to legal entities at a floating rate (Chart 40).

Currently, many organisations are in the process of issuing recommendations on transition to alternative rates. The International Swaps and Derivatives Association (ISDA) is developing a number of measures aimed at supporting the derivatives market after 2021. In addition to choosing alternative rates, a mechanism to replace LIBOR in existing contracts is also being developed. The Alternative Reference Rates Committee developed recommendations on the use of SOFR (A User's guide to SOFR). In 2019, transportation company National Express for the first time took out a loan referencing SONIA. In May, the British company transferred coupon payments on bonds worth £65 million from LIBOR to SONIA. However, the future of LIBOR contracts maturing after 2021 remain uncertain. Risks may arise not only if the publication of LIBOR is completely discontinued. Even if LIBOR continues to be published, its representativeness may be lost. In addition, problems may arise due to the lack of necessary regulation on LIBOR replacement rates (for example, European regulation may prohibit the use of a rate, but such regulation does not exist in the US). The sooner Russian participants begin to transition from LIBOR to alternative rates or introduce fallback provisions in contracts, the less the exposure to the risk of termination of LIBOR worldwide will be.

Vulnerability 4. Growth in the share of long-term assets against the backdrop of a significant share of short-term funding of banks

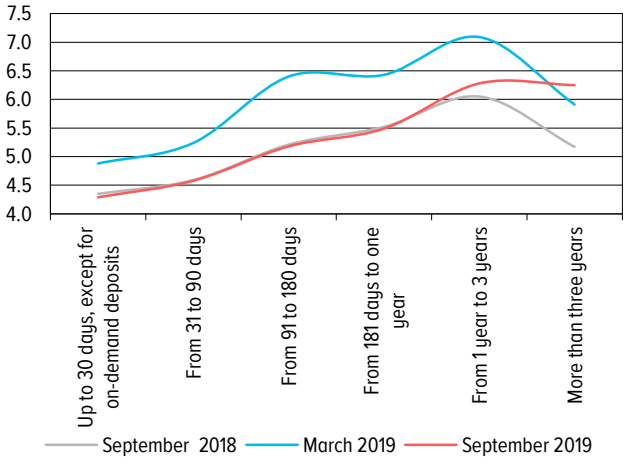
Slowing inflation and lower rates in the financial sector contributed to lower rates in the main segments of the deposit and credit markets in Q2 and Q3 2019. Banks were cutting rates at a faster pace in the short-term operation segment, which, amid anticipated further reduction of rates in the economy, led to an increase in the attractiveness of long-term savings. However, banks' dependence on short-term funding still significantly exceeds the level of late 2014 and as of 1 October 2019 amounts to 61.8% (the share of short-term deposits in total deposits). Further support for price stability will contribute to an increase in the share of long-term savings in the banking sector.

The main contribution to extending the maturity of the banks' deposit portfolio was made by a change in the retail deposit term structure. The share of long-term household deposits had grown by 1.0 p.p. to 41.2% of the retail deposit portfolio over the last 12 months by 1 October 2019. Moreover, the most noticeable structure change occurred in the ruble segment. The share of short-term foreign currency deposits has also declined over the last six months, but as of 1 October 2019 it exceeded the value of 1 October 2018 by 5.3 p.p. due to a significant increase in deposits for a period from 30 days to 1 year at the end of 2018. The increase in the attractiveness of long-term ruble savings was due, among other things, to the widening spread between the ruble deposit rates for a period of up to 1 year and more than 1 year, which increased by 25 b.p. in April–September to 1.17 p.p. (Chart 41). Under such conditions, the strong growth of long-term household ruble deposits which began in January 2019 continued throughout the next seven months. As a result, the share of short-term household ruble deposits declined in the total volume of ruble deposits by 2.7 p.p. during the year (Chart 42), but it exceeds the level of late 2014 by 23.3 p.p.

As a result, the maturity mismatch has somewhat decreased; however, it remains at a high level. During the last 12 months, the interest gap under ruble bank book instruments in the interval up to 1 year declined, while it increased in the interval of more than 1 year (Chart 43).

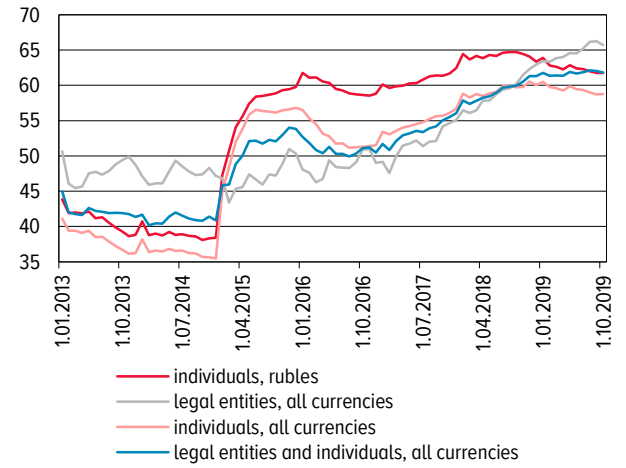
Such an imbalance is a factor in increasing the potential exposure of credit institutions to liquidity risk and interest rate risk. In addition, amid lower rates, the demand for loan refinancing has grown among both households and businesses. To create the possibility of long-term loan refinancing by banks, it is necessary to develop a market for asset securitisation, which will partially help reduce the volume of long-term assets of banks and thereby reduce the percentage gap.

WEIGHTED AVERAGE YIELD CURVE OF HOUSEHOLD DEPOSITS IN RUBLES *Chart 41*
(%)



Source: reporting form 0409129.

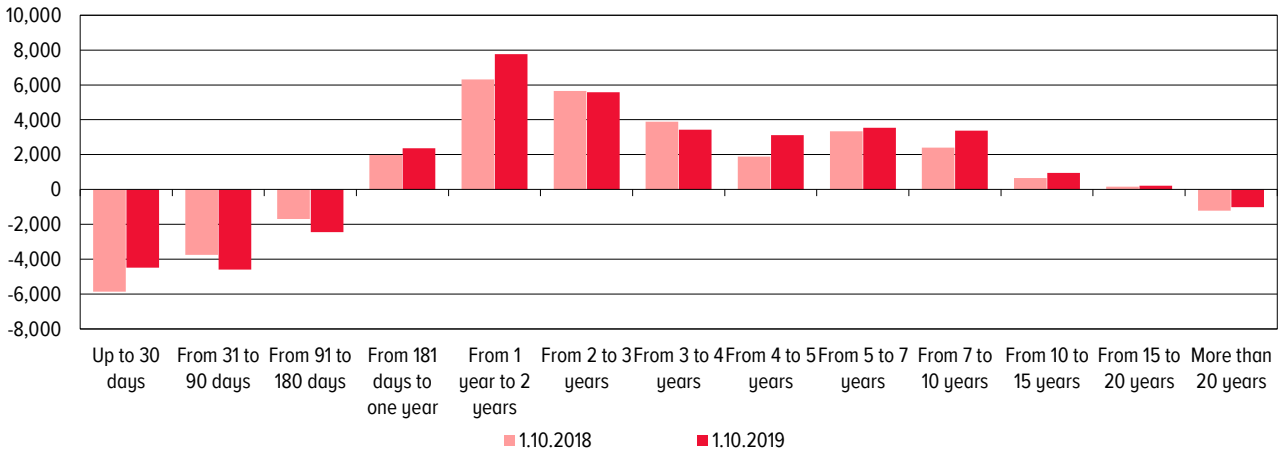
SHARE OF RUBLE DEPOSITS MATURING WITHIN ONE YEAR IN TOTAL RUBLE DEPOSITS *Chart 42*
(%)



Source: Bank of Russia's Banking Sector Review.

DYNAMICS OF THE INTEREST GAP UNDER RUBLE BANK BOOK INSTRUMENTS
(₽ BILLION)

Chart 43



Source: reporting form 0409127.

2.2. AREAS FOR THE FURTHER DEVELOPMENT OF THE BANK OF RUSSIA'S MACROPRUDENTIAL POLICY

2.2.1. The results of discussions of the consultation paper 'On the Development of the Bank of Russia's Macroprudential Policy in Retail Lending'

To develop approaches to improving macroprudential policy in the area of limiting the risks of retail lending, the Bank of Russia has performed a review of Russian and foreign experience in restricting lending in high-risk segments. The results of the conducted study as well as the assessment of effectiveness of various macroprudential instruments and suggestions on possible options for implementing measures for the quantitative restriction of retail lending in the Bank of Russia's practice are presented in the report[12]. It should be noted that macroprudential risk-weights add-ons (currently used by the Bank of Russia) and direct quantitative restriction measures (described in the report) have significant differences. Capital add-ons are based on increased requirements for credit organisations' mandatory capital, making it possible to continue lending in high-risk segments with Tier II capital, while quantitative restrictions directly limit the issuance of certain types of loans regardless of the capital available to the bank.

The Bank of Russia collected and analysed the views of credit organisations and their associations[13]. In general, representatives of the banking community support the Bank of Russia's current macroprudential policy in retail lending, noting primarily its effectiveness in terms of increasing the stability of the banking system (creating capital buffers). In particular, according to banks, one of the main advantages of applying risk-weights add-ons is the banks' ability to independently determine loan issuance business plans based on bank capital adequacy ratios. Other participants, as a drawback of applying risk-weights add-ons, indicate that the use of this tool has a major effect on credit institutions with a relatively low capital adequacy level.

In terms of comparing measures for applying risk ratio premiums and quantitative restrictions on the issuance of certain types of loans, some banks assess the latter as a less flexible alternative to risk-weights add-ons.

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[12] *The Consultation Paper 'On the Development of the Bank of Russia's Macroprudential Policy in Retail Lending' was released on 10 September 2019 on the official Bank of Russia website in the Information and Analytical Materials/Consultation Papers section (http://www.cbr.ru/Content/Document/File/79964/Consultation_Paper_190910.pdf)*

[13] *Views from other financial market participants, including microfinance organisations, have not been sent to the Bank of Russia.*

Some banks have stated that the proposed direct quantitative restrictions depending on borrowers' DSTI[14], LTV[15] and the loan term can mitigate the risks associated with an unbalanced increase in the debt burden, while the main concerns are related to the possible restriction of access of some groups of the population, in particular, citizens who already have loans, citizens with unofficial incomes and low-income citizens, to loan products, which, in turn, may lead to an increase in the 'shadow' lending market.

In our opinion, these risks could be mitigated by the flexible quantitative restrictions mechanism. Full prohibition of issuance of loans with certain level of borrower debt burden could be replaced by the limit on share of such loans in the loan portfolio. This measure would allow taking into account the accessibility of credit to certain groups of citizens. If the level of DSTI is high, but a bank considers the borrower as a reliable, the loan could be granted. Moreover, when considering introduction of certain measures, the Bank of Russia will comprehensively assess the environment, including systemic risks that would arise if the risky structure of loans persist and potential side effects attributed to lowered access to credit. As for the "shadow" lending market, the Bank of Russia in cooperation with enforcement authorities is executing a number of measures aimed at identification and combating illegal lenders.

One of the respondents also mentioned the risk of 'fixing' the structure of the banking sector and restricting competition in retail lending segments if quantitative restrictions are used.

Regarding a possible model for the implementation of direct quantitative restriction measures in the existing mechanism of macroprudential regulation, the opinions of interested market participants were divided: preferences were expressed both in favour of Model 1 (the simultaneous use of direct quantitative restrictions on the issuance of certain types of loans and the application of increased risk-weights add-ons) and in favour of Model 2 (establishing direct quantitative restrictions on the issuance of certain types of loans and applying increased risk-weights add-ons only if lenders exceed the established limits).

At the same time, many credit organisations believe that the decision to establish direct quantitative restrictions should be applied after assessing the effect of the introduction of risk ratio premiums on 1 October 2019 differentiated depending on personal DSTI level. In this case, the integral steps in the development of measures should be:

1) to study the potential borrowers' sensitivity to restrictive measures (for example, in case of credit restrictions by region of residence are applied) in order to identify the social and economic effect;

2) to study the sensitivity of the financial and banking sectors (for example, the rate of debt amortization) in order to obtain feedback from financial institutions, recommendations on techniques for implementing the measures, etc.

Additionally, as alternative options for implementing direct quantitative restrictions, respondents proposed:

- using macroprudential instruments in the form of recommendations, since if this approach is implemented, credit organisations will be able to independently determine the strategy for achieving the targets set by the regulator;
- setting direct quantitative restrictions on an individual basis for each credit institution, taking into account the results of supervisory measures and identified vulnerabilities of business models (in particular, according to the results of stress tests).

Credit organisations have supported the Bank of Russia's proposal to extend the quantitative restrictions to both credit and non-credit financial organisations since the introduction of quantitative restrictions on a universal basis will avoid the regulatory arbitrage.

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[14] *Debt Service to Income ratio.*

[15] *LTV (loan-to-value) means the ratio of principal loan debt to the fair value of the collateral.*

In future, the Bank of Russia, taking into account the results of the consultations, will prepare a draft amendment to the current legislation. In developing these changes, the experience of implementing the current macroprudential policies in retail lending (risk-weights add-ons differentiated depending on the EIR and DSTI ratios) will be taken into account, including an assessment of their effectiveness and the direct and indirect consequences.

2.2.2. On the results of the analysis of credit organisations' internal methods to calculate the DSTI ratio

Starting from 1 October 2019, credit and microfinance organisations are obliged to calculate the borrowers' debt burden indicator ('debt service to income ratio'). To monitor the adaptation of financial institutions to the new regulatory requirements, the Bank of Russia has analysed the internal methods of 30 credit organisations whose portfolio of loans to individuals exceeds ₽60 billion[16] for calculating the debt service to income ratio (the 'internal methods').

The preliminary assessment of the specified credit organisations' compliance with the Bank of Russia's requirements for calculating the debt service to income ratio shows that internal methods are on the whole consistent with the aims of Bank of Russia Ordinance No. 4892-U[17]. When calculating the debt service to income ratio, the vast majority of credit organisations use the following general approaches:

1. In their internal methods, credit organisations provide for the right to additionally recalculate the payment to income ratio in the following cases:

- upon receipt of a borrower's updated credit history from the credit history bureau (CHB)
- when a borrower submits documents confirming a substantial change in his/her financial condition
- upon repayment by the borrower of overdue debt that they had at the time of the initial calculation.

2. The calculation of the amount of average monthly payments on loans provided by other lenders is carried out mainly using the information contained in the credit reports of the CHBs. Credit institutions usually request information on borrowers' loans and borrowings from the three largest CHBs. When working with CHB data, banks apply the procedure recommended by the Bank of Russia[18] as well as special software systems that enable them to request, process and store (in a special format) information about customers' credit histories found in all, one or several credit history bureaus with which the bank has concluded an information services agreement.

Other documented information (in particular, the repayment schedule provided by the borrower and signed by the creditor (lender) and/or a loan application executed by the borrower, including the borrower's confirmation that the information contained in the application is reliable) is used by credit institutions in exceptional cases, if they have sufficient reasons to believe that the credit reports contain unreliable information, for example, they differ significantly from market conditions.

