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SUMMARY

External Risks

Volatility in international financial markets increased noticeably in Q4 2015 and Q1 2016, which was accompanied by a considerable fall in the prices of oil and metals – the key items of Russian exports. Despite a sharp deterioration of external market conditions, the Russian financial system remained resilient, which was reflected in the relative stability of the foreign exchange and stock markets, the positive dynamics of deposits and loans in Russian banks. Already in March-April, the situation in global markets stabilised amid improved economic situation in China and decreased uncertainty about the US Federal Reserve's monetary policy in 2016. In these conditions, the price of Urals crude rose to $47 per barrel (as of May 25, 2016), returning to the average level of October 2015 ($47.3 per barrel). Nevertheless, further volatility hikes should not be ruled out in the global markets in 2016 as the key problems remain unsolved: the world economic growth is still weak while the accommodative monetary policy of the leading central banks creates spillovers – decline in profits of financial institutions, on the one hand, and the further growth of the debt burden of the non-financial sector (first of all, in the emerging market economies), on the other hand.

Risk of low commodity prices for a prolonged period of time represents a key global vulnerability for oil exporting countries, including Russia. In advanced economies this risk largely materialises in the deterioration of the financial position of oil and gas companies while in oil-exporting emerging market economies the main "contagion channel" comes from reduction of budget revenues and the decrease of foreign currency inflows in these countries.

In Russia, the current account surplus totalled $11.7 billion in Q1 2016 ($30 billion in Q1 2015). However, the situation with foreign currency liquidity remained favourable amid an even stronger decrease of payments on external debt. A survey of major banks and non-financial organisations conducted by the Bank of Russia[1] shows that foreign currency liquidity in Q2-Q3 2016 will also be sufficient to cover foreign debt payments. Also, in the reporting period we considered a slight improvement in external funding conditions for major non-financial organisations. During Q4 2015 and Q1 2016, the volume of their new Eurobonds and syndicated loans totaled around $10 billion ($4.1 billion in the same period of the previous year). At the same time, Russia, like other oil exporting countries, was confronted with a considerable decrease in budget revenues (the federal budget's revenues from oil and gas exports contracted from 9.5% of GDP in 2014 to 7.3% of GDP in 2015). Fiscal policy sustainability is a key factor for financial stability in the medium-term perspective.

Non-financial Organisations' Risks

In the reporting period, financial position of export-oriented companies remained stable, despite a noticeable contraction in their foreign currency revenues. The ruble's devaluation had a compensatory effect through the prevalence of ruble-denominated expenditures that allowed companies to considerably increase their operating efficiency and profitability in 2015 but in the future this effect may decrease as the ruble exchange rate becomes less dependent on oil prices. Financial position of car-manufacturers, companies in industrial construction and trade continued to deteriorate while the most difficult situation persisted in the sector of small and medium enterprises.

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[1] *An estimate of actual foreign debt payments by banks and non-financial organisations in Q2-Q3, 2016 (http://cbr.ru / statistics / ?PrtId=svs).*

Banking Sector's Risks

Credit risk remains the major risk for credit institutions in terms of the value of potential losses. In the reporting period, the credit quality of both the corporate and retail portfolios continued to deteriorate: the share of bad loans of the total debt of non-financial companies rose to 10.1% as of April 1, 2016 while the share of bad household loans reached 13.4%. Credit activity continues to decline in those economic sectors that are characterised by high credit risks and are excluded from government support measures (the construction of non-residential property, wholesale and retail trade). Banks are substituting loans provided to these sectors with ruble-denominated loans to exporters, thus reducing the supply of foreign currency loans.

In general, the problem of foreign currency lending provided by banks to companies without sufficient foreign exchange revenues manifested itself during the provision of loans to specific sectors (commercial real estate, trade). Foreign exchange risk of exporter companies is naturally hedged by foreign exchange revenues, however few companies with a high debt burden are exposed to that type of risk. At the same time, a considerable share of foreign currency assets and liabilities of banks (while equity capital is mainly ruble-denominated) leads to highly volatile capital adequacy ratios of credit institutions. In order to ease this problem, the Bank of Russia made a temporary exemption (before April 1, 2016) and allowed banks to use fixed foreign exchange rates to calculate mandatory requirements. In order to curb further dollarisation, the Bank of Russia introduced increased capital requirements for banks' foreign currency exposures with non-financial organisations (since May 1, 2016) and raised the levels of obligatory reserves for banks' foreign currency liabilities to organisations (since April 1, 2016).

The debt outstanding continued to decrease in the segment of unsecured consumer lending. However, in early 2016 there was a recovery in new loan growth mainly caused by the low base effect and the decision by some banks to ease lending standards and reduce lending interest rates. As a positive factor, the return on the equity of banks specialising in retail lending increased (to 0.2% as of April 1, 2016, against the minimal value of -10.8% as of July 1, 2015). Early credit risk indicators suggest that the situation in the segment of unsecured consumer lending is expected to normalize in late 2016, if the baseline macroeconomic scenario materialises.

Interest rate costs that increased sharply in 2015 became a significant factor behind a fall of banks' profitability (this factor was comparable with credit risk measured by the value of losses for many banks). However, as deposits with increased interest rates are repaid, net interest incomes recover. Nevertheless, the need to improve interest rate risk monitoring persists and, therefore, in addition to the available supervisory reports, the Bank of Russia held a survey of major banks to assess the effects related to the elasticity of changes in interest rates and term structure of claims and liabilities after an interest rate shock. The monitoring of these effects reveals that expected losses on a yearlong horizon in case of rate increase sometimes considerably exceed losses from the existing interest rate gap (the excess of liabilities sensitive to a change in interest rates over assets). The increase of the share of assets with floating interest rates and development of interest rate derivatives market can help reduce banks' potential losses from interest rate risk.

Non-bank Financial Organisations' Risks

The problems of several leasing companies resulting from the bankruptcy of Transaero and the deterioration of the situation in some other companies show that systemic risk may potentially come from the leasing market, which is currently unregulated and is considered as a part of the shadow banking system. A study of leasing companies carried out by the Bank of Russia in Q1 2016 has showed that the leasing market lacks transparency: only half of the participants covered by the study prepare IFRS statements, that enables detailed analysing of lease portfolios. Opaqueness of leasing market and possible

“hidden risks” result in a higher borrowing costs for leasing companies regarding to other borrowers with comparable credit ratings.

The increase of tariffs for OSAGO (compulsory motorists’ civil liability insurance) and the high level of interest rates in 2015 supported the financial resilience of insurance organisations. The share of companies experiencing problems with capital adequacy and profitability continued its downward trend while total net profit equalled 95.1 billion rubles. At the same time, the results of insurance activity in 2015 showed heterogeneous dynamics: while the market average combined ratio decreased, its modal value rose by 5 p.p. up to 106%. In 2016, the financial results may deteriorate: driven by stagnation of insurance premiums under the voluntary types of insurance and a fall in deposit yields, MTPL payments are expected to grow intensively (according to data provided by the Russian Union of Auto Insurers, these payments grew by 28% during January-March 2016).

In 2015, the period for filing requests to join the system of guaranteeing the rights of insured persons ended for nongovernment pension funds (NPFs) and also the term expired for individuals to opt for NPFs to transfer 6% of insurance deductions for the funded part of their pensions contributions. Insured persons’ transfer campaigns between NPFs and from NPFs to the PFR (the Pension Fund of Russia) are a key source of liquidity risk for the funds before the commencement of the period of mass pension payments. The liquidity analysis of the portfolio of NPFs’ pension savings has showed that considering an inflow of financial resources from the PFR the funds have a sufficient stock of liquid assets. Also, credit risk still remains a considerable investment risk for NPFs. At the same time, the level of this risk decreased in the second half of 2015 and, as a result, the credit risk/capital ratio and the funding ratio improved for the aggregate portfolio of pension accumulations.

1. GLOBAL ECONOMIC AND FINANCIAL MARKET RISKS

Increased volatility was observed in global financial and commodity markets in the reporting period amid the slowing world economic growth. The International Monetary Fund lowered its forecast for the growth rates of the world economy in 2016–2017[1]. In March-April 2016, the situation in the markets stabilised but new periods of volatility are still possible this year.

Uncertainty about the economic situation in developed countries (first of all, in the United States) and a stronger-than-expected slowdown in China's economic growth were the key factors for increased market volatility in the reporting period. US economic growth slowed down in the second half of 2015 largely due to the US dollar appreciation and lower exports and equalled 2.4%, matching the 2014 figures. In China, the GDP growth slowed down to 6.9% in 2015 from 7.3% in 2014 amid the structural change in the economy – the transition from the investment and export driven growth to consumer demand driven growth. The annualized growth rates of China's exports were negative from March 2015 and reached a record low of – 25.4% in February 2016.

Against this backdrop, in January-February 2016, many global financial market indicators demonstrated the worst dynamics for a long time interval. The price of Brent crude fell to the lowest level since the end of 2003 and its monthly historical volatility rose to the record high since early 2009. At the beginning of the year global stock indexes demonstrated the worst performance in seven years. The composite index of the basket of emerging market currencies to the US dollar decreased to the lowest level since the end of 2009. The average CDS spreads for emerging market economies reached their highest level since May 2012. According to EPFR, net capital outflow from the funds investing in the equities and bonds of emerging market economies totalled $29.5 billion in Q4 2015 – Q1 2016.

In March-April 2016, the situation in global financial and commodity markets stabilised (Chart 1). First of all, the markets were positively influenced by signals from the US Federal Reserve that the regulator would pursue a more cautious approach to further normalization of interest rates. Secondly, the concern about the risks of the Chinese economy decreased as positive results appeared from fiscal and monetary policy measures taken by the Chinese authorities in the second half of 2015 for the purpose of stimulating economic activity. In March 2016, the annual growth rates of China's exports reached positive values (+11.5%) and the manufacturing PMI index came close to 50 points (this indicator stood at 49.7 points in March 2016 as compared to 48 points in February 2016).