3. The amount of average monthly payments under loans issued using a bank card is mainly calculated by banks based on the value of the established credit limit. The amount of average monthly payments under a loan extended using a bank card by the credit organisation that is calculating the payment to income ratio is estimated in the same manner.

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[16] *According to reporting form 0409115, the share of debt of these credit organisations under loans granted to individuals as of 1 October 2019 is 91.5% of the total debt of the banking sector under these loans.*

[17] *Bank of Russia Ordinance No. 4892-U, dated 31 August 2018, 'On Types and Characteristics of Assets for Which Risk-Based Capital Add-ons Are Set and on the Methodology for Applying These Add-ons to the Said Types of Assets for Credit Institutions to Calculate Their Capital Adequacy Ratios'.*

[18] *Bank of Russia Information Letter No. IN-05-35/48, dated 11 June 2019, 'On the Calculation by Credit Institutions of a Borrower's Debt Burden Ratio Based on Information Received from a Credit History Bureau'.*

4. When assessing borrowers' average monthly incomes, banks mainly use supporting documents. If the bank is unable to confirm a borrower's income with official documents, the average monthly income of the borrower is usually determined as the lesser of the following:

- the amount of imputed income determined on the basis of the CHB credit reports
- the amount of income indicated by the borrower in the application form
- the arithmetic average per capita income in the region where the borrower is located, and in which the borrower is registered at the place of residence or stay in the Russian Federation, calculated over 12 months on the basis of the latest data published on the official website of the Federal State Statistics Service.

However, it has been found that some procedures accompanying the calculation of the debt service to income ratio have not been reflected in internal methods. Moreover, some credit organisations have not taken into account the changes made to the procedure for calculating the debt service to income ratio by Bank of Russia Ordinance No. 5219-U, dated July 30, 2019[19]. The Bank of Russia plans to publish recommendations for improving internal methods.

2.2.3. On the results of the survey of banks' corporate portfolio

The high level of debt burden of a number of non-financial organisations continues to be a source of systemic risk for the banking sector. Amid a reduction in the external debt of the corporate sector, the debt of major companies to Russian banks is growing (Chart 44). Such trend is natural; at the same time, concentration of risks on borrowers with a high debt burden may become a source of risk for the banking system. In this regard, the Bank of Russia is considering the possibility of using macroprudential measures to limit the debt burden of non-financial companies with a systemically important absolute level of debt that have an elevated level of debt metrics.

When considering this issue after the publication of the consultation paper[20], in Q2 and Q3 2019, the Bank of Russia held a number of meetings with the banking community and conducted a survey of the corporate portfolio of some systemically important credit institutions. In general, credit institutions that expressed their opinion on the consultation paper agree that there is a tendency to increase concentration on the largest borrowers in bank loan portfolios; therefore, restrictive measures should be introduced in relation to large non-financial companies with excessive debt burden. Some banks also suggest taking industry specifics into account when setting critical threshold values for financial ratios. Based on the survey results, two debt metrics ('Total Debt/EBITDA' and 'EBITDA/Interest Expenses') with the greatest impact on the assessment of large corporate borrowers' financial condition have been identified. Based on these ratios, it is possible to conduct sectoral differentiation of companies' debt burden to take into account the specifics of their activities (Chart 46).

At the same time, the corporate portfolio survey has revealed significant differences in the methods for calculating debt metrics among various credit organisations, which emphasises the need to develop a unified methodology for calculating debt burden indicators in order to apply measures to limit non-financial organisations' debt burden. Moreover, the survey has shown a significant difference in the assessment of the probabilities of default (PD) for some borrowers from different banks, which may indicate that the largest companies' risks have not been taken into account to the full extent, and, as a consequence, that macroprudential measures are needed.

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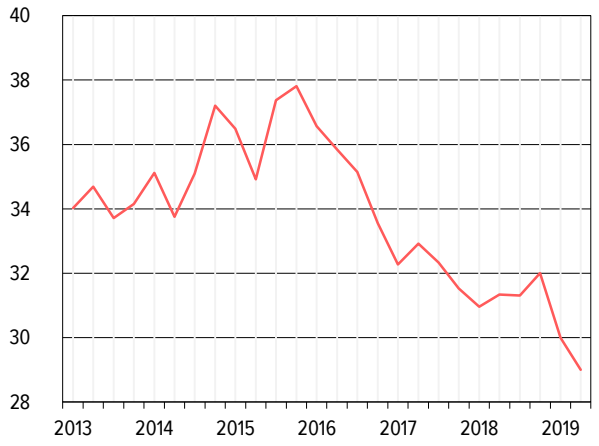
[19] *Bank of Russia Ordinance No. 5219-U, dated 30 July 2019, 'On Amending Bank of Russia Ordinance No. 4892-U, dated 31 August 2018, 'On Types and Characteristics of Assets for Which Risk-Based Capital Add-ons Are Set and on the Methodology for Applying These Add-ons to the Said Types of Assets for Credit Institutions to Calculate Their Capital Adequacy Ratios', effective from 1 October 2019.*

[20] *Consultation paper "On possible macroprudential measures for limiting debt burden of non-financial organisations" (published on 11 April 2019)*

SHARE OF EXTERNAL BORROWINGS IN TOTAL CORPORATE DEBT
(%)

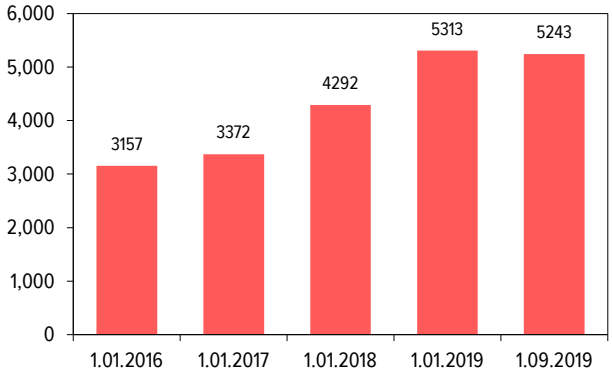
Chart 44



Source: Bank of Russia.

CREDIT RISK VOLUME FOR MAJOR BORROWERS*
(₽ BILLION)

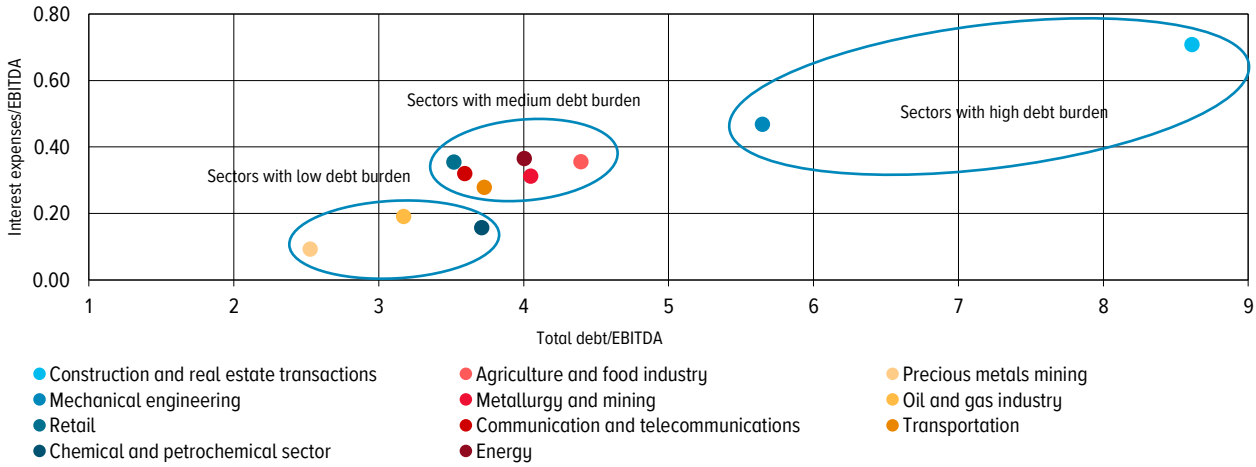
Chart 45



** Exposures to 25 companies for which the amount of credit risk exposure corresponding to the value of credit risk volume used in calculating ratio N6 exceeded ₽100 billion as of 1 January 2019 at least in one bank.*
Source: reporting form 0409118.

SECTORAL DIFFERENTIATION OF COMPANIES' DEBT BURDEN

Chart 46



- Construction and real estate transactions
- Mechanical engineering
- Retail
- Chemical and petrochemical sector
- Agriculture and food industry
- Metallurgy and mining
- Communication and telecommunications
- Energy
- Precious metals mining
- Oil and gas industry
- Transportation

Based on average ratios for the last 5 years. For the 'Communications and telecommunications', 'Transportation', and 'Retail' sectors, a retrospective correction has been made, taking into account the implementation of new IFRS 16 'Leases'.
For visual clarity, the EBITDA/interest expenses ratio has been reflected in the chart upside down so that the growth of both ratios signifies growth of the debt burden.
Source: survey of systemically important credit institutions' corporate portfolio.

3. ASSESSMENT OF SYSTEMIC RISKS OF THE BANKING SECTOR

In Q2 and Q3 2019, one of the factors in reducing the systemic risks of the banking sector was the improvement of quality of the loan portfolio (reducing the share of loans of quality categories IV and V to 12.0%). Increase of profit of the banking sector reflected in an increase in return on assets. For the period from 1 October 2018 to 1 October 2019 the return on assets grew from 1.4% to 1.9%; return on equity grew from 12.4% to 17.4%. The stability of the banking sector is characterised by the significant level of the capital adequacy ratio of 14.4% (not including banks that have undergone financial recovery) as of 1 October 2019, which ensures adequate capital reserves.

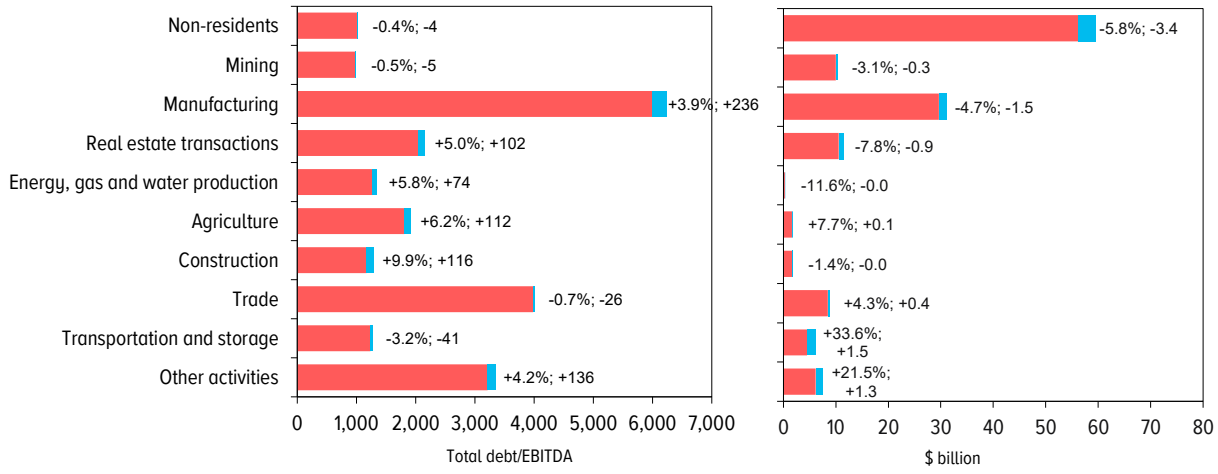
Dynamics of credit activity and the quality of corporate bank loan portfolios

Credit activity in the corporate segment remains restrained (the annual growth rate of loan debt amounted to 3.7% as of 1 October 2019[1]). At the same time, debt under ruble loans continues to increase, while it declines under foreign currency loans. A number of banks are reviewing the terms of contracts, changing the loan currency from foreign currencies to rubles. The loan portfolio quality continues to improve; the share of loans of quality categories IV and V has decreased by 0.5 p.p. to 12.0% from 1 April to 1 October 2019[2]. There has been a slight increase in the frequency of borrowers' loans being overdue by more than 90 days, mainly for loans to small companies.

From 1 April to 1 October 2019, debt on ruble loans to non-financial institutions increased by 3.5%[3]. A significant increase in loan debt was observed for loans to companies engaged in manufacturing, construction, real estate and agriculture.

The loan portfolio quality has improved in the banking sector as a whole. A high proportion of loans of quality categories IV and V remains in the construction industry (29.4% for ruble loans and 39.6% for FX loans)[4] and for companies engaged in operations with real estate (32.8% for FX loans).

CHANGE IN OUTSTANDING LOANS FOR THE PERIOD FROM 1 APRIL THROUGH 1 OCTOBER 2019 *Chart 47*



Source: reporting form 0409303.

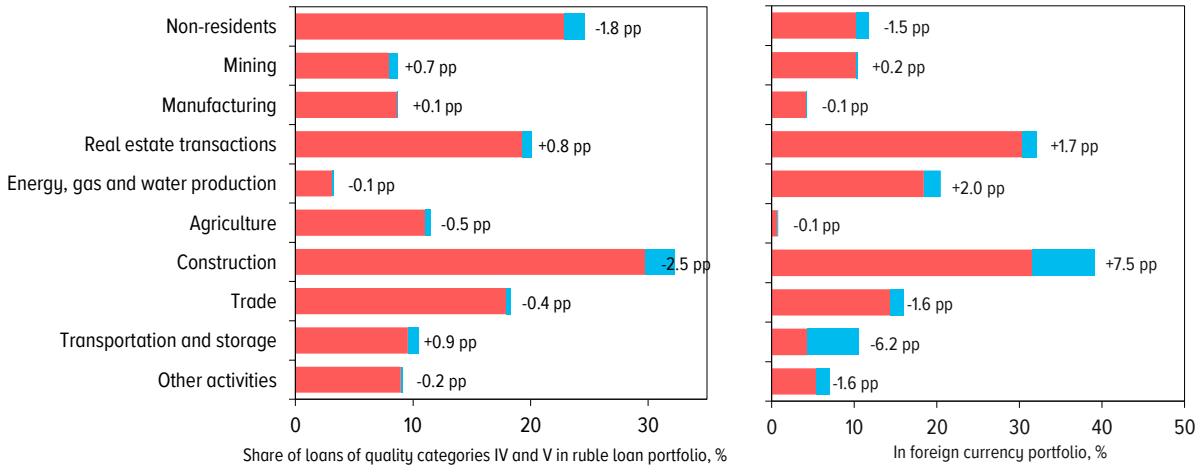
[1] *For credit institutions operating as of 1 October 2019. Net of currency revaluation.*

[2] *According to reporting form 0409115.*

[3] *For credit institutions operating as of 1 October 2019.*

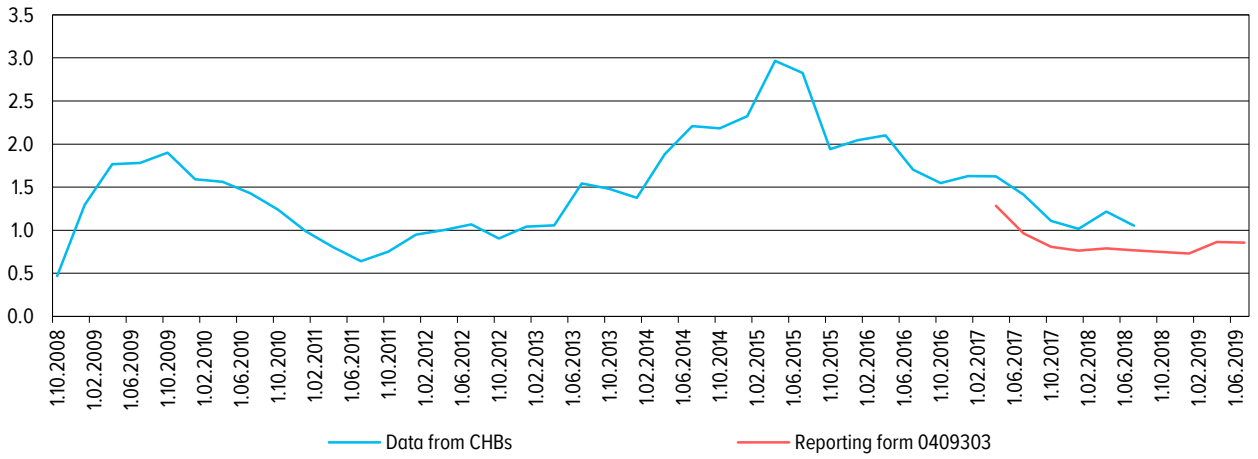
[4] *Excluding loans to housing developers, the quality of which is substantially higher (based on the analysis of loans to companies from the developers list made by DOM.RF*

CHANGE IN THE SHARE OF LOANS OF QUALITY CATEGORIES IV AND V FOR THE PERIOD FROM 1 APRIL TO 1 OCTOBER 2019 *Chart 48*



Source: reporting form 0409303.

DEFAULT FREQUENCY* OF NON-FINANCIAL INSTITUTIONS** (%) *Chart 49*



** Loans under which debt was overdue by more than 90 days within the quarter in question were classified as defaulted loans.*
*** The difference between the data from the credit history bureaus and reporting form 0409303 was caused by credit institutions with revoked licences which after the cancellation of the licence continue to send information to CHBs, although they have ceased to submit such information on the reporting form.*
Source: data from three largest CHBs and reporting form 0409303.

With the exception of banks that underwent financial recovery, the share of loans of quality categories IV and V decreased by 0.2 p.p. to 7.1%[5]. For this group of banks, loan loss provisions (LLPs)[6] under the corporate loan portfolio increased by 1.1% of net loan debt (loan portfolio minus LLPs) during the period from 1 October 2018 to 1 October 2019. Thus, the cost of risk for corporate loans remains low. For comparison, the cost of risk under unsecured consumer loans ranged from 3% to 4%.

Despite a decrease in the share of non-performing loans in the banks' corporate loan portfolio, since 1 April 2019, there has been a slight increase in the frequency of defaults on corporate loans. At the same time, defaults were mainly observed under small loans (in the amount of less than ₽5 billion), and their frequency is significantly lower than the maximum level observed in 2015.

[5] *According to reporting form 0409115.*

[6] *Adjusted for changes in LLPs due to writing off and selling the loan debts.*

Box 4. The situation in certain high-risk sectors

According to Rosstat, growth in **retail sales** continues to slow down: in Q1 2019: 1.9%, in Q2: 1.6%, in July and August: 1.1% and 0.8%, respectively. In Q2 2019, the average sale amount barely increased at all (by 0.8% YoY[1]) as compared to the same period last year. These circumstances are due to a decrease in the purchasing power of the population due to reduced real disposable income.

In the **construction sector**, the growth rate of housing commissioning in the Russian Federation remained virtually unchanged and amounted to 3.7% in H1 2019 and 3.6% in H1 2018. It should be noted that in 2018, due to aspiration of developers to form housing construction packages for the future periods, which would allow to transfer to new scheme of project financing with escrow accounts, many construction permits were issued. As a result the possibility of finalisation of the project according to old rules after 1 July 2019 was granted only to projects that met the criteria of readiness and number of DDU contracts. In H1 2019 the construction permit issuance fell significantly – by 7 times as compared to H1 2018. In light of the transfer to bank credit, developers have to build financial planning capacities as new approval processes for financing through banks require additional time. The increase in the cost of financing due to the escrow account system to be maintained by banks is estimated by developers as 2–3% per annum. Assessment of the debt burden by the median value of the net debt/EBITDA ratio was 1.23x compared to 1.06x at the end of 2018.[2] At the same time, in H1 2019, the balanced financial result (profit minus loss) of construction companies increased 2.2-fold year-on-year to ₽58.8 billion. The introduction of escrow accounts will lead to a certain increase in the cost of financing that banks will provide and, consequently, to an increase in the cost of new housing, but at the same time it will help reduce risks in the sector.

In H1 2019, after prolonged stagnation, there were signs of recovery in the commercial real estate market. According to Rosstat, in H1 2019, the largest profit growth among all enterprises of the Russian Federation was shown by companies engaged in **real estate operations**. Their profit increased 3.3-fold YoY to ₽118.1 billion. At the same time, despite the general positive market situation, there is an excess of supply over demand for medium and small facilities, which is associated with an increased level of new construction. With the increase in volumes of new construction, there is a risk of overstocking in the commercial real estate sector, which can lead to a further drop in demand for secondary market properties and a deterioration in the solvency of companies with a high share of secondary commercial real estate.

The passenger **air transportation** market has been growing. According to the results for 8 months of 2019, 11.7% more passengers were transported than in the same period of 2018. Despite a significant increase in passenger traffic, airlines' losses continue to increase (for 6 months of 2019, operating losses of airlines amounted to ₽51.9 billion), which was mainly due to an increase the cost of jet fuel in Q1 and Q2 2019 (10% and 8% YoY, respectively). In Q3 2019, the average price of jet fuel at Russian airports decreased by 3% compared to the previous quarter (the main decrease in price was in August, in January-August price fell by -6.1%), which will help reduce airlines' losses. Moreover, in October 2019, compensation to airlines was announced due to the additional fuel costs they incurred due to an increase in its cost in 2018. To support air carriers, effective August 2019, a shock-absorbing excise tax was also introduced for manufacturers of jet fuel, which involves the reimbursement of part of the costs from the budget if the cost of kerosene exceeds ₽48,300 per ton. An increase in passenger traffic, a decrease in the price of jet fuel and state support can have a positive impact on the solvency of Russian airlines, some of which demonstrate a deteriorated financial situation.

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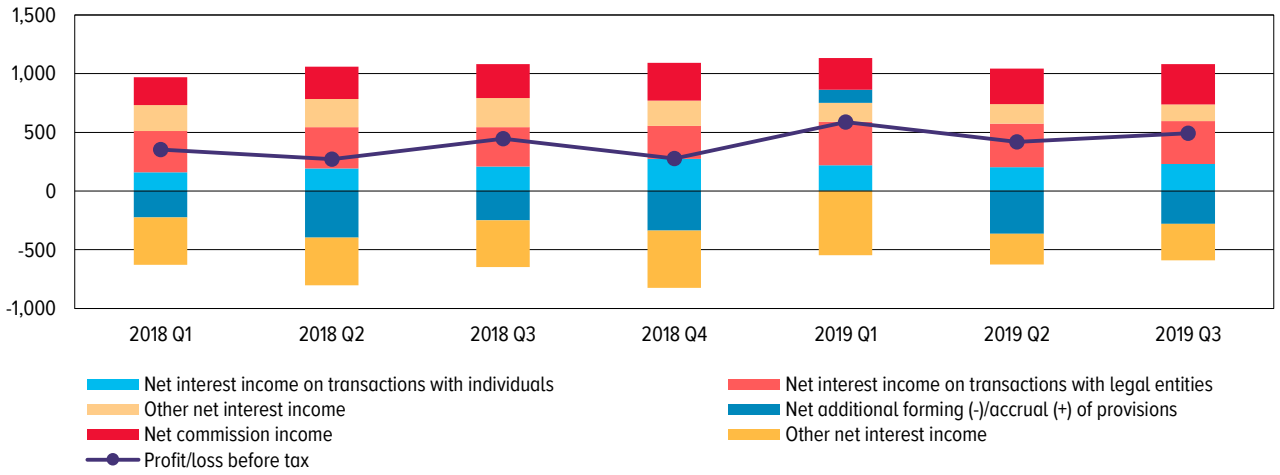
[1] According to ROMIR.

[2] According to a sample of the five largest construction sector companies disclosing consolidated financial statements.

Profitability and interest yield dynamics

The profit of the banking sector for 9 months of 2019 amounted to ₽1.5 trillion, which is higher by ₽0.4 trillion as compared to the same period last year. The profit growth was mainly technical and attributed to the adjustments in respect of loan loss provisions in accordance with IFRS 9. These adjustments positively impacted the financial result of this year (in the amount of ₽323.5 billion), whereas the negative impact of the adjustments was to a significant degree accounted for in the financial result of the past years. The return on assets increased over the period from 1 October 2018 to 1 October 2019 from 1.4% to 1.9%, while return on equity increased from 12.4% to 17.4%.

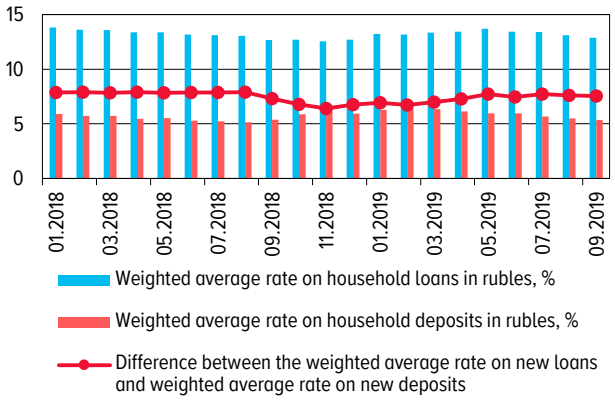
BANKING SECTOR PROFIT STRUCTURE* (₽ BILLION) *Chart 50*



** Premiums that decrease/increase the banks' interest income/interest expenses have been recorded under net interest income on other transactions. Adjustments which increase (decrease) interest incomes/expenses by the difference between interest incomes/expenses for the reporting period calculated with effective interest rate and interest incomes/expenses accrued without effective interest rate have been recorded in the respective net interest income group. Adjustments which increase interest incomes/expenses by the difference between the estimated provisions for expected credit loss and loss provisions have been recorded in the net additional forming/accrual of provisions.*

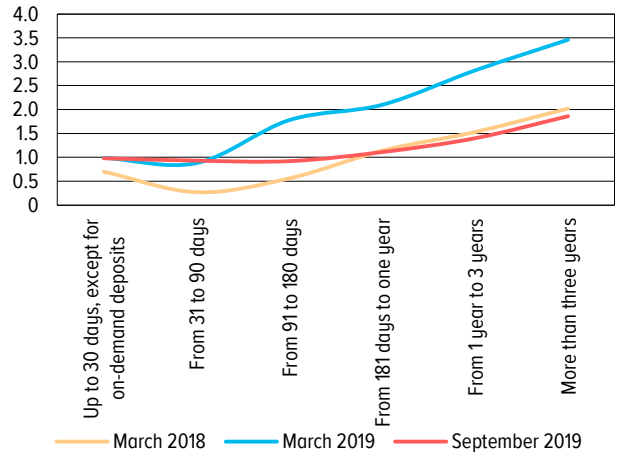
Source: reporting form 0409102.

DYNAMICS OF THE DIFFERENCE BETWEEN THE RATES ON NEW RUBLE LOANS AND DEPOSITS (P.P.*) *Chart 51*



** Based on data published on the Bank of Russia website in «Statistics», «Information on deposits of natural persons and non-financial organisations in rubles, USD and euro», for the whole Russian Federation. http://os.cbr.ru/statistics/pdko/int_rat/.*

WEIGHTED AVERAGE YIELD CURVE OF HOUSEHOLD DEPOSITS IN US DOLLARS (%) *Chart 52*



Source: reporting form 0409129.

Net interest income (₽2,2 trillion, 'NII') has remained the main source of profit for 9 months of 2019; NII on ruble household transactions made the largest contribution to its growth. For the period from 1 October 2018 to 1 October 2019, total NII contracted by ₽92.7 billion (-4.0%) also due to IFRS 9 adjustments.

During Q2 and Q3 2019, interest rates in the banking sector decreased for both deposit and loan products. In the ruble segment of the retail portfolio, banks were cutting rates on deposits at a faster pace, and, in this regard, the ruble household transaction spread also remained stable over the last six months, having increased by 55 b.p. to 7.5 p.p. during the period from 1 April 2019 to 1 October 2019 (Chart 51). In the foreign exchange segment of the retail deposit portfolio, a decrease in rates was also observed (Chart 52). During the period from 1 April 2019 to 1 October 2019, the average weighted rate on US dollar household deposits decreased by 1.2 p.p. to 1.2% and returned to the values of March 2018. Net interest margin on household transactions amounted to 5.9% over

the past 12 months by 1 October 2019 (decreased by 0.4 p.p. as compared with the data as of 1 April against the backdrop of an increase in the volume of retail lending).

Countercyclical buffer

In September, the Bank of Russia Board of Directors maintained the value of the national countercyclical buffer at 0%. The purpose of the countercyclical buffer is for banks to accumulate capital buffers during periods of the upward phase of the credit cycle and then use them during periods of materialisation of credit risks. The total debt of the non-financial sector (individuals and companies) under loans, bonds and external debt increased by 9.2%[7] over 12 months ending on 1 July 2019 (11.7% as of 1 October 2019). With respect to GDP, the change in debt amounted to -2.8 p.p. to 72.4% as of 1 July 2019. Debt reduction is facilitated by the ongoing process of dedollarization of banks' corporate loan portfolios. In this regard, the value of the credit gap calculated using the method defined by the Basel Committee on Banking Supervision continues to be negative: -11.6% of GDP as of 1 July 2019.