Nevertheless, fundamentally the situation in global markets remains unstable and market volatility may persist. Global investors are re-distributing funds in favour of 'safe haven assets', which can be reflected in a considerable growth of gold prices (+15.4% from early 2016 to May 25, 2016) and the lower yields of US Treasuries.

The following factors of global markets' vulnerability are currently substantial:

1. The further slowdown of economic growth in China and possible threats to financial stability of the country.

Prolonged and a more considerable slowdown in China amid the continued structural change in the economy may become a significant risk factor for the world economy. In March 2016 international credit rating agency S&P changed its outlook on China's sovereign rating AA- from stable to negative. The high debt burden in the Chinese economy, including due to the considerable scope of the country's shadow banking sector, is a key risk for China. The Total Social Finance indicator reflecting

[1] *In the IMF's estimates, the growth rates of the world GDP slowed down to 3.1% in 2015 (3.4% in 2014). The growth rates of advanced economies increased inconsiderably, from 1.8% in 2014 to 1.9% in 2015 while the growth of emerging market economies slowed down from 4.6% to 4.0%, correspondingly. In January and April 2016, the IMF lowered its outlook for the growth rates of the world economy in the coming years. The IMF currently estimates the growth rates of the world GDP at 3.2% in 2016 and 3.5% in 2017.*

Table 1

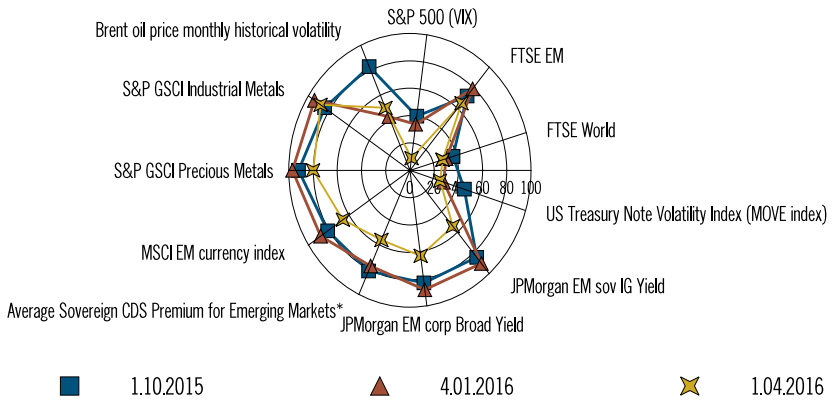
GDP growth rates

	GDP growth rates, %				Deviation from January 2016 forecast, pp		Deviation from October 2015 forecast, pp	
	2014	2015	April 2016 forecast		2016	2017	2016	2017
			2016	2017				
World	3.4	3.1	3.2	3.5	-0.2	-0.1	-0.4	-0.3
Developed countries	1.8	1.9	1.9	2.0	-0.2	-0.1	-0.3	-0.2
United States	2.4	2.4	2.4	2.5	-0.2	-0.1	-0.4	-0.3
United Kingdom	2.9	2.2	1.9	2.2	-0.3	0.0	-0.3	0.0
Eurozone	0.9	1.6	1.5	1.6	-0.2	-0.1	-0.1	-0.1
Japan	0.0	0.5	0.5	-0.1	-0.5	-0.4	-0.5	-0.5
Emerging markets and developing countires	4.6	4.0	4.1	4.6	-0.2	-0.1	-0.4	-0.3
China	7.3	6.9	6.5	6.2	0.2	0.2	0.2	0.2
India	7.3	7.3	7.5	7.5	0.0	0.0	0.0	0.0
Russia	0.6	-3.7	-1.8	0.8	-0.8	-0.2	-1.2	-0.2
Brazil	0.1	-3.8	-3.8	0.0	-0.3	0.0	-2.8	-2.3
South Africa	1.5	1.3	0.6	1.2	-0.1	-0.6	-0.7	-0.9
Mexico	2.3	2.5	2.4	2.6	-0.2	-0.3	-0.4	-0.5

Source: IMF.

Chart 1

Changes in key global financial market indicators (units)



** The sample includes China, Brazil, South Africa, Indonesia, Philippines, Malaysia, Mexico, Peru, Chile, Turkey, Hungary, Poland.*
Note: Scale of 0 to 100 units reflects minimum and maximum values of the indicators on time horizon from January 1, 2012 to April 1, 2016.
From centre to periphery: the fall of stock indexes, the growth of volatility (VIX, Brent, MOVE), the decline in the prices of industrial and precious metals, the weakening of emerging market currencies, the growth of yields (government and corporate bonds), the increase of sovereign CDS premiums.
Source: Bloomberg.

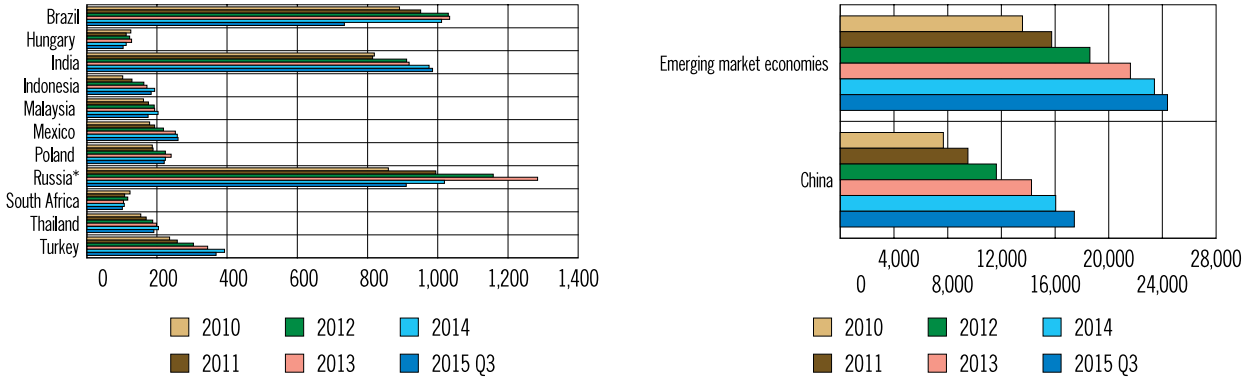
the debt burden of non-financial companies and households on loans from banks and non-bank financial organisations reached 215% of GDP as of April 1, 2016.

2. The high level of debt burden in the private sector in emerging market economies.

If risks in China materialise, debt risks may also intensify in other emerging market economies. It has been typical for developed countries to accumulate considerable sovereign debt in recent years whereas many emerging market economies have considerably increased non-financial corporates debt. However, non-financial companies outstanding debt in many emerging market economies (Russia, Brazil, Hungary, Malaysia, South Africa, Thailand) had decreased in the past few years (Chart 2), but low interest-rate environment creates new stimulus for debt accumulation. Generally, the debt of non-financial companies in emerging market economies continues to increase, basically due to debt growth in China and India.

Chart 2

Debt of non-financial companies in emerging market economies (billions of US dollars)



** The indicator for Russia was calculated as the sum of non-financial companies' debts on loans and other placed funds and debts on issued bonds (at the official USD/ruble exchange rate as of the reporting date) and the foreign debt of other sectors. The latest data are given as of January 1, 2016.*
Source: Bank for International Settlements.

Lower productivity amid the general trends in the global economy related to investors' reduced risk appetite and decreased demand leads to a contraction of investments in the real economy and the growth of credit risks. As a result, the risks of corporate defaults in emerging market economies may materialise in the long term, aggravated by higher debt-service costs amid the growth of borrowings costs in the global markets.

3. The problems of global banks, in particular, EU banking sector.

• Negative interest rates, especially in the euro area, are affecting the profitability of the banking sector. 25% of eurozone government bonds are already traded with negative yields while 12-month Euribor rate on interbank loans has been negative since early February 2016. Lower interest income of the banking sector in the region is driven by narrowing interest rate spreads between credit and deposit rates and also because of considerable interest expenses on deposits with the central bank in comparison with banks' profits.

• The tightening of regulatory requirements after the 2008 crisis along with prolonged period of low interest rates pushes up the costs of global financial institutions. Lowered profitability may adversely affect the bank's ability to provide credit to the real economy, and also compels them to look for risky areas for investment.

• With persistent credit risks, many European banks continue experiencing difficulties in cleaning up their balance sheets.

The escalation of these global risks may intensify capital outflows from emerging market economies and increase the volatility of the exchange rates of national currencies against the US dollar. The periods of increased volatility may also be accompanied by massive sell-offs in the securities markets, especially considering the low market liquidity and frequent cases of flash rally/flash crash. Besides, volatility may increase due to structural changes, in particular, increase in the share of asset managers in the market (including pension, sovereign and exchange-traded funds (ETF)).

The resumption of negative dynamics in the commodity market remains a major negative channel of global risks for Russia.

Box 1. Implications of Oil Price Slump for Exporter Countries

The resumption of negative oil price dynamics and its subsequent persistence at a low level remains a key risk. The level of oil prices is expected to be adjusted considering a new balance of supply and demand in the market. The global demand for oil will be limited amid the slowing growth rates of the world GDP. As for the global oil supply, some uncertainty is observed due to two opposite factors. On the one hand, the global oil supply may increase as

competition in the market is tightening (considering Iran's efforts to build up its positions in the market). On the other hand, the curtailment of investments in the commodity sectors will exert downward pressure[1]. From the viewpoint of global financial stability, negative effects from persistently low commodity prices may prove to be considerable.