Capital Adequacy

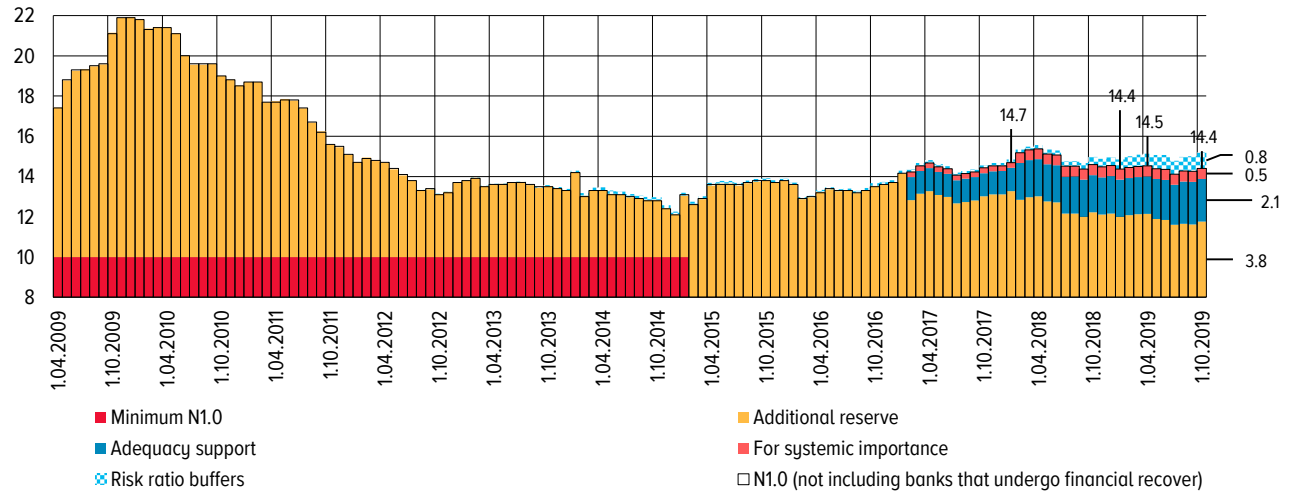
A cyclical increase in debt is observed only under loans issued to individuals. At the same time, banks have already started to form additional capital buffers from risk-weights add-ons for unsecured consumer loans and mortgages with a small down payment. Moreover, from 1 October, increased add-ons are applied for unsecured consumer loans granted to borrowers with a DSTI ratio of more than 50%. The total capital adequacy buffer formed by risk-weights add-ons increased from 0.6 p.p. to 0.8 p.p. during the period from 1 April to 1 October 2019. However, its size varies for different groups of banks. For universal banks, it ranges from 0.3 p.p. to 0.8 p.p., and for banks specialising in retail lending it ranges from 0.6 p.p. to 4.2 p.p.

Despite overall credit growth and the effect of risk ratio premiums, there have been no significant changes in the capital adequacy ratio. From 1 April to 1 October 2019, the capital adequacy ratio for credit institutions that have not undergone financial recovery decreased by 0.1 p.p. to 14.4%.

Given the different growth rates of debt for various lending segments as well as the effects of macroprudential measures in certain lending segments, it is not reasonable to set a positive countercyclical buffer.

DYNAMICS OF THE BANKING SECTOR'S CAPITAL ADEQUACY
(EXCEPT BANKS GOING THROUGH THE RESOLUTION PROCEDURE)

Chart 53



Source: reporting form 0409135.

[7] *Net of currency revaluation.*

Liquidity risk

The banking sector liquidity risk remained at an acceptable level against the background of a structural liquidity surplus. Most credit institutions amply comply with the N2 and N3 ratios. Systemically important credit institutions also have a sufficient volume of high-quality liquid assets (HQLA) to comply with the short-term liquidity coverage ratio (LCR), the minimum acceptable value of which is 100% effective from 1 January 2019.

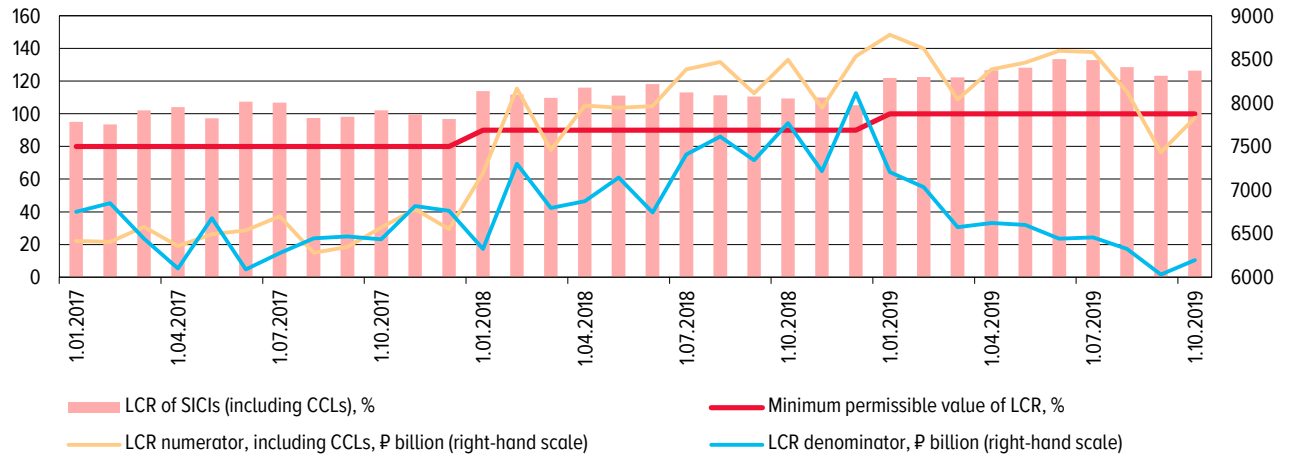
On average, among SIBs, the volume of HQLAs taken into account when calculating the LCR exceeds the value of the net expected outflow by 16% as of 1 October 2019. From 1 July 2019 to 1 October 2019, the average actual LCR of SIBs decreased from 133 to 126.3% (-6.6 p.p.). The actual LCR values for the same date ranged from 100% to 197% (Chart 54).

At the same time, some credit institutions continue to include additional elements stipulated by the Bank of Russia Regulations in the calculation of the numerator of the ratio. During the period from 1 April 2019 to 1 October 2019, the number of banks that included irrevocable credit lines in the calculation of the ratio as of the reporting date varied from 1 to 3. As of 1 October 2019, the proportion of irrevocable credit lines included in the calculation of the ratio to these banks' LCR denominator is 21.2%.

The situation with foreign currency liquidity in the banking sector improved and remained stable against the backdrop of an increase in bank placements on correspondent and deposit accounts with non-resident banks and a recovery in the volume of foreign currency household deposits. Moreover, according to the Bank of Russia survey, the largest banks have enough foreign currency liquidity to cover the expected repayment of foreign currency liabilities. In Q4 2019, the aggregate negative gap in banks with a deficit[8], in accordance with the banks' forecasts, will not exceed $1.2 billion (observed mainly in subsidiary banks). At the same time, the volume of liquid funds in foreign currency in the respondent banks (cash, funds in accounts and securities for sale) as of 1 September 2019 amounted to $43.2 billion.

It should be noted that the LCR calculation provides for the inclusion in HQLAs of assets denominated in foreign currencies only to the extent that does not exceed the net expected cash outflow in the relevant foreign currency. Therefore, when calculating LCR, the volume of HQLAs in foreign currencies may be underestimated. Taking into account the adjustment for HQLAs denominated in foreign currency, all SIBs have sufficient liquidity reserve to cover the expected outflow from operations in foreign currency and precious metals.

DYNAMICS OF THE ACTUAL AVERAGE VALUE OF LCR AND ITS COMPONENTS FOR SIBS *Chart 54*



Source: reporting forms 0409805 and 0409135.

[8] *The difference between high-quality liquid foreign currency assets and liabilities to be repaid for banks for which this value is negative.*

4. SYSTEMIC RISKS OF NON-CREDIT FINANCIAL ORGANISATIONS

4.1. RISKS OF INSURANCE ORGANISATIONS

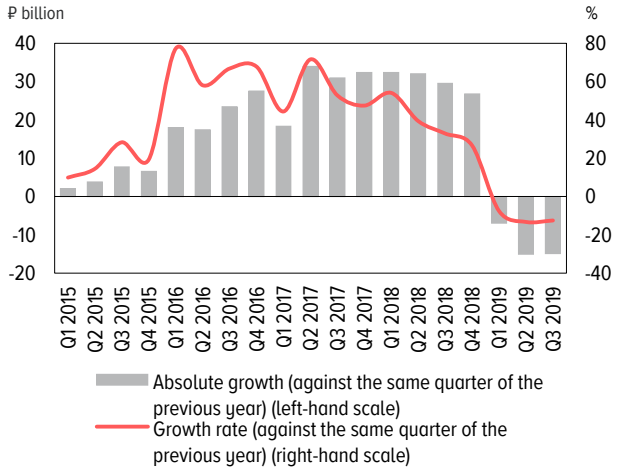
The Russian insurance market as a whole remained a positive trend, and no systemic risks in the activities of insurance organisations have been detected. During the period under review, stagnation trends were observed in the dynamics of premiums under investment life insurance. Most contracts were still sold through credit organisations. At the same time, the high-quality assets of investment portfolios in which the insurance reserves have been invested enables the fulfilment of insurance obligations. However, to maintain the same growth rate in the life insurance market, a new driver is required. Activities of "non-life" insurers remained stable financial indicators. Despite the slight reduction of insurance and investment results the combined loss ratio for 9 months of 2019 did not exceed 87%.

Life insurers

According to the results of H1 2019, life insurers' premiums[1] decreased by 11.4% (+40.7% for H1 2018) as a result of the impact of a number of factors related to the market of investment life insurance: product saturation of the segment, decreased misselling level due to the introduction of measures to improve the quality of insurance product sales and development of substitute products (trust management, investment and structural bonds) (Chart 55). The accrued premium under investment life insurance decreased by 34.2% in H1 2019 and amounted to ₽94 billion. At the same time, insurance reserves under life insurance contracts amounted to ₽1 trillion. The ratio of the actual solvency margin of life insurers to the regulatory one continues to increase (196.8% as of 30 September 2019 as opposed to 160.2% a year before).

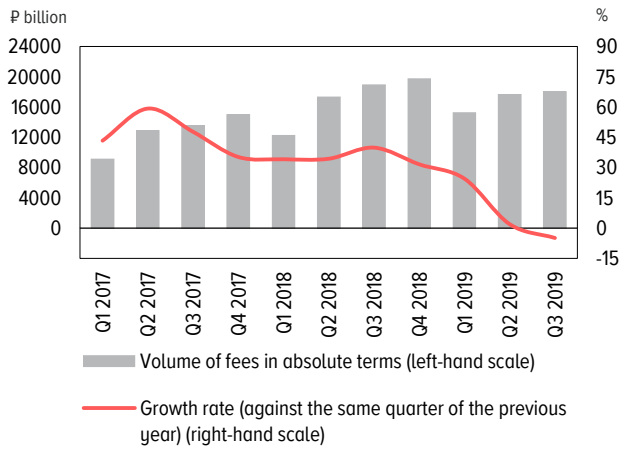
Most of the life insurance contracts were still sold through credit institutions (86.2% of life insurance premiums collected for 9 months of 2019). Following the reduction of premiums, the fee rates to credit organisations also fell (in Q3 2019, the increase was 4.8% compared to 39.9% for Q3 of 2018) (Chart 56). In H1 2019, the average amount of commission fee under investment life insur-

QUARTERLY DYNAMICS OF LIFE INSURANCE PREMIUMS IN 2015–2019 *Chart 55*



Source: based on insurers' statistical data (reporting form 0420162).

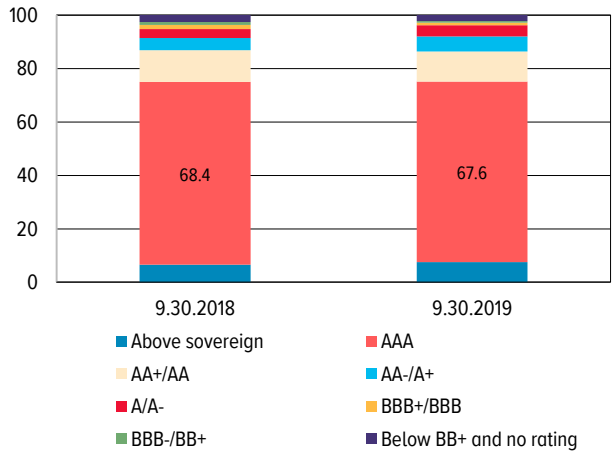
QUARTERLY DYNAMICS OF FEES TO CREDIT INSTITUTIONS INVOLVED IN LIFE INSURANCE AGREEMENTS, 2016–2019 *Chart 56*



Source: based on insurers' statistical data (reporting form 0420162).

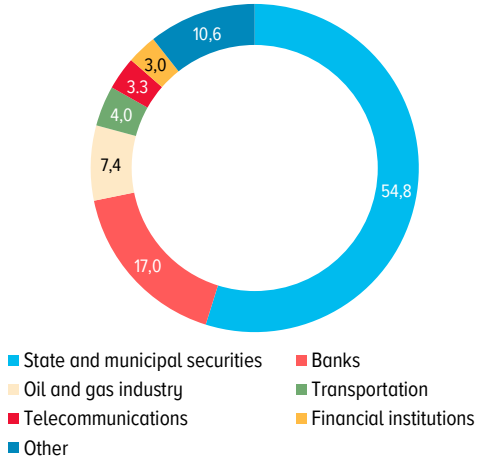
[1] *As compared to the similar period of last year.*

CREDIT QUALITY OF LIFE INSURERS' ASSETS AS OF 30 SEPTEMBER 2019*
(%)
Chart 57



** Ratings are provided based on the scales of the credit rating agencies AKRA and 'Expert RA'.*

SECTORAL STRUCTURE OF LIFE INSURERS' SECURITIES PORTFOLIO AS OF 30 SEPTEMBER 2019*
(%)
Chart 58



** Not including non-residents*

ance contracts amounted to 7.3% of the amount of the accrued premium. Most of the investment life insurance contracts which expired in the first half of the year showed a return not exceeding the household deposit yield. 51% of policies demonstrated a return below 1% (of which 31% of policies demonstrated zero return) 42% of policies demonstrated 1-5% of return, 7% of policies demonstrated the return of above 5% per annum.

At the same time, the assets of life insurers were characterised by fairly high credit quality (Chart 57): investments with a sovereign rating accounted for 67.6%, and the share of government and municipal securities increased to 36.6%. In relation to the sectoral structure of investments, in addition to investing in government and municipal securities, the banking sector (17%) and the oil and gas industry (7.4%) accounted for a significant share of investments (Chart 58).

Non-life insurers

The non-life insurance market showed a positive trend (+5.8% in 9 months of 2019) due to an increase in fees in the segments that accompany lending: accident insurance (+20.5%) and voluntary medical insurance (+15.8%).

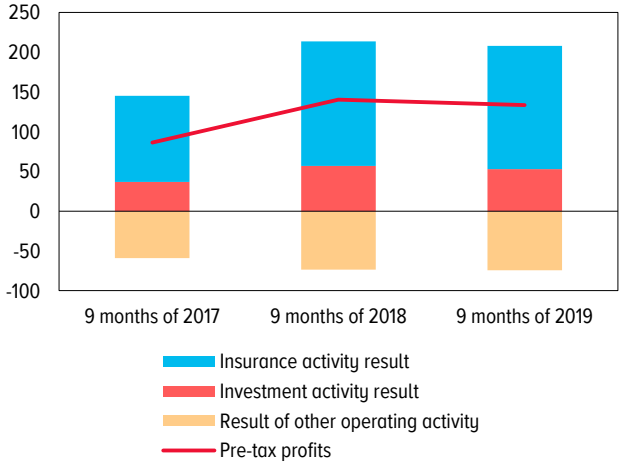
The indicator of deviation of actual non-life insurers' solvency margin from the mandatory value has increased materially – to 317.7% (279.2% on 20 September 2018). Due to insignificant reduction of results from insurance and investment activities of non-life insurers, the return on equity ratio equalled to 25.3% (26.2% for 9 months in 2019) (Chart 59).

The rolling combined loss ratio (CLR), which describes the effectiveness of companies' insurance activities, equalled to 86.9% (82.5% for 9 months of 2018 (Chart 60). Increase in loss ratio was observed in key business lines excluding insurance of legal entities' other property. CLR for OSAGO amounted to 93.6% due to a decrease in fees in the segment with a simultaneous increase in insurance payouts by 1.7%.

The number of concluded OSAGO insurance contracts decreased by 1.9% compared to the same period last year, while a significant share in the structure of sales was made up of electronic documents (59% of OSAGO insurance premiums; 40.2% of contracts concluded during the period).

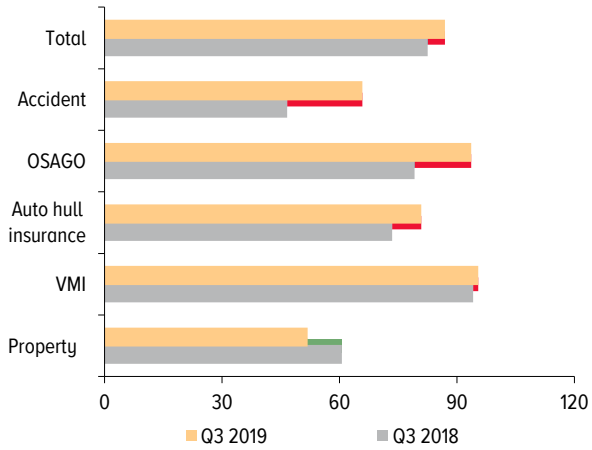
As a result of the introduction of in-kind reimbursement practices, 17.6% (₽18.2 billion) of the volume of insurance payouts under OSAGO for the period of 9 months of 2019 were made in kind. Since June 2019, in the event of repeated violation by the insurer of the obligations for restorative repair, the Bank of Russia has received the right to decide to restrict such insurer's ability to com-

FORMATION OF NON-LIFE INSURERS' PROFIT FOR THE PERIOD FROM 30 SEPTEMBER 2017 TO 30 SEPTEMBER 2019 (₽ BILLION) *Chart 59*



Source: based on insurance legal entities' profit and loss statements (reporting form 0420126).

COMBINED LOSS RATIO ON KEY ACCOUNTING GROUPS *Chart 60*



** Resulting CLR includes total and administrative costs.*
Source: based on insurers' supervisory reporting data (reporting form 0420158).

pensate in kind for the damage.[2] In addition, from 1 June 2019, the institution of pre-trial settlement of disputes under OSAGO was launched by the financial ombudsman[3], whose activities will help reduce the legal burden on insurers.

Since 4 August 2019, a new mechanism for voluntary insurance of housing from emergency events has been in place[4], providing for joint compensation for damage from emergencies both by the subject of the Russian Federation (at the expense of the funds provided for this purpose in the budget of the subject and provided from the federal budget) and by the insurer (in the amount of the minimum amount of obligations or the participation share in damages depending on the risk). In this regard, the need for a qualitative assessment of the risks of natural disasters will increase for insurance organisations. The establishment of fair pricing for new insurance services will also be important. This will require the development and maintenance of a unified database of recorded cases of natural disasters and the consequences of natural disasters as well as the development and maintenance of a map of areas prone to natural disasters. The implementation of these tasks will require inter-agency cooperation.

4.2. NPF RISKS

The overall situation in the sector remains stable. The credit quality of the NPF pension savings portfolio is improving; at the same time pension reserve portfolio has a significant share of closed investment funds' units (17%). In this regard, it should be noted that the Bank of Russia plans to establish new rules for the placement of pension reserves in 2020.

In the non-state pension fund market for compulsory pension insurance, the pension savings growth rate has not changed since last year and amounted to 8% by the end of Q3 2019. On the contrary, the growth rate of pension reserves demonstrated upward trends: +8% in three quarters of 2019 and +5% one year earlier. In absolute terms, the NPFs' pension savings and pension reserves amounted to ₽2,791 billion and ₽1,366 billion, respectively.

The transition company of 2018 resulted in net pension savings outflow (Chart 61). However, despite the need for cash cover that emerged due to exercise of rights of insured persons to transfer from fund to fund, the sale of NPF assets (mainly government and corporate bonds) did not have

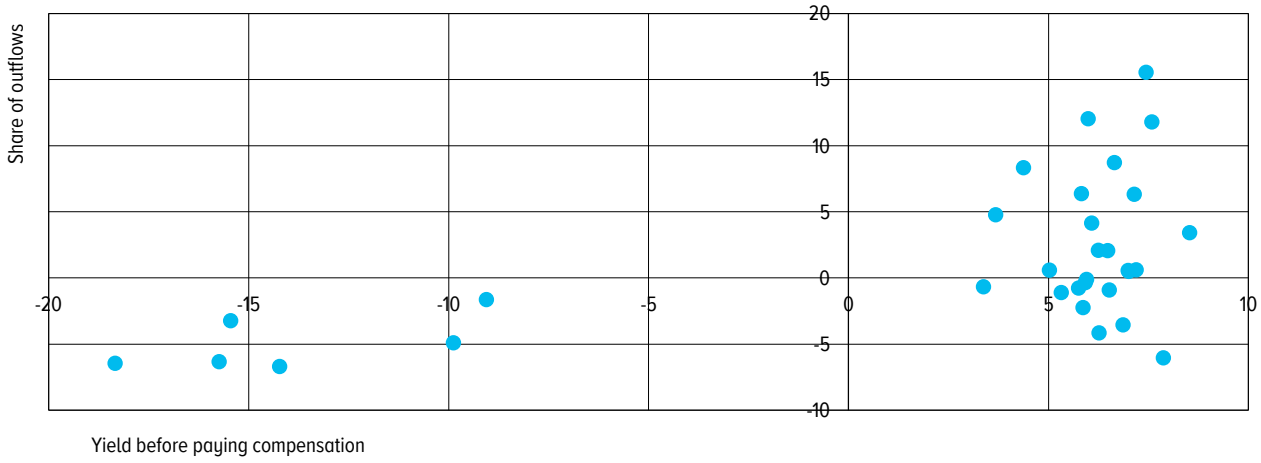
[2] *Bank of Russia Ordinance No. 5011-U, dated 14 December 2018, 'On the Procedure for the Bank of Russia to Decide to Limit the Ability of an Insurer to Pay Insurance Indemnity by Organising and/or Paying for Restorative Repair of a Damaged Vehicle'*

[3] *Federal Law No. 123-FZ, dated 4 June 2018, 'On the Commissioner for the Rights of Consumers of Financial Services'*

[4] *Federal Law No. 320-FZ, dated 3 August 2018, 'On Amending Certain Legislative Acts of the Russian Federation'*

INTERRELATION BETWEEN THE SHARE OF PENSION SAVINGS OUTFLOW IN THE TOTAL PENSION SAVINGS AND THE YIELD BEFORE PAYING COMPENSATION
(%)

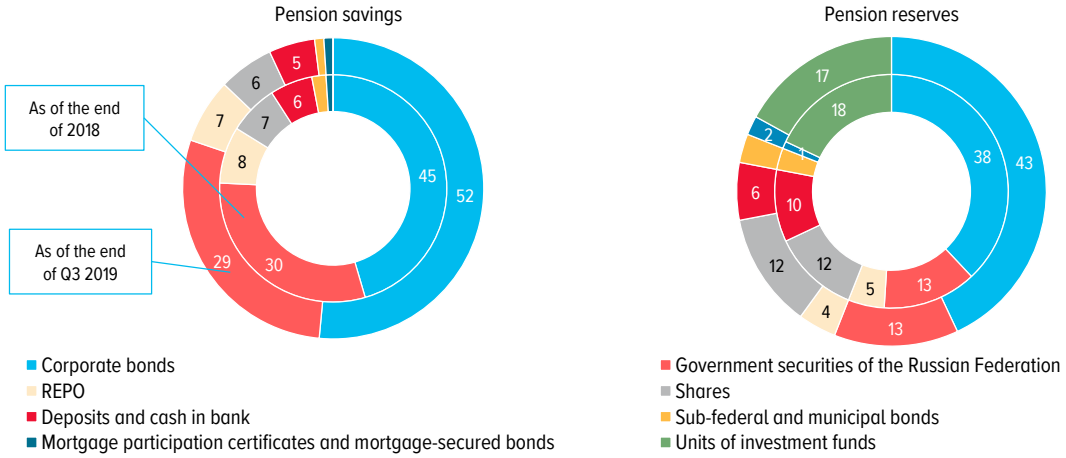
Chart 61



Source: Bank of Russia.

STRUCTURE OF PENSION FUNDS' SAVINGS AND RESERVES BY ASSET CLASS
(%)

Chart 62



Source: Bank of Russia.

material effect on the asset price. NPFs had adequate liquidity levels, therefore the observed pension savings' outflow did not cause fire sales of securities.

During the first half of 2019, the weighted average yield of NPFs nearly doubled as compared to the same period last year and amounted to 10.4% per annum for the pension savings portfolio and 8.3% per annum for the pension reserves portfolio[5]. The increase in yield was due to the dynamics of the stock market as well as the policy of the Bank of Russia of reducing the key rate.

The share of corporate bonds in the structure of pension savings and pension reserves portfolio at the end of Q3 2019 grew by 7 p.p. (to 52%) and 4 p.p. (to 43%), respectively (Chart 62). At the same time, the share of financial sector assets account for 28% of pension savings portfolio and 51% of pension reserve portfolio. Banks account for the largest share (17%) of financial sector assets in pension savings portfolio whereas financial companies account for the largest share (29%) of financial sector assets in pension reserve portfolio. Therefore, NPFs serve as a significant source of financing for certain financial institutions.

[5] *The yield on investment of pension savings/placement of pension reserves is calculated as the weighted average (by volume of pension savings/pension reserves) of yields under each fund holding pension savings/pension reserves and reporting to the Bank of Russia during the period from early 2019 YoY.*

The share of investment funds' units in the pension reserves portfolio is still quite high (17% at the end of Q3 2019). At the same time, 95% of all investment funds' units in pension reserves portfolios are in closed funds, whose assets are 37% joint-stock companies' shares, 17% bonds and 11% real estate (mainly non-residential). In addition, significant part of all shares and bonds of the abovementioned investment funds are assets of related parties of a number of NPFs. These assets include high liquid marketable assets as well as non-marketable.

However, in 2020, the Bank of Russia plans to establish new rules for investment of pension reserves, which will reduce the material risk of concentration within non-government pension provision. Taking into account the launched mechanisms of stress tests and the introduction of fiduciary responsibility of NPFs, the new rules will give funds the right to independently invest pension reserves without involving management companies. Also, additional requirements will be introduced for the quality of assets in which most of the pension reserves may be invested. Moreover, a number of new risk-oriented requirements will be introduced in respect of the pension reserves investment procedure.

Box 5. Assessing the impact of population ageing on the financial stability of NPFs

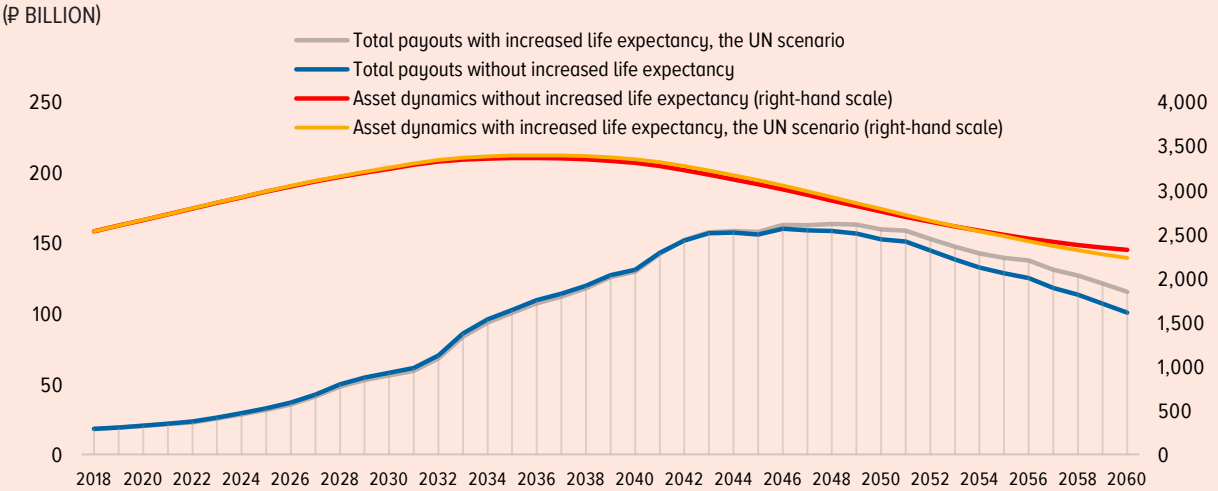
Population ageing is a global process: almost all countries are seeing an increased number and share of aged people. This process has an impact on the countries' economy, affecting the healthcare, pension system, and social protection. According to UN data[1], by 2050, one out of six people in the world will be older than 65 years (16%), while in 2018 only one in 11 was over 65 years old (9%)[2]. The demographic processes observed globally can also be witnessed in Russia.

With regard to the pension system, a change in the age structure of the population affects both the insurance and funded pensions. With respect to the funded pension, there is a risk that NPFs will lack assets to pay benefits.

To analyse the impact of changes in the age structure of the population of Russia on the long-term financial stability of NPFs, the dynamics of payments under social insurance schemes were simulated. Two scenarios were developed. In the first scenario, life expectancy growth rates were modelled on the basis of the relevant UN forecast3, which states that life expectancy in Russia will increase by an average of 4 years by 2060. The above increase in life expectancy corresponds to a decrease in mortality by an average

CHANGE IN THE VOLUME OF PENSION PAYOUTS AND ASSETS DUE TO INCREASED LIFE EXPECTANCY, THE UN SCENARIO
(₽ BILLION)

Chart 63



Source: Bank of Russia calculations, UN forecasts: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019.

[1] *United Nations. World Population Prospects 2019.*

[2] *It should be noted that the population group aged 65 and older has demonstrated faster growth rates than other age groups. The proportion of people aged 80 and older will grow even more abruptly: according to UN forecasts, the number of people in this age group will triple by 2050 (from 143 million to 426 million people).*

[3] *United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019.*

of 35% for men and women. The calculations suggested two prerequisites: an immediate reduction in the mortality rate and a uniformly distributed reduction in the period 2018–2060. It should be noted that as part of the stress tests of the European NPF market conducted in 2015 by the European Insurance and Occupational Pension Authority, one of the stress scenarios included a similar assumption of an immediate reduction in mortality by 20%.

According to the second scenario, the growth rate of life expectancy was determined in accordance with the Executive Order[4] by the President of the Russian Federation on the goals and objectives of the development of the Russian Federation, according to which the target growth rate of life expectancy will be 80 years by 2030.

The simulation results showed that under both scenarios the amount of NPF payments under mandatory pension insurance will not exceed the total value of the assets of the funds with regard to the conditions of the accepted assumptions (Chart 63). Thus, the sensitivity of liabilities of NPFs under mandatory pension insurance payouts to changes in the mortality rate is quite low (6% and 8% in the first and second scenarios, respectively), and NPFs remain financially stable in the event of a significant increase in life expectancy.