Low commodity prices are negatively affecting the fiscal stability of countries with a high share of commodity exports (including oil exporting countries). The budget deficit in some countries (Saudi Arabia, Iraq and Venezuela) is already estimated at 15-20% of GDP. Considering the current uncertainty over further oil price dynamics, the economies focused on commodity exports may face growth of budget deficit and sovereign debt. The high share of social expenditures in total government spending (35% in Saudi Arabia, 42% in Venezuela and 55% in the UAE) is a further aggravating factor.

The further decline in commodity prices prompts a contraction of investments and output in exporting countries. This results in the growth of unemployment rates, a decrease in household disposable income and a contraction of consumer demand. In some countries (Canada and Australia), this situation is typical for particular regions. In turn, these trends have a negative effect on economic growth. According to IMF's estimates, economic growth in commodity exporting countries will contract by 1 percentage point in 2015-2017 compared with 2014-2016, considering the unfavourable forecast for commodity prices. In the countries exporting energy products, economic growth will decline even stronger – by an average of 2.25 percentage points. In some countries, the unfavourable prospects for commodity prices go along with the already existing tensions (for example, in Brazil).

Many **energy companies** may experience considerable financial difficulties, up to defaults, in the event of prolonged low oil prices. Energy companies from developed countries (the United States, Europe) are more exposed compared to emerging market economies as the exchange rate is insensitive to the oil prices dynamics and does not mitigate the impact of oil price shocks. Also, the experience of some developed countries (Canada) shows that a fall in oil prices negatively affects both the energy sector and associated industries.

The flexibile exchange rate of national currencies (devaluation amid a fall in oil prices) in emerging market economies that are commodity exporters helps partially outweight costs related to decreased budget revenues and revenues of commodity sector companies, and also has a beneficial effect on the competitive edge of noncommodity tradable sectors (machinery, building materials, pharmaceuticals, IT and others).

At the same time, the weakening of national currencies versus the US dollar in emerging market economies, as the experience of Russia shows, may have a negative impact on the **sectors dependent on imports** (trade, machinery, companies making capital investments and strongly dependent on the imports of foreign equipment). Amid a contraction in consumer and investment expenditures, the financial position of companies from **non-tradable sectors** (construction) may also deteriorate.

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[1] *According to an estimate of the International Energy Agency as of April 2016, surplus supply currently equals about 1.5 million barrels per day and it is expected to decrease by 200,000 barrels per day in the third and fourth quarters of 2016.*

2. RISKS OF NON-FINANCIAL ORGANISATIONS

2.1. Risks of the Non-tradable Sector

Most industries of non-tradable sector continued to experience stagnation in 2015. Considerable risks and negative consequences for the banking sector are concentrated in the **Industrial Construction** segment. The decline of investments by major Russian enterprises amid falling commodity prices has already caused the bankruptcy of some businesses and also a considerable increase in overdue loans of some large companies. The Housing Construction segment demonstrates relatively good dynamics largely driven by the recovery of the mortgage market. The commercial real estate market, specifically the office segment, is especially sensitive to the market's negative economic dynamics as a result of fall in US dollar-denominated rent rates and growth of the share of vacant premises. Nevertheless, participants in the commercial real estate market are adapting to the crisis situation, in particular, by changing the concepts and formats of properties. In the **non-food retail segment**, the lower trade volumes mostly affected the market's medium-sized entities. Higher import prices forced several digital equipment, electronics and household appliances trade chains to quit the market in late 2015. Government support measures provided assistance to the car production industry and small and medium enterprises. Foreign exchange risks for some types of economic activities and companies remain high. These factors prompted the need for the Bank of Russia to introduce increased capital requirements (risk ratios) from May 1, 2016 on foreign currency loans to corporate entities and foreign currency transactions with securities for the purpose of additional capital buffer that covers foreign exchange risks of the banking sector. There are exemptions from increased risk ratios for companies with sufficient volumes of export proceeds for servicing liabilities denominated in foreign currency.

Construction

The housing market demonstrates relatively good results: the rate of new housing commissioning in 2015 nearly stayed at the record high level of 2014 (the decrease totalled only 0.5%). The positive rate of commissioning and selling in residential real estate market was observed in the economy class, which could be partly explained by a recovery of the mortgage market that began in the third quarter of 2015 (the quarterly growth rates of mortgage loans provisions moved slightly up).

A large number of projects for the construction of **retail trade floorspace** was frozen in 2015 or postponed to later periods. The vacancy rate of Moscow shopping malls in 2015 exceeded the 2014 figure by 0.2 percentage points and reached 8%[1]. The segment of the retail real estate is also witnessing a decrease in rent rates (the prime rent for a shopping centre in Moscow[2] fell by 4.7% in 2015). Nevertheless, by the middle of the year the leaseholders had adapted to the changing conditions and restarted expanding the floorspace. At the same time, quite a lot of so-called technical openings are observed when shopping centres cannot find tenants and are opened semi-vacant.

The office segment is the most vulnerable among commercial properties. The offer of new offices had halved over the year; the share of vacant premises continued to grow and the average free premises index for Class A and B offices had reached actually 20% by the end of 2015 (a growth of 2.8 percentage points as compared to the previous year)[3]. A considerable share of leaseholders' activity in the market involved a reconciliation of current agreements. Both the ruble- and dollar-denominated rent rates are declining. However,

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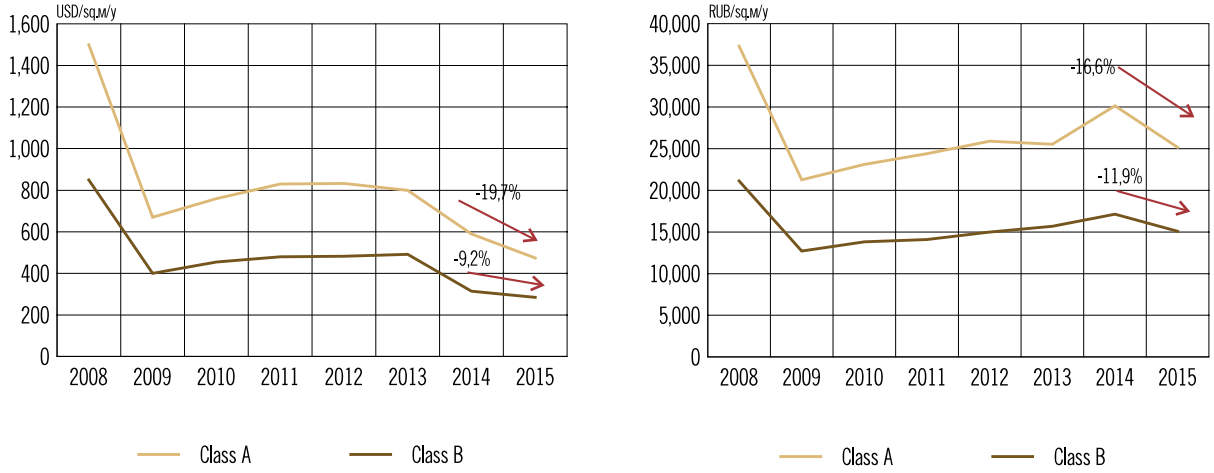
[1] *According to data of Colliers International.*

[2] *The basic requested rate of rent for a property of 100 м² on the first floor of the city's best shopping centres measured in US dollars per м² per year.*

[3] *According to data of Cushman & Wakefield.*

Chart 3

Change in rent rates for Class A and Class B offices



Source: Knight Frank.

the dollar equivalents deceased to a larger extent than the ruble-denominated rates due to the ruble's depreciation (Chart 3). In the segment of Class A offices, the share of dollar-denominated contracts is still large and stood at 64% in 2015 (15% in the Class B segment).

The largest bankruptcies and problems with financial sustainability in construction sector were registered in the Industrial Construction segment. A considerable deterioration of credit quality of bank loans provided to organisations engaged in construction activities is primarily caused by the deterioration of solvency in this segment. In late 2015, the developer Mostostroy No. 6 engaged in the construction of transport facilities in various Russian regions filed a bankruptcy petition. Moreover, the share of overdue loans provided to several large companies is also growing considerably. The problems observed in infrastructure construction are primarily related to a decline of investments provided by government and large Russian and foreign companies.

As a whole, infrastructure construction poses serious risks for the banking sector. First of all, this is related to a large volume of banks' claims to companies (in comparison to other construction segments) and, secondly, the sector's extremely non-transparent nature (there is only one public company in infrastructure construction sector – Mostotrest, which accounts for about 14% of total revenues).

Non-food retail segment

The most significant decline in retail trade in 2015 was registered in the non-food segment (in relative prices, retail trade volumes contracted by 9.2% from 2014 in the food segment and by 10.7% in the non-food segment). In Q4 2015, non-food retail trade showed for the first time a decrease in real prices by 3.6% (in particular, it was caused by the high base effect related to the strong demand in Q4 2014).

In the first nine months of 2015, the share of consumer expenditures on the purchase of non-food goods dropped by 2 percentage points on the same period of 2014 (from 38% to 36%)[4]. The share of non-food retail trade in the total volume of retail trade has decreased but still remains slightly above 50%.

The deterioration of the economic situation makes companies from the non-food segment revise their development strategies. In particular, large retailers are reducing the floorspace of shops or opening shops with a wider range of non-food goods apart from household appliances and electronics aiming at compensating of lowered market growth. Small players are uniting into purchasing alliances in some segments of non-food retail trade to gain cost optimization. Amid the declining markets of household appliances and electronics, trade turnovers of the market leaders are also decreasing. The market decline has produced the most significant impact on medium-

[4] *According to Rosstat data.*

sized players: some of such companies have been recognised as bankrupts while others have announced the wind-down of their business.

Automobile production

The fall of **sales** in the segments of passenger cars and commercial vehicles accelerated in 2015 to 36% against 11% a year earlier. The sales volumes of new passenger cars and light commercial vehicles contracted by 36%[5] and heavy trucks by 42%[6].

The first two months of 2016 were characterised by mixed dynamics in the **production** segment. Following a contraction in the purchasing activity, the production of cars declined by 27% whereas the output of heavy trucks increased by 29% in the period under review. Such a significant growth in heavy trucks production was caused by the output of new models launched by major truck producers, and also by last year's low base effect. The share of foreign-made vehicles in sales contracted for the first time last year to 77% from 80% in 2014. Last year's negative dynamics persisted in the sales volumes: the sales of passenger cars and light commercial vehicles decreased by 21% in January-February 2016 and the sales of trucks fell by 33%.

The export deliveries of passenger cars dropped by 23% in 2015 while the exports of trucks fell by 9%[7]. The falling volumes of car exports from Russia are driven by decreased volumes of deliveries to the CIS countries (-30%) due to the weakening of the national currencies of major importers of Russian-made vehicles (Kazakhstan, Azerbaijan and Belarus). The exports of passenger cars to non-CIS countries increased by about 150% last year and the exports of heavy trucks grew by 6% (the share of non-CIS exports in the total exports is still relatively small – 12%).

The export expansion is a key component of the development strategies of major Russian auto producers as this will allow them to hedge foreign exchange risks, considering the growing costs of imported components. Major auto producers have been increasing the share of their exports in recent years and now it varies between 9% and 18% in the total structure of revenues but current export volumes do not yet allow them to offset the fall of the domestic market (considering that the larger part of exports goes to the CIS countries).

Implemented measures of government support helped to curb slow down in the auto market in 2015. Also, various stimulation programmes that worth a total of 50 billion rubles were extended from the budget to enhance car demand and to stabilise the Russian auto market in 2016. The development of the export potential as well as government programmes will be the main drivers for the support of the Russian auto industry in 2016. According to the AEB's estimations[8], the growth rates of passenger cars and light commercial vehicles sales in Russia will continue to decline but with lower pace of 4.4% in 2016.

The influence of the market developments on the financial position of major auto producers. In the first half of 2015, the EBITDA margin of major auto producers[9] continued to decline and fell to 6%. The largest auto producers have a large debt burden: in the period under review, it grew from 4.3% to 4.8% (the net debt/EBITDA ratio) while the median value of the interest coverage ratio turned negative (-0.4). Some auto producers increased the share of Russian-made components in the total structure of expenditures compared to 2014. However, a considerable part of expenses is still foreign currency- denominated while revenues are mostly ruble-denominated, that provides upward pressure on financial results for 2015 .

Small and medium enterprises

The revenues of small enterprises (excluding micro-enterprises) showed a moderate growth of 4.4% over nine months of 2015 (the average annual growth of revenues in 2010-2014 totalled 12.4%). The largest share in the revenues of small businesses is held by wholesale and retail sector (56%), manufacturing industries (11%) and construction (10%)[10]. At the same time, there is an evidence of declining share of wholesale and retail trade from 62% in 2011 to 57% in 2014. The share of manufacturing industries and construction is rather stable. Small enterprises engaged in

[5] According to data of the Association of European Business.

[6] Autostat data.

[7] According to data of the Federal Customs Service.

[8] The Association of European Business.

[9] The sample includes four companies from among the largest auto producers publishing financial statements under IFRS standards.

[10] According to Rosstat data for the first nine months of 2015.

construction and freight carriage are in the most vulnerable position, which is also explained by a general decline in investments in infrastructure construction. Enterprises engaged in local food production and focused on import substitution, especially the producers of products from the list of Russia's food embargo are in a fairly good position.

The debt burden on small and medium enterprises is decreasing noticeably due to a limited access to bank funding. Falling revenues and profit contribute to emerging debt service problems. In this situation, micro and small enterprises are in the most vulnerable position. The increased borrowing costs for small and medium enterprises are also aggravating debt service coverage ratio with higher covering interest payments and lowered net operating income (the average level of rates for SME is on average 3 percentage points higher[11] than for non-financial companies and equalled 16.3% in January 2016[12]). The influence of interest payments on SME's financial results is considerable: in January-September 2015, interest payments equalled 58.7% of operating income received by small and medium business from sales and reduced before-tax profit by 45.8%.

Large state-owned oil and gas and transport companies were the biggest customers of small enterprise in 2015. As a measure of state support for small and medium business, requirements have been established for state-owned companies since July 1, 2015 to make no less than 10% of their purchases from small business. Overall, these purchases totalled 1.6 trillion rubles in 2015[13]. At present, a possibility of increasing the threshold of purchases from small business to 15% is being discussed. The growth of this share will have a positive effect on the financial results of small and medium enterprises this year amid the reduced demand for their output.

The development of small and medium enterprises is restrained by delays in payments by regional and municipal authorities for the orders fulfilled, which is due to the regions' high debt burden and the curtailment of transfers from the federal budget.

In order to support the SME segment, in 2016 the Bank of Russia kept unchanged interest rate on a special refinancing instrument against the claims on loans to small and medium enterprises at the level of 6.5% and raised the refinancing limit up to 75 billion rubles.

2.2. Foreign Exchange Risks of Major Non-financial Organisations

Transactions conducted by non-financial organisations in various currencies (the receipt of proceeds, operational expenses, capital expenditures, debt raising and servicing) prompts the need to manage foreign exchange risks arising from volatile nature of foreign exchange market. Companies hedge the basic amount of foreign exchange risks with the help of natural hedging strategies (which implies matching inflows and outflows for various currencies). For this purpose, companies receiving foreign currency revenues can use debt instruments denominated in foreign currency. Companies can hedge the remaining uncovered foreign exchange risk with the help of various strategies, using exchange-traded and over-the-counter derivatives denominated in a foreign currency.

With the balanced currency position on assets and cash flows, the losses of a company on foreign currency liabilities are offset by profits from foreign currency-denominated assets while the growth of cash outflows is compensated by increased cash inflows. In case of considerable imbalances between foreign currency-denominated assets and liabilities, inflows and outflows and the high exchange rate volatility, the foreign exchange risks of companies increase manifold, which has its effect on their operational activity and their financial position.

From the viewpoint of operational activities, the ruble's depreciation in 2014-2015 considerably supported export-oriented companies with a high

[11] A wide spread is also typical of other countries. In the eurozone, according to the ECB's data, it measured 1.8 percentage points in March 2016, considering that the average level of interest rates on loans to non-financial organisations equalled 2.04%.

[12] According to data of bank reporting form 0409128 "Data on Average-Weighted Interest Rates on Loans Provided by a Credit Institution."

[13] According to data cited in a report by the Economic Development Ministry on the results of monitoring the application of Federal Law No. 223-FZ of July 18, 2011 "On the Purchases of Goods, Works, Services by Specific Types of Corporate Entities" in 2015.

share of export foreign currency revenues (for example, the non-ferrous metals sector and coal industry) and simultaneously with a low share of operational expenditures denominated in foreign currency (Chart 4). This situation allowed companies to quickly raise the operational profitability levels, stabilise and even somewhat reduce their debt burden.

The opposite situation emerged in the sectors with ruble earnings and a high share of imported raw materials and components in the production cost (for example, the automobile production industry), which reduced their profitability amid limited possibilities to reallocate growing costs to consumers.

Also, with the high volatility of the ruble exchange rate, companies are forced to review and limit their capital expenditures, considerable part of which is denominated in foreign currency. Considering the insignificant share of operational assets held by Russian companies abroad, the influence of exchange rate deviations from a foreign division has a limited effect on the financial results of a group.

The main foreign exchange risk of major Russian companies is related to a considerable share of foreign currency- denominated assets and liabilities. A change in the value of these assets and liabilities as a result of sharp changes in the foreign exchange rates also affects the financial result through exchange rate differences, apart from influencing balance sheet indicators. In this context, it is necessary to distinguish between realised exchange rate differences, which cause a real inflow/outflow of funds (for example, as a result of foreign currency-denominated debt repayment amid a foreign exchange rate higher/lower than at the time of the emergence of a liability) and unrealised exchange rate differences calculated when preparing interim financial statements.

Calculations show that the negative exchange rate difference for major Russian companies may range from 792 billion rubles to 1,167 billion rubles in 2015 or from 13.3% to 19.6% of their expected earnings before interest and taxes (EBIT) for a sample of companies (Chart 5). The size of exchange rate differences calculated for 2009-2013 for the selected group of companies was insignificant (on average, 1.1% of EBIT), whereas in 2014 the size of losses calculated from the exchange rate differences reached 25.1% of the annual EBIT.

Exchange rate differences have no effect on such indicators as adjusted EBITDA and the operational cash flow. However, they exert influence on profitability indicators, which affects the size of tax deductibles and dividend payments that are linked in most cases to the net financial result (net income) for the corresponding period. Despite the growth of a company's ruble-denominated profits from export foreign currency revenues, the losses attributed to exchange rate differences from revaluation of foreign currency-denominated debt may considerably exceed the profits received from core activities and result in a negative value of the company's equity.