[4] *'On National Goals and Strategic Objectives of the Russian Federation up to 2024'*

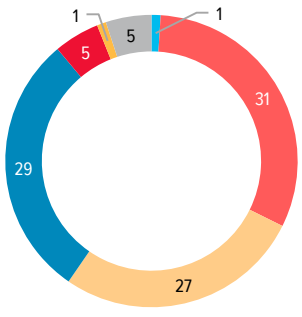
4.3. RISKS OF BROKERS[6]

Brokerage organisations have a significant impact on financial markets through client operations. One of the features of the industry is the significant volume of transactions by large brokerage organisations with related organisations, both offshore and resident. In addition, liquidity risk is one of the main risks of this sector; however, at the moment, the largest brokers have sufficient high-quality liquid assets to cover potential net cash outflows from their own transactions.

The potential problems in the brokerage sector can affect financial markets due to the significant volumes of customer transactions performed by brokers. Moreover, brokers can also influence the market even in the event of termination of margin lending to customers. The termination of these operations can lead to both the need for customers to sell assets that have been pledged under margin operations and to reduce the volume of transactions in the market.

In Q2 and Q3 2019, brokers' trading volumes **in the stock market** amounted to 40% of total operations (Chart 64, 65). Moreover, in relation to customer transactions, brokers occupy a dominant

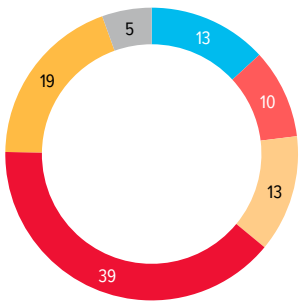
SHARES OF OWN TRANSACTIONS ON STOCK MARKET BROKEN DOWN BY TYPES OF ASSETS (%) *Chart 64*



Other participants – Shares
Other participants – Government and regional bonds
Brokers – Shares
Brokers – Government and regional bonds

Source: Moscow Exchange data.

SHARES OF CUSTOMER TRANSACTIONS IN THE STOCK MARKET BROKEN DOWN BY TYPES OF ASSETS (%) *Chart 65*



Other participants – Exchange-traded and corporate bonds
Other participants – Other assets
Brokers – Exchange-traded and corporate bonds

Source: Moscow Exchange data.

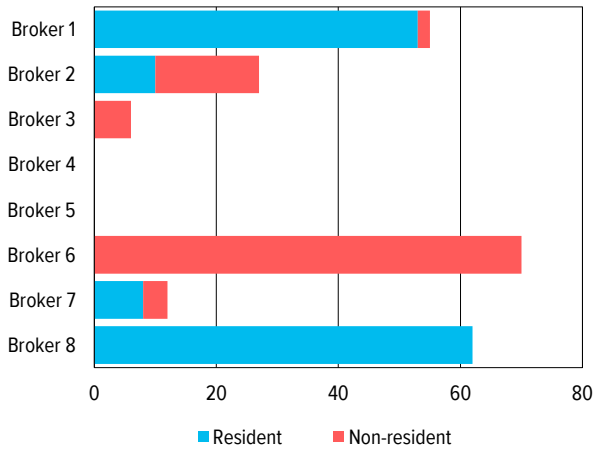
[6] *Hereinafter, only non-credit financial organisations that have a brokerage license are considered, with the exception of JSC DOM.RF.*

SHARES OF BROKERS' OPERATIONS IN THE SEGMENTS OF FINANCIAL MARKET*, % *Table 6*

Trade participant	Own/Client's	Stock Market	Repo Market	Currency Market	Derivatives Market
Brokers – NFO	Own	5	6	0	14
	Client's	34	24	8	30
Credit Organisations	Own	40	58	80	6
	Client's	19	8	7	33
Other Organisations	Own	1	3	4	4
	Client's	1	0	0	14
		100	100	100	100

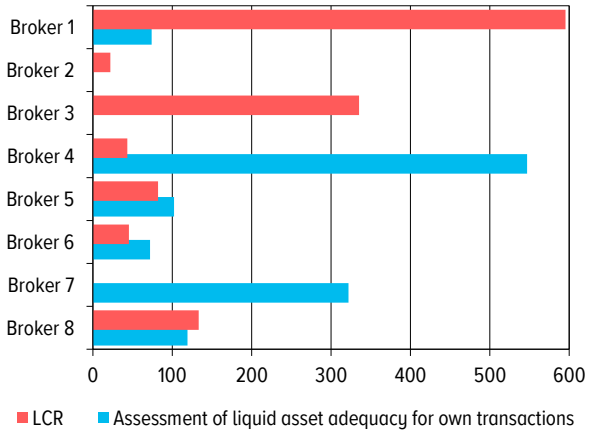
** Information is provided broken down by direct trade participants on Moscow Exchange*

SHARE OF OUTSTANDING RECEIVABLES FROM AND LOANS ISSUED TO AFFILIATES IN TOTAL ASSETS (%) *Chart 66*



Source: data from reporting forms 0420002, 0420412 and 0420414.

ASSESSMENT OF LIQUID ASSET ADEQUACY (%) *Chart 67*



Source: data from reporting forms 0420409, 0420410, 0420412, 0420414, 0420415 and 0420454.

position in the market. Their share is 64% of the total customer transactions in the stock market. Brokers' customers give the greatest preference to operations with shares (75% of the total transactions by all participants). The share of brokers' own transactions in the stock market is not that significant and amounts to 11% of the total volume of own transactions.

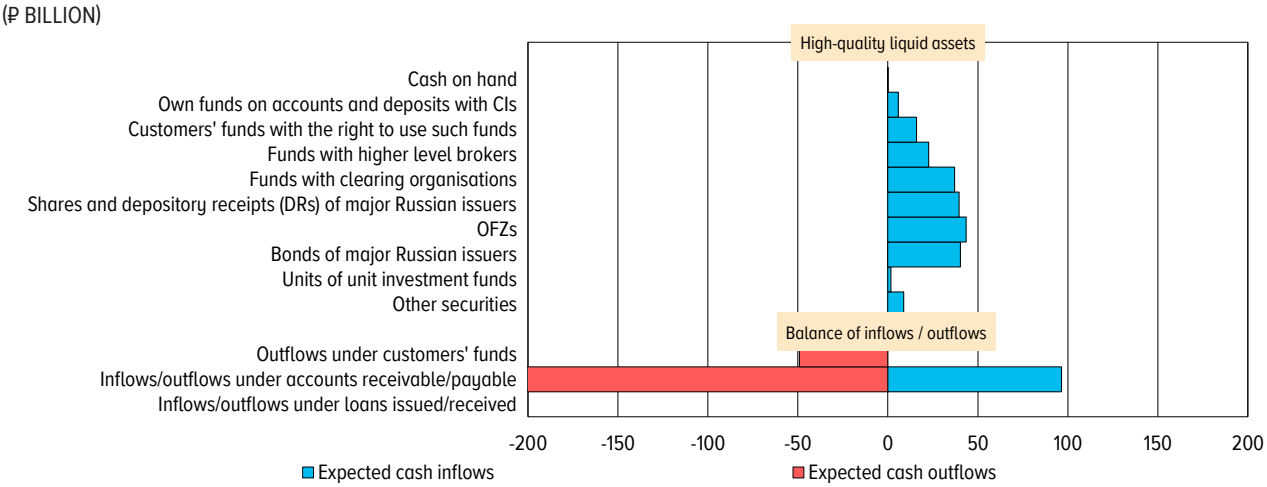
The share of brokers **in the repo market** is 30% (Table 6) of total open positions of all participants. Customer transactions account for most of them (24%). At the same time, brokers are usually focused on obtaining liquidity, taking into account that more than twice as many direct repos are performed than reverse repos. More than 90% of all repos are carried out through a central counterparty, which, in turn, reduces the default risk. **In the derivatives marke**t, brokers have the largest market share of 43% in the total open positions, 30% of which are carried out with customers' funds. **In the foreign exchange market**, the brokers' share is insignificant and amounts to 8% of the total operations.

One of the features of the sector is operations by large brokers with related organisations, which account for more than 75% of the total assets of the sector[7] (the 'analysed brokers') (Chart 66) 'technical companies' and performing operations that due to the business specifics are not reasonable to carry out by parent organisations on their own account. Noticeable volumes of transactions with affiliates may be associated, among other things, with the optimisation of the organisational structure of brokerage groups to conduct margin operations and provide brokerage services in foreign jurisdictions.

[7] *Assets means 'balance currency'.*

HIGH-QUALITY LIQUID ASSETS AND EXPECTED CASH INFLOWS/OUTFLOWS FOR THE ANALYSED SELECTION OF BROKERAGE ORGANISATIONS
(₽ BILLION)

Chart 68



Source: data from reporting forms 0420409, 0420410, 0420412, 0420414, 0420415 and 0420454.

For example, among eight reviewed brokers, high levels of accounts receivable attributable to affiliated organisations were observed in four organisations. At the same time, about half of the indicated volume was transactions with non-residents (mainly Cypriot companies).

At the same time, a significant part of financial groups' assets and operations, which include supervised organisations, can fall out of direct monitoring of the regulator. Accordingly, the Bank of Russia cannot fully monitor the risks of such groups. This issue is less characteristic for the banking market, including due to the presence of a more developed system of regulatory restrictions[8].

The Bank of Russia continues to develop risk-oriented supervision of brokers, in which it conducts stress tests of securities market professional participants' key risks and takes measures to introduce prudential standards. Thus, to limit one of the liquidity risks that is significant for the brokerage sector, the Bank of Russia has introduced a liquidity coverage ratio (LCR), which takes into account both the broker's own and customer transactions. In 2020, it is planned to make a number of changes to the LCR methodology; that is why, at the moment, it is not possible to draw conclusions on risks based on this ratio.

When assessing the analysed brokers' liquidity status based on their own transactions only, a rather positive picture is observed. Almost all brokers have not had potential problems with liquid assets, even with fairly strict assumptions—under such estimates, it was assumed that customers would withdraw 30% of funds from broker accounts[9]. At the same time, it should be noted that there have been significant volumes of potential cash outflows under receivables, with some of them being transactions with related companies. These brokers' high-quality liquid assets have been formed mostly from cash and securities of the largest Russian issuers and their subsidiaries (Chart 68), and their value significantly exceeds the amount of net cash outflows under own transactions.

4.4. RISKS OF NON-REGULATED FINANCIAL INTERMEDIARIES

The largest sector of non-regulated financial intermediaries (NRFI) in Russia and in other developing economies as well is the leasing market (58% of all NRFIs), which continues to grow extensively. A peculiarity of the Russian leasing market is also its close interrelation with the banking and public sectors. Another NRFI sector is the factoring market, which is developing extensive-

[8] *For example, credit institutions must comply with the maximum risk exposure per bank-related person (group of bank-related persons) (N25).*

[9] *When calculating the LCR, a similar assumption was also used.*

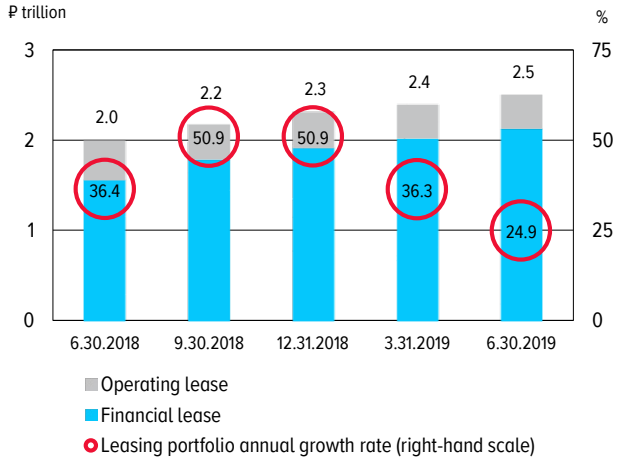
ly in Russia. As of 31 March 2019, the factoring portfolio was ₽521 billion[10]; banks and related structures account for about 94% of the market (that is why it can only nominally be deemed non-regulated, as regulation is provided at the banking group level).

Leasing companies

Based on a quarterly survey of the largest leasing companies conducted by the Bank of Russia (with 51 companies as participants and a leasing portfolio of ₽3.4 trillion), annual leasing market growth rates slowed down to 24.9% as of the end of H1 2019[11] (compared to 36.4% for the previous year, Chart 69). The decrease was mainly due to the decline of demand for railway equipment and products (the annual growth rate in the aggregate leasing portfolio was 25.0% compared to 30.0% for the previous year), which has been the main financing segment for leasing companies with state participation ('SLCs') and companies controlled by credit institutions ('Bank-Related LCs'). Amid the slowdown of the said sector growth, the share of SLCs decreased to 47.9% (-6.1 p.p. during the year). For the Other LC[12] segment, cars and freight transportation account for the greatest financing volumes (90.3%, -0.6 p.p. during the year).

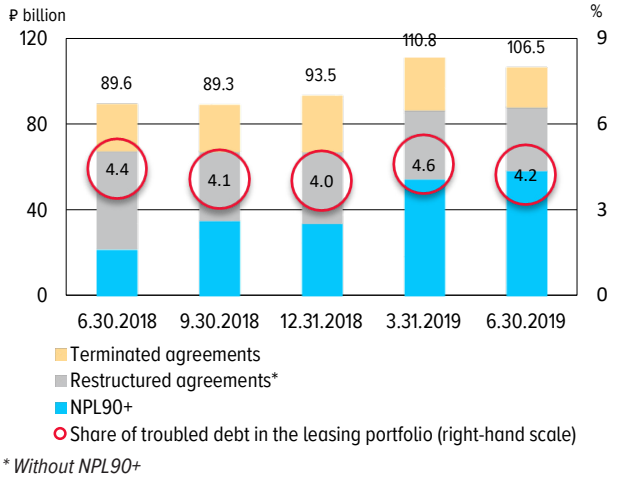
Amid the slowdown of the annual growth rates of the leasing portfolio, the share of non-performing debt[13] in the leasing portfolio continues to remain at a low level (4.2%, -0.2 p.p. during the year, Chart 70). SLCs account for the biggest share of the leasing sector's non-performing debt (8.0%), which is conditioned by large volume of restructuring. Loan loss provisions under leasing assets under IFRS are also at a low level of 2.8%. Due to the lack of prudential regulation and supervisory norms in the leasing market, it may be assumed that the actual volume of risks that leasing companies are exposed to may be underestimated. The high return on leasing companies' equity is notable (which, according to IFRS, is from 29.8 to 42.0%), which can partially be explained by access to 'inexpensive' state and bank financing available to many leasing companies (the funding cost[14] is as follows based on company type: Bank LC: 6.3%, SLC: 7.2%, Other LC: 9.5%).

LEASING PORTFOLIO DYNAMICS *Chart 69*



Source: Bank of Russia survey.