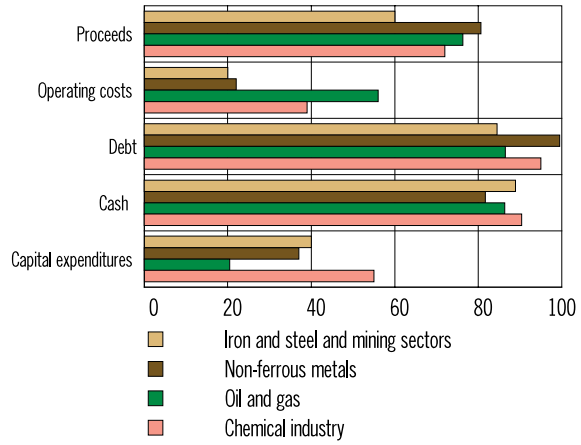
From the viewpoint of the effect of exchange rate differences, exporter companies with a minimum level of foreign currency-denominated debt and/or large foreign currency reserves gained the main competitive advantage from the ruble weakening. On the contrary, companies with a substantial amount of foreign currency-denominated debt compared to foreign currency-denominated assets will receive losses from exchange rate differences in 2015, which will have a negative effect on their financial results.

The highest foreign exchange risk related to exchange rate differences persists for companies under financial distress; for companies with large foreign currency-denominated debt that matures in the short-term period coupled with their weak financial position and lack of accumulated reserves and the ability to refinance that debt; and also for companies that do not receive foreign currency-denominated revenues and have a high share of foreign currency debt in the absence of comparable foreign currency assets.

In the wake of high volatility in the foreign exchange market, companies have started to use hedging strategies with foreign currency obligations of export proceeds, which considerably limits the impact of losses from exchange rate differences on financial results. Pursuant to this approach, a foreign exchange risk arising from future foreign exchange revenues is hedged with the corresponding foreign currency liabilities while exchange rate differences are registered directly in the capital as other aggregate income (loss), which helps transfer a

Chart 4

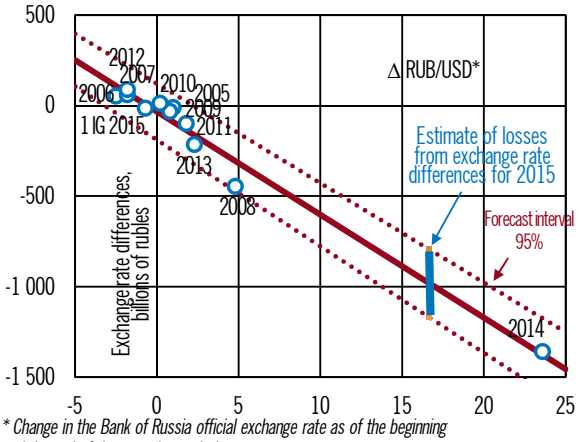
Median share of foreign currency items and operations in the main financial indicators of major exporters



Source: companies' reports and presentations.

Chart 5

Interrelationship between the ruble exchange rate and exchange rate differences posted by major companies



** Change in the Bank of Russia official exchange rate as of the beginning and the end of the reporting period.*
Source: S&P Capital IQ, Bank of Russia calculations.

part of losses to the future. However, the concurrent registration of losses from exchange rate differences in the capital will have a one-off negative effect on the size of a company's own funds in the balance sheet, up to the emergence of negative equity. Also, net income (losses) of companies using this model of hedging foreign currency proceeds will be lower (higher) in subsequent periods by the amount of uniformly transferred exchange rate losses amidst the concurrent gradual recovery of equity.

Foreign exchange derivatives were originally designed to provide financial protection for companies against unfavourable exchange rate movements in the foreign exchange market. At the same time, Russian companies are resorting to the widely-spread practice of using foreign exchange derivatives to reduce borrowing costs. There is a indirect influence of exchange rate deviations on financial position of a company partly offset by fair value of derivatives, which is determined in accordance with tailor-made terms of each contract, which considerably complicates their valuation.

The financial result of operations with derivatives calculated in a profit and loss statement for each reporting period does not exert immediate and direct effect on a company's real cash flow. Thus, most derivatives are registered at a fair value whose changes are stated as profit or loss, and correspondingly, influence the financial result of the relevant period. Besides, if certain criteria are met, a company can classify transactions with derivatives as effective hedging of cash flows and then "paper" profits or "paper" losses are immediately registered in the company's balance sheet in the equity item, outside a profit and loss account. In this situation, the scope of real cash profits or losses from derivatives transactions can be evaluated only as such transactions are actually completed and depending on future market developments.

The most widespread currency derivatives like forward contracts, foreign currency interest rate swaps, foreign currency and commodity options are mainly directly or indirectly linked with US dollar dynamics. The analysis of consolidated financial statements published by major non-financial companies suggests that they are moderately exposed to foreign exchange risk under foreign exchange derivatives. At present, the foreign exchange risk remains manageable for the larger part of the companies covered by the analysis.

The major losses from operations with foreign exchange derivatives were realised in 2014 as most of companies could not foresee a change in the foreign exchange rate and held maximum open positions on foreign exchange derivatives. In 2015, companies took more conservative hedging strategies with foreign exchange derivatives. Nevertheless, considering specific accounting policies of non-financial organisations, the foreign exchange risk under foreign exchange derivatives has not been fully realised yet and will have its effect on their financial position in the coming periods

until the maturity of futures contracts concluded under the market conditions prior to the substantial volatility growth in the foreign exchange market.

As a whole, the companies' experience of foreign exchange risk hedging in 2014-2015 was not always effective and some companies used instruments causing considerable losses amid the ruble devaluation. The companies both underestimated risks posed by foreign exchange derivatives (the ruble's appreciation is normally accompanied by the favourable price conditions for products and, therefore, is considered as a less risky situation than the ruble's depreciation) and attempted to minimise expenses under hedging strategies. At the same time, some companies with foreign currency debt, on the contrary, advantageously hedged their foreign debt payments.

Foreign exchange derivatives used by non-financial companies are important for ensuring financial stability:

– derivatives may critically influence the financial position of companies and prompt the need for government support of the largest companies;

– the fulfilment of obligations under derivative contracts may increase volatility in the foreign exchange market (which happened in the fourth quarter of 2014) as this creates additional demand for foreign currency liquidity;

– losses under derivative contracts reduce budget revenues due to the lowered taxable base for profits and a decreased dividend payments to the budget by state-owned companies.

In accordance with the recommendations of the National Council on Ensuring Financial Stability, the Bank of Russia collects data on over-the-counter derivatives and evaluates the impact of these transactions on financial stability. Since May 1, 2016, the Bank of Russia introduced increased risk coefficients for banks foreign exchange exposures for the purpose of capital adequacy ratios calculation to ensure additional capital buffer is created to cover foreign exchange risks of banks from operations associated with lending to companies and transactions with securities denominated in foreign currency. There are exemptions from increased capital requirements for exposures to corporates with sufficient amounts of foreign currency-denominated revenues for servicing their foreign currency positions.

2.3. Current Situation in the Commodity Markets and the Financial Position of Commodity Exporters

In Q1 2016, the US dollar-denominated prices for basic commodities fell to the minimum levels of the past several years (Chart 6). However, the prices of most exchange-traded commodities (oil, iron ore, steel, coal, copper, gold and others) had registered considerable growth by the middle of Q2 2016 as compared with the beginning of the year. Nevertheless, average annual prices of most commodities remain below last year's average annual levels. For this reason, the foreign currency-denominated export revenues of Russian extracting companies will stay under the pressure of low prices.

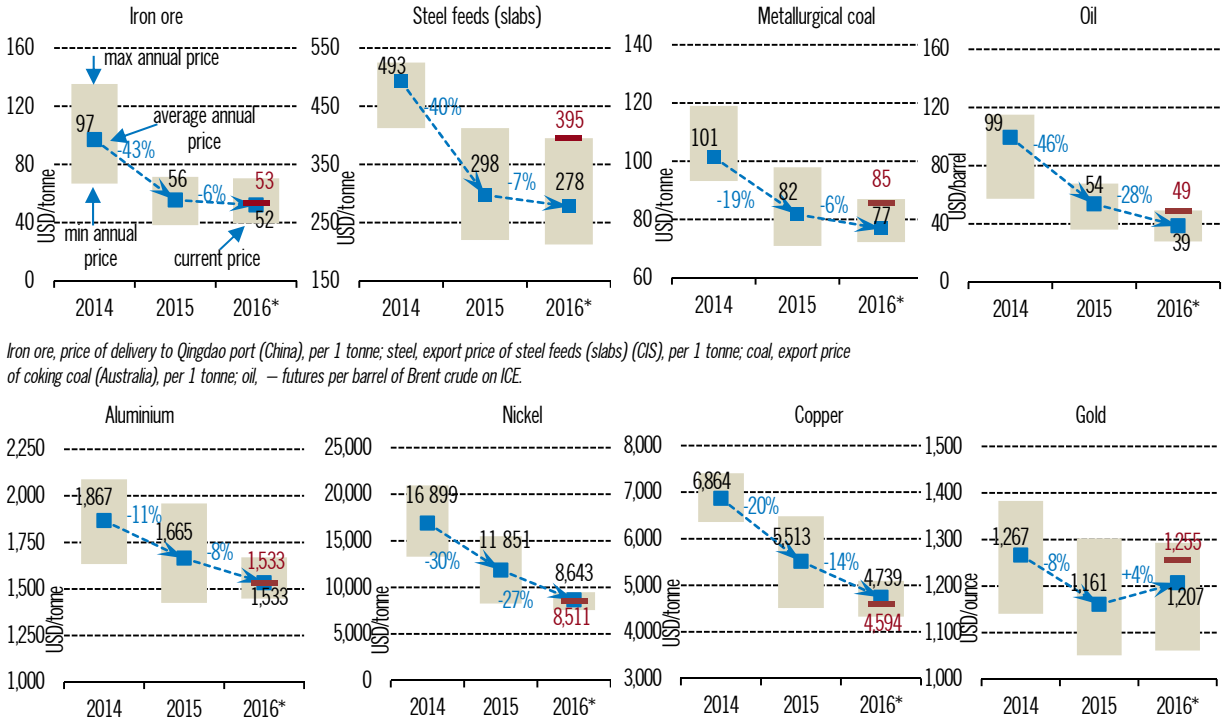
The effect of the ruble's depreciation supporting the ruble prices of resources in 2014-2015 is gradually decreasing. Thus, the average annual prices of oil, ferrous metals and nickel are already demonstrating negative dynamics compared with the previous year, which is expected to have its full impact on the ruble-denominated revenues of commodity exporter companies (Chart 7).

In turn, a change in proceeds will produce a multiplier effect on operational profits depending on the level of a company's operating leverage, which will cause some deterioration of companies' creditworthiness and financial position. However, coal , non-ferrous (except for nickel) and precious metals producers currently continue to benefit from the national currency depreciation.

According to OPEC estimations, the surplus of oil in the market increased from 2.13 million barrels per day in 2015 to 2.4 million barrels per day in Q1 2016 largely driven by output growth by OPEC member countries. IEA and OPEC analysts expect the oil surplus to contract significantly by the end of the year amid an increase in consumption (by 1.2 million barrels per day) and the output reduction by independent suppliers (by 0.7 – 0.8 million barrels per day). Nevertheless, commercial inventories of oil and petroleum products in OECD countries remain at the highest level of over 3 billion barrels, which exceeds the average level for the past five years by 361 million barrels (the United States and

Chart 6

Prices of commodities denominated in US dollars



Iron ore, price of delivery to Qingdao port (China), per 1 tonne; steel, export price of steel feeds (slabs) (CIS), per 1 tonne; coal, export price of coking coal (Australia), per 1 tonne; oil, – futures per barrel of Brent crude on ICE.

Aluminium, nickel, and copper, spot price per 1 tonne on the London Metal Exchange (LME); gold, spot price per 1 ounce on the London Metal Exchange (LME).
** As of May 20, 2016.*
Source: Bloomberg.

the European Union account for the largest increase in inventories)[14].

As annual corporate statements show, the current low oil prices environment will force oil-producing companies to further cut investments in the development of new capital-intensive deposits and close down loss-generating projects. According to OPEC data, there were 1,480 active rigs in April 2016, or almost 2.5 times less than in 2014 (largely due to a sharp decrease in the number of rigs in Canada and the United States). This trend is also limiting the possibilities of companies both for increasing and for maintaining the current level of output.

A consensus forecast of Bloomberg Intelligence analysts suggests a moderate recovery of average annual prices for the Brent crude blend from the median level of $40.96 per barrel in 2016 to $55 per barrel in 2017 and $62 per barrel in 2018. Also, experts estimate that shale oil producers will be able to return to output growth when the oil price reaches the level of $50-60 per barrel.

The current prolonged low price environment for metals and ores has been largely caused by market surplus supply due to the launch of a large number of mining projects in the period of high prices and overestimation of future demand primarily from China, which consumes up to a half of the global production of base metallic ores and metals. Besides, a considerable part of the demand for metals in China may be linked with financial operations. Thus, Bloomberg Intelligence analysts believe that China's demand for metals may contract significantly in case of the RMB's continued devaluation as metals are used as collateral in carry-trade deals (traders' speculation on interest rates spreads in China and western markets).

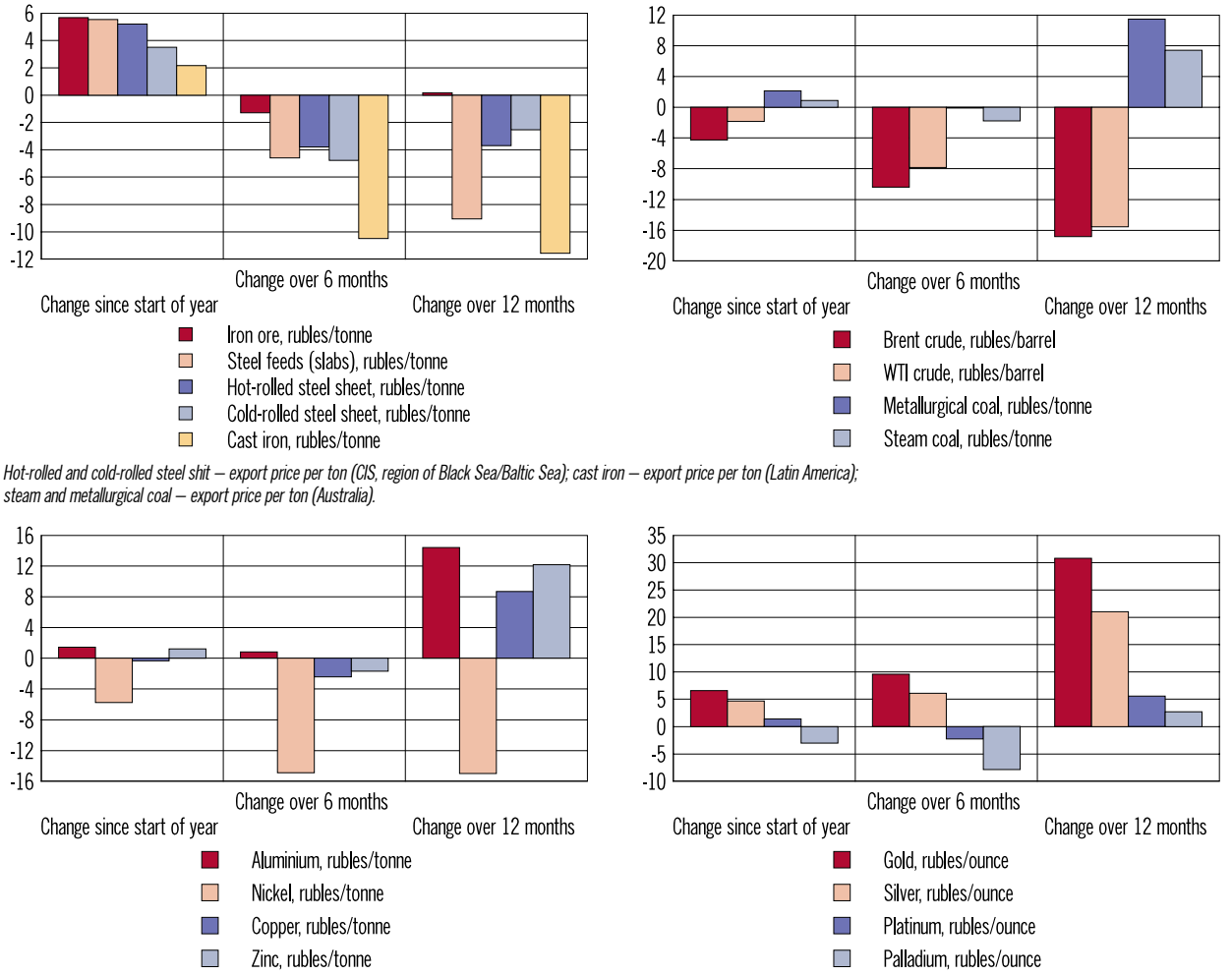
From the viewpoint of sustainability of supply, the devaluation of the currencies of the major suppliers of ores and metals and the low prices of energy products also contribute to the persistence of low prices as they considerably reduce extraction, production and transportation costs.

As supply surplus remains in commodity markets, potential for the price growth is limited. However, as the current levels of prices reached the

[14] *OPEC Monthly Oil Market Report, May 2016.*

Chart 7

Average annual world prices of major commodities in Russian rubles (as of May 20, 2016)



Hot-rolled and cold-rolled steel shit – export price per ton (CIS, region of Black Sea/Baltic Sea); cast iron – export price per ton (Latin America); steam and metallurgical coal – export price per ton (Australia).

Aluminium, Nickel, Copper, Zinc – spot price per ton at London Metal Exchange (LME); gold, silver, platinum, palladium – spot price per ton at London Metal Exchange (LME).
** Recalculated at the official exchange rate of the Bank of Russia.*

Source: Bloomberg.

levels corresponding to extraction and production costs, the probability of a stronger fall in prices remains quite low as this may cause a considerable contraction in supply. Considering China as the main consumer of the basic types of raw materials, the future price dynamics of the commodity markets will be largely determined by Chinese economy.

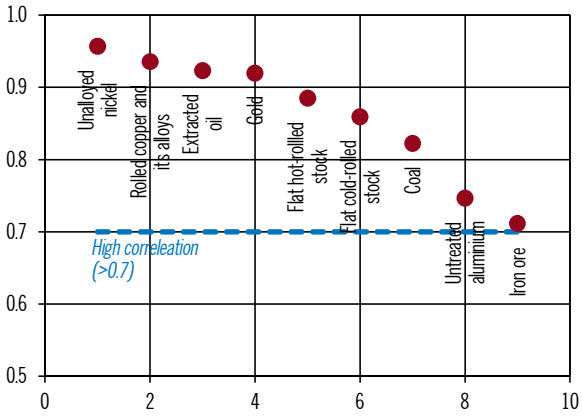
Amid the limited capacity of the domestic market, major exporters supply most of their products to the external market (oil-producing and coal companies, non-ferrous metals companies, companies in the iron and steel industry and in the petrochemicals sector, mineral fertilizer producers). Meanwhile, the principle of export netback pricing (world market prices less customs duties and the cost of transportation) is used for the domestic market to earn equal revenues in the internal and external markets. Therefore, exporters' revenues are largely correlated with the global prices (Chart 8). Consequently, the aggregate financial position of exporter companies is mainly determined by the long-term trends of the difference between revenues linked to global prices and the ruble-denominated costs of exporting commodities.