TROUBLED DEBT IN THE LEASING MARKET *Chart 70*



** Without NPL90+*
Source: Bank of Russia survey.

[10] *Based on the data of the Association of Factoring Companies (AFC).*

[11] *Hereinafter, the indicators have been calculated based on a comparable sample of leasing companies.*

[12] *Other LCs mean leasing companies owned by private or foreign companies.*

[13] *Non-performing debt means the aggregate volume of leasing agreements which have not been serviced for more than 90 days (including restructured ones) and which have been terminated.*

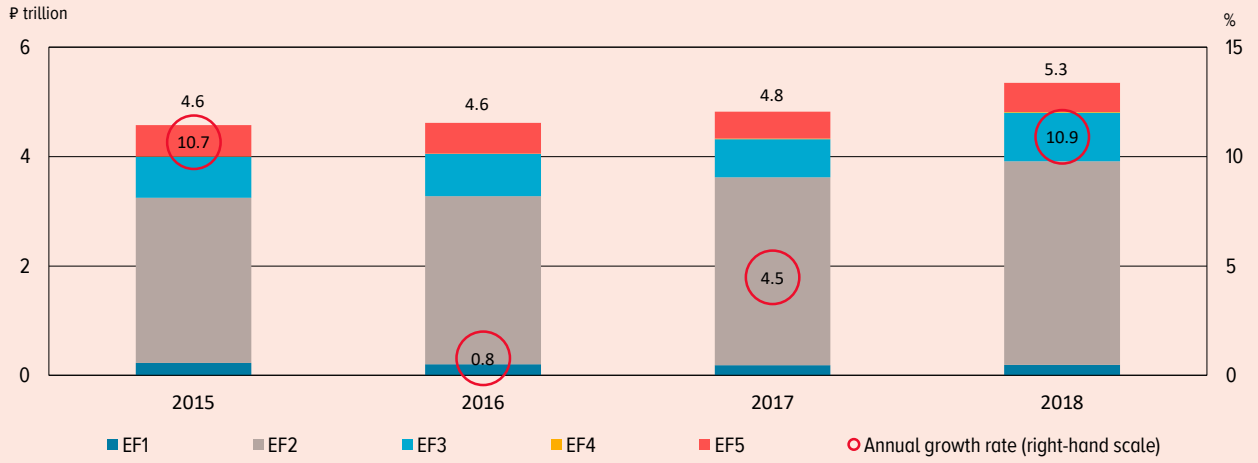
[14] *Funding cost means the ratio of interest expenses calculated for a rolling year to the average credit obligation volume for the year (credits, loans, issued debentures).*

Box 6. Structure of non-bank financial intermediaries in Russia

The Financial Stability Board (FSB) traditionally identifies, among non-bank financial intermediaries, companies classified into five economic functions[1]. The largest by volume is EF1, consisting of collective investment market subjects ($36.7 trillion, or 74.1%). For developing markets, such as Russia, India and Turkey, the largest by volume is EF2, comprising financial companies engaged in lending activities by means of short-term funding (including leasing and factoring organisations).

In Russia, the aggregate volume of non-bank financial intermediaries' assets classified into 5 economic functions was ₽5.3 trillion in late 2018 (+10.9% for the year, Chart 71). In the medium term, considerable growth potential may be seen in the EF5 segment containing companies engaged in financial intermediation based on securitisation (₽0.5 trillion, or 10% of NBFIs). However, its asset volume may increase significantly, as JSC DOM.RF plans to redistribute ₽4.3–6.8 trillion of mortgage debt (20–30% of forecast mortgage loan debt volume) from banks to other institutional investors in the form of mortgage securities by 2024. At this stage, the potential considerable risk concentration for JSC DOM.RF is mitigated by implementing mandatory financial stability ratios for the development institute. The relevant draft law passed in third reading by the State Duma and sent to Council of Federation[2].

ASSET DYNAMICS OF FIVE EFS IN RUSSIA *Chart 71*



Source: Bank of Russia.

[1] EF-1 is collective investment market subjects (money market funds, bonds, mixed and hedge funds, real estate funds); EF-2 is financial companies engaged in lending by means of short-term funding (leasing, factoring companies, microfinance institutions (MFO), credit consumer cooperatives (CCC), pawnshops); EF-3 is intermediaries in financial markets operating by means of short-term funding or funding at the expense of customer funds (brokers and dealers); EF-4 is issuing financial guarantees under loans (insurance companies issuing financial guarantees); EF-5 is financial intermediation based on securitisation (special purpose vehicles).

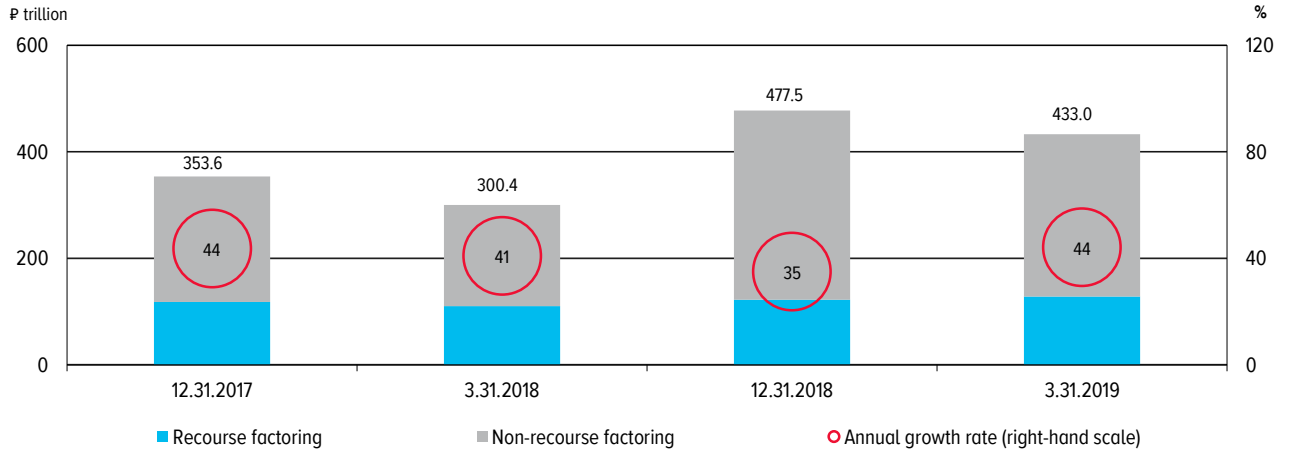
[2] Draft law No. 759565-7 'On Amendments to the Federal Law "On Promotion of Development and Increased Efficiency of Management in the Housing Sector and on Amendments to Certain Normative Acts of the Russian Federation" and Certain Normative Acts of the Russian Federation': URL: http://asozd2.duma.gov.ru/main.nsf/(Spravka)?OpenAgent&RN=759565-7.

Factoring companies

The aggregate portfolio of participants of the survey conducted by Bank of Russia was ₽433 billion, having increased by 44.1%[15] (Chart 72) during the year, with the two largest factors accounting for 62.0% of the market (+9.9 p.p. during the year). Non-recourse factoring accounts for the main transaction volume, which proves higher growth rates than recourse factoring (with annual growth rates of 59.9% and 16.8%, respectively). The oil and gas sector remains the largest among debtors and customers of factors; at the same time, the trade sector is beginning to demonstrate high growth rates. Factoring companies' concentration risks are moderate: the top 20 largest debtors account for 71.3% (-0.3 p.p. during the year), and the top 20 customers account for 63.8% (-8.7 p.p. during the year).

[15] Hereinafter, the indicators have been calculated based on a comparative selection of factoring companies.

FACTORING DEBT PORTFOLIO DYNAMICS *Chart 72*



Source: Bank of Russia survey.

Notwithstanding the extensive growth of the factoring portfolio and almost 150% increase of the revenue during the year, factors' net profit is declining (-10.2% during the year), which is highly likely to show decreased marginality in the factoring market (in particular, reduced receivables discount rates). It should be noted that the factoring portfolio quality is acceptable: as of 31 March 2019, the total share of non-serviced agreements[16] within the factoring portfolio was 3.5% compared to 7.2% among banks[17]. Aggregate risk level in the factoring market has been assessed as insignificant because factors are controlled by large credit institutions whose risks are taken into account when calculating banking groups' mandatory ratios[18].

[16] *Factoring debt with payments overdue by more than 90 days (beyond the grace period, if any).*

[17] *The share of quality categories IV and V in legal entities' loan portfolios (not including banks that underwent financial recovery).*

[18] *Bank of Russia Regulation No. 509-P, dated 3 December 2015, 'On Calculating the Capital, Required Ratios and Open Currency Position Limits of Banking Groups'.*

5. CLIMATE RISKS

Climate risks may have a significant impact on financial institutions' activities and financial stability in general. Climate change may pose increased credit, market and operational risks which negatively affect companies' financial results. A growing number of international organisations and national regulators conclude that it is necessary to develop measures to assess climate risks and stimulate green financing. In the Russian Federation, approaches to climate risks are at an early stage of development.

Foreign approaches to climate risk identification and assessment

Climate risks cover all occurrences related to both tendencies and events resulting from climate change. It is expected that due to the effect of climate change abnormal weather conditions will occur more often and on a greater scale.

Risks associated with climate change have become one of the main issues discussed on the agenda of the G20, the Financial Stability Board, and many national regulators.

There are three climate risk categories that may have an impact on financial stability:

- Physical risk means risk of financial and economic losses resulting from emergencies or natural disasters (floods, earthquakes, increased average temperature). In case of insured losses, the amount of physical risk is to be borne by insurance companies, which will increase their insurance payouts. If risks are not insured, damage will be incurred by households, banks and investors due to the reduction in their assets' value. The decreased value of pledged property will lead to an increase in the credit risk for banks, which may subsequently reduce lending volumes. Countries with a high physical risk occurrence probability may face a decrease in sovereign credit rating.
- Transition risk means risk of financial losses due to political, legal and technological changes related to the transition to a low-carbon economy. This risk category is associated with the financial consequences of measures aimed at limiting the negative impacts of climate change or adapting to climate changes (the risk of failed investments and high initial investments in green technologies and changes in consumer preferences). The transition to a low-carbon economy is expected to negatively influence the financial condition of a number of sectors, in particular, the petrochemical and mining sectors.
- Liability risk are risks of financial losses associated with payments (penalties and expenses related to court proceedings) due to the materialisation of physical and transition risks.

In December 2015, about 200 countries participated in the signing of the Paris Agreement aimed at keeping the global average temperature increase to below 2 °C above preindustrial levels and pursuing efforts to limit the temperature increase even further to 1.5 °C above preindustrial levels[1]. Based on the above, financial obligations to mobilise capital for green investments and support developing economies have been set in general terms, and the Green Climate Fund has been established.

To understand to what extent market participants take climate risks into account, the Financial Stability Board has formed the Task Force on Climate-related Financial Disclosures (TCFD). In 2017, the TCFD published a report with recommendations on disclosure of information on carbon-related asset concentrations and the financial system's exposures to climate-related risks[2]. In 2019, the

[1] *https://unfccc.int/sites/default/files/english_paris_agreement.pdf*.

[2] *https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-TCFD-Report-062817.pdf*.

TCFD reported that disclosed climate-related financial information was still insufficient for market participants to have a clear view on the climate risk level within organisations and emphasised the need to disclose information on the potential financial impact of climate-related issues on companies[3].

In 2017, as a result of admitting the importance of matters associated with climate risks, the Central Banks and Supervisors Network for Greening the Financial System (NGFS) was launched. In April 2019, the NGFS published climate risk management recommendations[4]: integrating climate-related risks into financial stability monitoring, integrating sustainability factors into own-portfolio management, building awareness and intellectual capacity, achieving internationally consistent climate and environment-related disclosure. In July 2019, the NGFS reported[5] the need to improve assessments of climate-related impact on the financial system.

International organizations have not yet developed a comprehensive approach to analysis of the impact of climate-related risks on financial stability: such an approach must analyse the transmission channels of physical and transition risks on the financial system and scenarios under which such risks negatively influence financial stability.

Climate risk assessment requirements and green finance development in foreign regulators' practice

Foreign regulators have relatively recently begun to assess the impact of climate risks on the financial system, and many countries continue to develop this sector.

Stress tests are one of the most popular climate risk assessment methods. Since 2018, the European Insurance and Occupational Pensions Authority (EIOPA)[6] and Swiss Financial Market Supervisory Authority (FINMA)[7] have implemented mandatory stress testing of natural disaster risks for the largest insurance groups. Since 2019, the Bank of England have included climate risks in the insurance market stress test, and in 2021 it plans to hold stress testing of the UK financial system for its exposure to climate risks.[8]

The practice of engaging third-party model developers and data aggregators to model catastrophic events is quite widespread. In particular, the European Insurance and Occupational Pensions Authority has been provided with catastrophe statistics by a private analytics company.

To counter the risk of natural disaster, some countries (France, Great Britain and Norway) have established **state reinsurance systems for significant risks**. In other countries, the government does not participate in the reinsurance of insurers' risks but rather directly assumes liability for natural disasters.

A number of regulators are developing **legislation aimed at disclosing information on environmental impact**. In France, credit institutions are to be inspected in terms of their climate-related impact[9], and asset and fund managers must report their activities leading to climate change. In September 2018, the Securities & Futures Commission of Hong Kong (SFC) published the Strategic Framework for Green Finance[10] aimed at enhancing the disclosure of environmental information related to climate risks.

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[3] *https://www.fsb.org/2019/06/tcfd-report-finds-encouraging-progress-on-climate-related-financial-disclosure-but-also-need-for-further-progress-to-consider-financial-risks/*.

[4] *https://www.banque-france.fr/sites/default/files/media/2019/04/17/ngfs_first_comprehensive_report_-_17042019_0.pdf*.

[5] *https://www.banque-france.fr/sites/default/files/media/2019/07/23/ngfs_report_technical_supplement_final.pdf*.

[6] *https://eiopa.europa.eu/Publications/Surveys/EIOPA%202018%20Insurance%20Stress%20Test%20Report.pdf*.

[7] *https://www.finma.ch/en/documentation/finma-publications/annual-reports--and-financial-statements/*.

[8] *https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2019/opening-remarks-july-2019*.

[9] *https://www.frenchsif.org/isr-esg/wp-content/uploads/Understanding_article173-French_SIF_Handbook.pdf*.

[10] *https://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=18PR110*.

Green finance development[11] is one of the strategic goals of many regulators. The Securities & Futures Commission of Hong Kong requires[12] that the management companies of SFC-authorised investment funds should disclose information on green finance products. In May 2019, the Hong Kong Monetary Authority (HKMA) adopted a number of measures[13] aimed at developing green banking and responsible investment. In 2012, the China Banking Regulatory Commission (CBRC) published the Green Credit Guidelines[14], and in 2013 it established the Green Credit Statistics System[15]. In 2014, the CBRC approved the Key Performance Indicators of Green Credit Implementation[16]. Brazil has established regulatory requirements for climate risk management: concessional loans and subsidies[17] are provided for green projects, and financial institutions must develop a climate risk management strategy[18].

Climate risks in Russia

Currently, in Russia approaches to assessment of climate-related risks are at an early stage of development. Work on analysing and reporting the climate-related impact on the financial market and financial stability may be performed by developing green finance instruments, stress testing financial institutions which are to the greatest extent exposed to climate risks, assessing the risk of the real sector of the Russian economy associated with the transition to low-carbon production methods and implementing new global environmental standards in order to subsequently include these scenarios in stress tests.