Most of large commodity producers reported an improvement in their positions on the global costs curve in 2015. However, this is largely due to the ruble's weakening rather than to the increase of their operational efficiency. For instance, the total costs of oil extraction and metal production denominated in US dollars fell by an average of 35% and 31%, correspondingly, as compared with the costs curve for 2014[15], which is largely

[15] *According to data of the companies' consolidated financial statements as of May 20, 2016.*

Chart 8

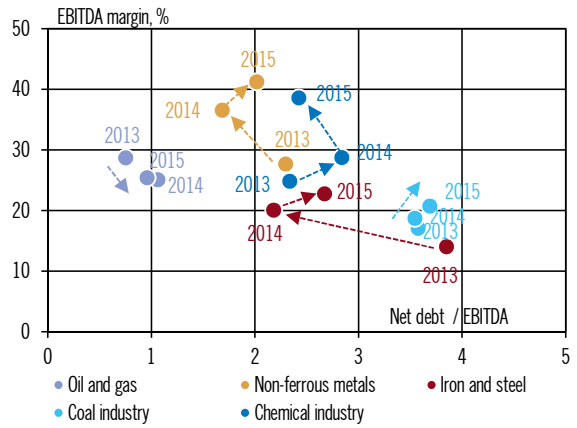
Correlation of the prices of basic export commodities in the internal market* and the prices in the world markets



Monthly ruble prices recalculated at the relevant average monthly exchange rate of the Bank of Russia.
Source: Bloomberg, Thompson Reuters, Rosstat.

Chart 9

Profitability and the debt burden of raw material extracting companies in 2013-2015 (as of May 20, 2016)



** As of May 20, 2016.*
Sources: S&P Capital IQ, consolidated financial statements, Bank of Russia calculations.

related to the weakening of the average ruble exchange rate by 37% in the period under review. Nevertheless, even with the current average yearly ruble exchange rate, extracting companies have created a considerable safety buffer in case of the persistence of low commodity prices environment at the current levels over prolonged period of time or even further moderate decrease.

Oil and gas sector

In 2015, oil-producing companies insignificantly built up oil output (by 1.3%) and reduced the volume of oil refining and natural gas extraction (by 2.7% and 2.6%, respectively). At the same time, they increased the exports of crude oil, petroleum products and natural gas (by 9.4%, 4.1% and 7.5% on an annual basis, respectively)[16] amid a decline in domestic demand and the persistence of low prices in global markets. The rates of oil output growth accelerated in January-April 2016. Thus, according to data of the Central Dispatching Department of the Fuel and Energy Sector, the output grew by 4.5 million tonnes or by 2.7% against the same period of last year.

The ruble depreciation in 2015 (the nominal foreign exchange rate fell by 37.4%, year on year[17]) helped only partially compensate for an almost two-fold decrease in average annual oil prices (by 47.5% year on year, according to Rosstat data), which caused stagnation of the ruble proceeds of major oil and gas companies[18] as compared with the previous year (consolidated revenues grew by 2.0% over the year[19]). Also, considering the taxation specifics of the oil and gas sector related to the tax maneuver implemented in the oil and gas industry in 2015 and optimised operational expenses, the average weighted EBITDA margin remained quite stable and increased only insignificantly to 25.4% (Chart 9).

Restricted access to foreign capital markets prompted accelerated foreign debt repayments. Besides, companies raised funds in the domestic market quite moderately. As a result, the debt burden estimate measured by the average weighted net debt/EBITDA ratio slightly decreased following the results of the year and stood at about 1.0. Therefore, the debt burden of major oil and gas companies remains at a level relatively low compared to other sectors.

The persistence of low oil prices and growth of tax burden on the oil and gas sector in 2016 will prompt some deterioration of the companies' financial indicators following the results of this year.

Metallurgy and mining industry

The continued fall in the world prices of raw materials and metals caused by supply and demand imbalances for the products of both ferrous and non-ferrous metallurgy became the main challenge for metallurgical companies in 2015.

[16] *According to Rosstat data.*

[17] *According to Bank of Russia data.*

[18] *Based on the sample of 10 major oil and gas companies publishing consolidated financial statements.*

[19] *As of May 20, 2016.*

Ferrous metallurgy companies faced a considerable fall in the demand in the domestic market due to the curtailment of production by major consumers – the machinery industry and the construction sector. For ferrous metallurgy, the domestic market is historically more profitable and, therefore, export deliveries are less significant and exert weaker influence on financial results. Nevertheless, the ruble depreciation helped ferrous metals companies compensate for the negative effect of low prices in global markets and considerably increased their competitiveness in external markets. This factor allowed them to build up the average EBITDA margin to 22.7% compared with 20.0% in 2014 and 14.0% in 2013, the minimum level for the past few years[20]. The debt burden of companies slightly increased following the results of the year and the average weighted net debt/EBITDA ratio increased to 2.7 but currently remains at an acceptable level for most metallurgical companies (Chart 9).

The domestic market for non-ferrous metals, precious metals and gems producers is more limited and thus an overwhelming part of their output is exported. Therefore, these companies depend on the world market situation to a considerable extent and they are traditionally characterised by higher operating profitability and the lower debt burden as compared with ferrous metals companies (Chart 9). A less dramatic fall in the world prices of their products in 2015 helped these companies build up their average weighted EBITDA margin from 36.5% to 41.2% due to the faster reduction of operational expenses amid the moderately low debt burden (the average weighted net debt/EBITDA ratio increased from 1.7 in 2014 to 2.0 in 2015 due to net borrowings)[21].

The price situation in external markets, the supply and demand dynamics and the foreign exchange rate will be the key factors for the financial position of metals companies in 2016.

Coal industry

The coal industry is still in the least favourable financial position among extracting companies as coal prices were observed to decline continuously after their peak level in 2011 due to global overproduction amid stagnant demand in power engineering. Although Russian companies hold leading positions by the cost price of coal production, transportation expenses (railway tariffs, the lease of railway cars, transhipment at ports, stevedoring services) take up a considerable share in coal companies' costs (30-50%) due to the remoteness of deposits from basic sales markets. The available sample of companies[22] shows that their average weighted EBITDA margin was lower in 2015 than the figure demonstrated by other extracting companies, while this indicator slightly increased in 2013-2015, although to a lesser extent compared with metallurgical companies. That is why, the total debt burden (most of the debt portfolio comprises foreign currency liabilities) remained at about the previous level amid the dramatic ruble depreciation (Chart 9).

Chemical and petrochemical industry

The strongest improvement in the financial position in 2015 was demonstrated by companies of the chemical and petrochemical industry. In 2015, the ruble's depreciation exerted its positive influence on the sector in full. According to data of consolidated financial statements reported by the sector's major companies, the average weighted EBITDA margin increased by the largest amount of 9.8 percentage points among extracting industries to 38.6%[23] (Chart 9). Chemical and petrochemical companies are also actively using foreign currency funding and, therefore, their debt burden showed a considerable increase in 2014 due to revaluation at the current exchange rate while the weakening of the national currency at the end of the year has not yet had its effect on operational profits. However, in 2015, the debt burden returned to the 2013 level due to the outpacing growth in operational profits, which had fully felt the effect of the ruble depreciation.

[20] *Based on the sample of nine major ferrous metals companies publishing consolidated financial statements.*

[21] *Based on the sample of nine major non-ferrous metals, precious metals and gems producers publishing consolidated financial statements.*

[22] *The sample includes four coal companies publishing consolidated financial statements, including those integrated into metallurgical holding companies.*

[23] *Based on the sample of eight major companies of the chemical and petrochemical industry publishing consolidated financial statements.*

3. SYSTEMIC RISK ASSESSMENT IN THE BANKING SECTOR

3.1. Recovery of Corporate Lending and Associated Risks

In October 2015 – March 2016, the amount of ruble-denominated loans to resident companies gradually recovered. However, this indicator was still behind the peak levels of 2014. The annual growth rates of ruble-denominated outstanding loans provided to non-financial organisations remained moderate and increased by 0.5 percentage points from October 1, 2015 to 5.3% as of April 1, 2016. The amount of loans denominated in foreign currency, on the contrary, was observed to decline gradually, which reduced the debt of non-financial organisations in foreign currency by $400 million from October 1, 2015. The annual rates of growth in outstanding foreign currency-denominated loans fell by 2.7 percentage points from October 1, 2015 to 1% as of April 1, 2016[1].

The quality of the aggregate portfolio of loans to corporates (except for credit institutions) remained stable in Q4 2015. However, already in Q1 2016, the share of bad loans rose by one percentage point to 10.1%, which was largely caused by the deterioration of the financial condition of some large borrowers.

In 2015, the banking sector was confronted with a considerable growth in credit risks in some types of economic activity and carried out structural changes of its credit portfolio by sector (Chart 10). The lending activity was curtailed to the largest extent in the segment of wholesale and retail trade[2] where the creditworthiness of companies is declining amid the households' reduced solvent demand and the economy's negative growth rates. This segment registered a steady trend towards the growth of overdue debt (the share of overdue debt rose by 3 percentage points from October 2015 to 12.1% for ruble loans as of April 1, 2016). As compared to such types of economic activity as air transport and the extraction of natural resources where the growth of overdue debt is largely caused by credit risk materialisation in some large borrowers, risk in the segment of wholesale and retail trade is materialised in a large number of companies, i.e. typical of this kind of activity as a whole.

Credit activity is also observed to decline in the "Construction" segment, which is characterised by some of the highest levels of credit risk. The share of overdue debt under ruble loans to this segment stands at 22.9%, after increasing by 3.8 percentage points from October 1, 2015. The growth of overdue debt is largely caused by financial difficulties experienced by some large borrowers. Also, this sector is characterised by a high level of loan restructuring. As of April 1, 2016, every second large loan was restructured.[3]

The high levels of overdue leans remain in the "Air Transport Activity" segment, which is caused by the failure of Transaero airline which is undergoing the bankruptcy procedure to make payments under ruble and foreign currency loans. The share of overdue debt in this type of economic activity equalled 38.8% for ruble loans and 12.8% for foreign currency loans as of April 1, 2016.