A federal law aimed at encouraging voluntary home insurance will be enacted in 2019[19]. The law introduces regional insurance programmes which could be initiated by the local authorities. Rules for calculation of the maximum damage to property subject to reparations under voluntary insurance are also stipulated. Important role in reinsurance of climate risks will be played by the Russian national reinsurance company (RNRC) which was established in 2016. Insurers' liabilities related to damage to property should be reinsured with RNRC.

It should be noted that further development of climate risks assessment practices are needed in Russia. Strengthening of requirements on climate-related disclosures is needed[20], as well as development of supervisory reporting and aggregated database on disasters. Stress tests of extreme weather conditions risks for insurance companies should be implemented. The necessity for these actions rises as the climate conditions worsen.

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[11] *Green finance involves efforts to internalise environmental externalities in order to boost environmentally friendly investments and to assist the effective management of environmental risks across the financial system.*

[12] *https://www.sfc.hk/edistributionWeb/gateway/EN/circular/openFile?refNo=19EC18.*

[13] *https://www.hkma.gov.hk/eng/key-information/press-releases/2019/20190507-4.shtml.*

[14] *http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4Av*

[15] *http://www.cbrc.gov.cn/chinese/files/2018/DD114DBE72084577BBB4392A38E65FFE.pdf.*

[16] *http://www.cbrc.gov.cn/EngdocView.do?docID=C5EAF470E0B34E56B2546476132CCC56.*

[17] *https://www.bcb.gov.br/pre/normativos/busca/downloadNormativo.asp?arquivo=/Lists/Normativos/Attachments/49552/Res_3896_v1_O.pdf.*

[18] *https://www.bcb.gov.br/pre/normativos/res/2014/pdf/res_4327_v1_O.pdf.*

[19] *Federal law dated 03.08.2018 N 320-FZ; Ordinance of the Government of the Russian Federation dated 12.04.2019 N 433*

[20] *In the information letter of the Ministry of Finance of Russia N P3-9/2012 "On the disclosures of risks of economic activities of organisations in annual accounting statement" stipulates the optional approach to risk grouping.*

APPENDIX 1. SUMMARY OF CURRENT MACROPRUDENTIAL POLICY MEASURES IN FOREIGN COUNTRIES

1. Requirements for a Countercyclical Capital Buffer (CCyB)

- On 23 May 2019, the Central Bank of the Czech Republic increased the countercyclical capital buffer by 25 b.p. to 2% effective 1 June 2020. As previously announced, on 1 January 2020, the buffer is to rise to the level of 1.75%.
- The decision was motivated by risks associated with the upward phase of the financial cycle in the Czech Republic as well as a slight increase in the vulnerability indicators of the Czech banking sector. The Central Bank of the Czech Republic has stated that the countercyclical capital buffer is not likely to rise any further, as the national economy is close to the top of the economic cycle.
- On 27 May 2019, the National Financial Stability Committee of Germany recommended that the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) should increase the countercyclical capital buffer from 0 to 0.25% of risk-weighted assets by 1 July 2020. The buffer requirement will apply to the German assets of all banks in the European economic community.

  When deciding on increase the countercyclical buffer, the Committee took into account the following facts:
  - annual growth in lending to non-financial corporations amounted to 5.1% in Q4 2018, which exceeds the average level of 1.97%;
  - banks using the IRB approach to calculating capital adequacy have reported a decrease in the average risk ratio under corporate loans from 57% to 37% over the past 9 years;
  - real estate price growth has been above average over the last 18 quarters, and the mortgage lending growth rate (3%) exceeded average values (2.3%) at the end of 2018.

  Increasing the buffer in advance will enable its use during crises. It is assumed that banks will create the buffer by means of excess reserves.

2. Requirements for global and national systemically important financial institutions and the Systemic Risk Buffer (SRB)

- On 3 April 2019, the Central Bank of Malaysia (Bank Negara Malaysia, BNM) published a consultative document on the identification of national systemically important banks and increased requirements for their capital of 0.5–2% of risk-weighted assets in the form of Common Equity Tier 1 (CET1) capital.
- In determining systemic importance, it is planned to use criteria such as the size of the bank and its interconnectedness and interchangeability, within which banks will be divided into three groups depending on the degree of systemic importance. The list of national systemically important banks (N-SIBs) is to be revised annually. At the initial stage, the maximum amount of additional requirements will be 1% of risk-weighted assets; requirements of 2.0% capital will not be applied to any N-SIBs.
- On 10 April 2019, the Office of the Superintendent of Financial Institutions (OFSI) of Canada released the final version of its Guideline on Large Exposure Limits for Domestic Systemically Important Banks (D-SIBs). The Guideline reflects OSFI's expectations regarding the methodologies that D-SIBs use to identify, assess, manage and monitor risks. The new version of the Guideline:
  - establishes tougher limits on loans for both global and domestic systemically important banks;

– offers flexible methods of credit risk reduction;
– narrows the list of eligible capital base instruments from Total capital to Tier 1 capital for calculating the capital adequacy ratio.

The Guideline is to take effect starting from Q1 2020.

On 1 May 2019, the Bank of England Prudential Regulation Authority (PRA) announced the introduction of a systemic risk buffer as from 1 August 2019 for a number of large banks and construction companies.

Banks separated from the investment activities of a subgroup (ring-fenced bodies)	Systemic risk buffer, in % of the risk-weighted assets
Lloyds Banking Group	2
Royal Bank of Scotland	1.5
Barclays	1
HSBC	1
Santander UK	1
Building Society	
Nationwide Building Society	1

- On 25 June 2019, the Financial Stability Board (FSB) published a progress report on the implementation by global systemically important banks (G-SIBs) of requirements for total loss absorbing capacity (TLAC). The report emphasised significant progress both in the establishment by countries of the requirements for external TLAC instruments and in the release of such instruments by G-SIBs.

All G-SIBs that were to implement TLAC by January 2019 have fulfilled the requirements of the standard on the formation of TLAC at the level of at least 16% of risk-weighted assets and 6% of the denominator of the financial leverage indicator. According to the Financial Stability Board, G-SIBs have issued TLAC liabilities of $350–400 billion annually over the last three years.

The Board does not deem it reasonable to modify the TLAC standard, although further efforts are needed for its full effective implementation.

- On 25 June 2019, the Norwegian Ministry of Finance published amendments to the capital requirements of banks, including foreign ones, for consultation. The document provides for:
  – increasing the systemic risk buffer from 3% to 4.5%, effective 31 December 2019, for banks using the internal rating based (IRB) approach; for other banks, the buffer is to rise effective 31 December 2021;
  – the minimum risk ratios under loans for purchasing residential and commercial real estate in the amount of 20% and 35%, respectively (for two years with the possibility of extension) for banks using the IRB approach to determining capital adequacy.

- On 25 June 2019, the US Senate Committee on Banking, Housing and Urban Affairs decided that government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac are systemically important financial institutions (SIFIs) in accordance with the requirements of the Dodd–Frank Act, given their size and importance for the housing market and construction financing. The Committee has stated that in the near future there will be no institutional alternative to Fannie Mae and Freddie Mac, which issue guarantees for half of US mortgages; their total assets at the end of March 2019 amounted to $5.48 trillion (27% of GDP in 2018), while their capital as compared to the issued guarantees is rather small.

After Fannie Mae and Freddie Mac, although they are not banks, were granted the status of systemically important financial institutions, they will have to fulfil additional requirements of the US Federal Reserve: increased requirements for capital adequacy, liquidity, risk management, participation in stress tests and establishing the maximum acceptable debt to equity ratio.

- On 18 September 2019, the National Bank of Hungary (Magyar Nemzeti Bank, MNB) changed the parameters for applying the systemic risk buffer (SRB). Previously, the systemic risk buffer in the amount of 0–2% of risk-weighted assets was determined only on the basis of the value of their overdue loans for the purchase of commercial real estate (CRE). Effective 1 January 2020, performing foreign currency debts under loans for the purchase of commercial real estate will also be taken into account.

If the amount of loans issued by the bank exceeds 20 billion Hungarian forints (€60 million), then, based on their weighted share in the capital (weighting ratio is 100% for non-performing loans and 5% for performing loans in foreign currency), the following buffer shall be established (see the table below).

Share of capital	SRB
0–29.99%	0.0%
30.00–59.99%	+1.0%
60.00–89.99%	+1.5%
More than 90%	+2.0%

3. Setting the maximum Loan-to-Value ratio (LTV) limit

- On 22 May 2019, the Reserve Bank of New Zealand (RBNZ) published the results of an analysis of its policy on establishing the Loan-To-Value rate (LVR) for housing. The review analysed the impact of the LVR on financial stability, efficiency and other indicators, such as market competition and housing affordability. The Reserve Bank of New Zealand decided not to replace the LVR with other macroprudential policy instruments. It was found that LVR restrictions have a greater direct impact on reducing the risks of the housing sector and households as well as on mitigating the scale of an economic downturn than macroprudential instruments aimed at creating additional bank capital buffers to absorb shocks.

- On 9 August 2019, the European Systemic Risk Board (ESRB) published a message from the National Bank of Hungary on change in the regulatory requirements for mortgage loans and calculating LTV.

Starting 1 July 2019, the Hungarian Government introduced a three-year programme to support families with children, which involves issuing an interest-free unsecured loan (the so-called child support loan) in the amount of up to 10 million Hungarian forints (€31,000) to young families who comply with a number of requirements[1]. Due to the widespread practice of using these unsecured loans as a down payment on a mortgage, the National Bank of Hungary revised the rules for calculating LTV when issuing mortgage loans: only 75% of an interest-free non-target loan can be considered as a down payment on a mortgage loan, and 25% of the interest-free non-target loan should be included in debt amount for LTV calculation purposes.

- On 28 August 2019, the Swiss Financial Market Supervisory Authority (Autorité fédérale de surveillance des marchés financiers, FINMA), in accordance with the proposal of the Swiss Bankers Association (SBA), decided to tighten the requirements for issuing so-called mortgage investment loans:
  - to increase the minimum down payment on mortgage investment loans from 10% to 25%, which is equivalent to a decrease in LTV from 90% to 75%;

1 Women aged from 18 to 40, first marriage, loan granted for a period of 20 years with a maximum payment of 50,000 Hungarian forints per month. When a first child is born after 1 July 2019, the family receives a three-year deferral of principal debt payment; when a second child is born, the family also receives a three-year deferral of principal debt payment and 30% of the principal debt is written off; when a third child is born, the remaining debt is fully written-off.
https://www.kormany.hu/en/ministry-of-human-resources/news/new-child-support-and-interest-subsidised-loans-for-used-homes-available-from-july

– to reduce the period of amortisation (repayment of the principal debt): 2/3 of the loan amount must be repaid within 10 years (at present, the specified period is 15 years for all types of mortgage loans).

This measure was introduced amid the signs of overheating in the investment residential real estate market. The changes are to take effect on 1 January 2020.

- On 23 September 2019, the European Systemic Risk Board (ESRB) released warnings and recommendations for 11 European countries on medium-term systemic risks in the field of residential real estate. Risks are associated with an increase in the population's debt burden and the volume of mortgage lending as well as with decreased lending standards; certain countries received warnings due to excessive growth in real estate prices.

The countries that received warnings in connection with the risks include: the Czech Republic, Germany, France, Iceland and Norway. The countries that received recommendations in connection with increased risks (based on the results of the 2016 assessment) and the lack of appropriate regulatory measures to reduce them are Belgium, Denmark, Luxembourg, the Netherlands, Finland and Sweden. The countries are advised to implement or tighten macroprudential measures to reduce the debt burden of the population (LTV/DTI restrictions).

4. Setting limits on borrower's debt service-to-income ratio

- On 13 September 2019, the Norwegian Financial Supervision Authority (Finanstilsynet), in response to the letter from the Norwegian Ministry of Finance on the need to further tighten measures on the residential real estate market, announced the following measures. The Authority proposes:
  – reducing the maximum allowable debt to annual income ratio (Debt to Income, DTI) from 5 times to 4.5 times;
  – not setting geographically differentiated LTV ratios under loans for the purchase of real estate in the secondary market[2];
  – reducing the share of mortgage loans (flexibility ratio), whose conditions differ from those recommended by the Authority, from 10% to 5% of new loans issued during the quarter.

The said requirements are to be introduced on 1 January 2020, and they are to be applicable for an unlimited period of time.

5. Other

- On 16 July 2019, the Bank of England Prudential Regulation Authority (PRA) published an advisory document on limiting the investments of systemically important financial institutions in French non-financial companies with a high debt burden (Large exposures: Reciprocation of French measure) in accordance with the Recommendations of the European Systemic Risk Board (ESRB) released in February 2019. They followed France's introduction of restrictions on bank investments (in the amount of 5% of capital) in French non-financial companies with high debt burden from July 2018 to June 2020.

The PRA also proposes limiting investments to 5% of the capital of a financial institution. The investment restrictions will apply to global systemically important institutions (G-SIIs) and other systemically important institutions (O-SIIs) and their affiliates. The restrictions are expected to be implemented on 1 January 2020.

[2] *Since mid-2018, the maximum allowable LTV ratio under mortgage loans for residential real estate in the secondary market in Oslo was 60%, in other regions, 85%.*

APPENDIX 2.
GDP-AT-RISK METHODOLOGY

According to Adrian et al (2019)[1], the GaR quantile regression methodology involves the following.

Let us assume that the average real GDP growth rate is y_{t+h} during the period from t to h with conditional variables vector x_t.

The quantile regression y_{t+h} is built based on x_t:

$$\hat{Q}_{y_{t+h|x_t}}(\tau|x_t) = x_t\hat{\beta}_\tau \ ,$$

where the ratio β_τ is estimated in the quantile regression formula based on the minimisation of weighted absolute error in the quantile:

$$\hat{\beta}_\tau = \underset{\beta_\tau}{argmin} \sum_{t=1}^{T-h}(\tau \cdot \mathbf{1}_{y_{t+h} \geq x_t\beta}|y_{t+h} - x_t\beta_\tau| + (1-\tau) \cdot \mathbf{1}_{y_{t+h} < x_t\beta}|y_{t+h} - x_t\beta_\tau|),$$

where β_τ belongs to the set of real numbers, and $\mathbf{1}_{(\cdot)}$ is the characteristic function.

The quantile regression differs from the regression estimated by means of the least square method in that it provides for the minimisation of the sum of absolute errors (rather than the sum of squared errors) and differentiated weights with which absolute deviations are weighted.

The GaR quantile regression model is not structural as it does not describe the impact of changes in financial conditions on economic growth rates. The GaR method shows the possible GDP growth rate decrease below the fixed level during a certain period (tail risks) (Bank of Japan (2018)[2]).

[1] *Adrian, T, Boyarchenko, N, Giannone, D (2019). Vulnerable Growth. American Economic Review, 109(4), pp. 1263–1289. DOI: http://doi.org/10.1257/aer.20161923*

[2] *Bank of Japan. (2018). Financial System Report. October 2018. www.boj.or.jp/en/research/brp/fsr/data/fsr181022a.pdf.*

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