Overdue debt on ruble-denominated loans in companies engaged in agricultural activity remains at a relatively stable, although high level (10.6%).

The share of overdue debt on loans to companies producing transport means and equipment is currently insignificant at 2.1% for ruble-denominated loans and 2% for loans denominated in foreign currency(as of April 1, 2016).

The low level of overdue debt is probably caused by the growth of the share of restructured large loans from 8% to 29.3% (see footnote 3) from the beginning of 2015 to April 1, 2016.

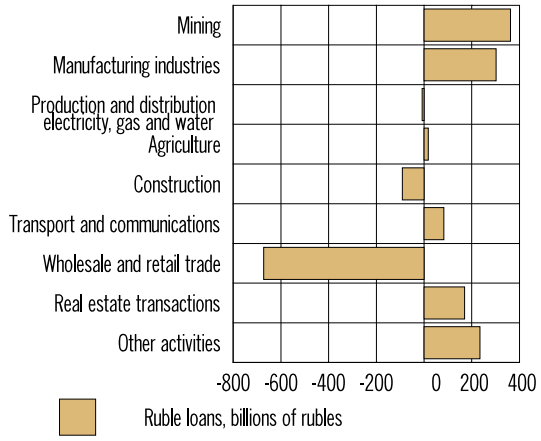
[1] Excluding the currency revaluation factor.

[2] The type of economic activity under the OKVED Classifier of Russian Economic Activities – "Wholesale and Retail Trade, Repair of Motor Vehicles, Motorbikes, Household Appliances and Personal Items."

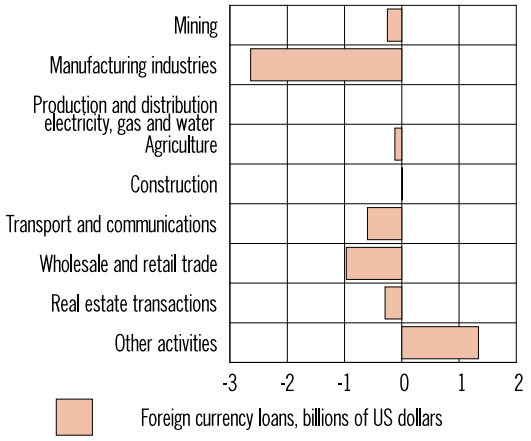
[3] According to data of reporting form 0409117 "Data on Large Loans," which include information on 30 largest loans provided by a credit institution

Chart 10

Change in outstanding loans by the type of economic activity in the aggregate portfolio of loans to resident corporate entities (from October 1, 2015 to April 1, 2016)



Source: Bank of Russia.



Source: Bank of Russia.

Table 2

Portfolio of loans to non-financial organisations by the type of economic activity

Sector	Loan currency	Share of loans in the total volume of loans*, %	Share of overdue loans, %	Change in the share of overdue loans (October 2015 – March 2016), pp
Mining	Rubles	3.6	1.7	-2.5
	Currency	4.2	5.9	3.8
Manufacturing industries	Rubles	15.8	5.9	0.2
	Currency	7.4	2.3	-0.1
Production of machinery and equipment	Rubles	1.6	5.4	0.8
Production of transport means and equipment	Rubles	3.4	2.1	0.2
	Currency	0.7	2	0.1
Electricity, gas and water production and distribution	Rubles	3.5	2.2	1
Agriculture, hunting and forestry	Rubles	4.8	10.6	1.2
Construction	Rubles	5.4	22.9	3.8
	Currency	1.6	3.4	0.6
Transport and communications	Rubles	4.3	8.6	3.2
	Currency	1.5	5.4	4
Wholesale and retail trade	Rubles	12.3	12.1	3
	Currency	1.9	6.2	0.8
Real estate transactions, lease and services	Rubles	10.2	5.1	-0.6
	Currency	6.1	4.1	0.7
Other activities	Rubles	11.9	6.2	-0.4
	Currency	4.6	2.2	0.2

** Share of outstanding loans by the type of economic activity in the aggregate debts of resident non-financial organisations by all types of economic activity and loan currencies.*

The loans to companies engaged in such types of economic activity as mining[4] and manufacturing industries are characterised by high credit quality. For these types of economic activity, loans are observed to be redistributed in favour of the ruble component (the amount of outstanding foreign currency loans fell by $2.9 billion in the period from October 1, 2015 to April 1, 2016 while debt outstandings on ruble-denominated loans increased by 664.3 billion rubles).

The segment of lending to SME is currently characterised by the increased level of credit risk[5] The amount of outstanding loans in this segment stands at about 4.7 trillion rubles (14.4% of the

[4] *The growth of overdue debt on foreign currency loans in this type of economic activity is caused by problems experienced by some borrowers.*

[5] *All the data are given on credit organisations operating as of April 1, 2016.*

portfolio of loans to non-financial organisations). The share of category IV-V loans equalled 23.4% as of April 1, 2016, increasing by 3.2 percentage points from October 1, 2015. The share of overdue loans also continues the trend towards its growth. The share of overdue ruble-denominated loans increased by 2.3 percentage points (by 99 billion rubles) from October 1, 2015 to 15.7% as of April 1, 2016. Nevertheless, despite the high level of credit risks, credit activity has been gradually recovering in this segment since July 1, 2015, including through state support programmes. The annual rates of growth in outstanding loans, which reached their minimal level of – 14.2% as of July 1, 2015, were gradually increasing and reached 1.9% as of April 1, 2016, net of the currency revaluation factor.

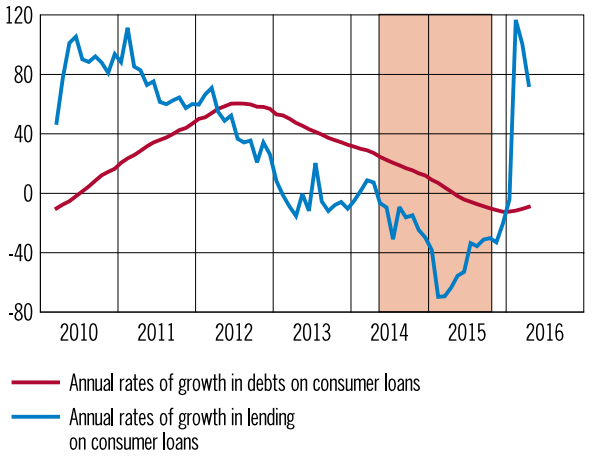
As a whole, credit activity is currently observed to decline in those types of economic operations, which are characterised by high credit risks and which stay outside state support measures (the construction of non-residential facilities, wholesale and retail trade). Banks are substituting loans to these sectors with loans to export-oriented companies, reducing the offer of foreign currency loans. The structure of loan portfolios is changing similarly to the structure of the economy: the share of loans to companies from non-tradables sectors is decreasing along with a growth in the proportion of loans to companies from tradable sectors. The quality of the loan portfolio by most types of economic activity will be determined in the future by the financial sustainability of separate large borrowers, like it is done today.

3.2. Stabilisation in Retail Lending Market

The market of unsecured consumer loans in Q4 2015 and early 2016 was characterised by further decrease in household debt. The annual rates of growth in outstanding bank loans remained negative during 12 months and equalled -9.1% as of April 1, 2016. Amid the fall in household real incomes (by 2.4% in Q1 2015 and Q1 2016), the demand for new loans is recovering slowly (it was only in January 2016 that the annual rates of growth in the provision of loans became positive for the first time since Q4 2014 due to the base effect) and remains insufficient for covering the repayments of

Chart 11

Annual rates of growth in granted loans and outstanding consumer loans (%)



Source: Bank of Russia.

the vintages of loans issued during the credit boom of 2012-2014 (Chart 11).

The decrease in total outstanding loans contributed about 50% to the growth of the share of bad loans[6] in the portfolios of credit institutions in Q1 2016: this growth reached 17.5% for the sector as a whole as of April 1, 2016 and this figure for a group of banks specialising in unsecured consumer lending amounted to 31.8%[7] (Chart 12).

At the same time, the above dynamics does not reflect some positive trends that developed in the second half of 2015 and at the beginning of 2016 and testify to lower risks for the portfolio of unsecured loans. The credit quality of the vintages of loans originated during the first half of 2015 amid the deterioration of the macroeconomic environment considerably improved in Q4 2015: the share of bad loans among these loans for 12 months from the time of their provision makes up 9-11% and demonstrates a trend towards stabilisation (Chart 13). The early indicators of the quality of loans issued during the second half of 2015 (the share of bad loans on the third month after loan provision) also reflect households' better payment discipline.

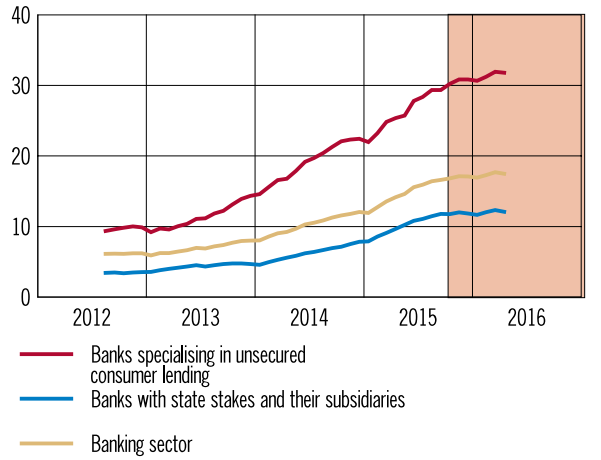
The substitution of the loan vintages of 2011-2012 characterised by the borrowers' high debt burden with newly issued loans is gradually

[6] *Loans with overdue payments of more than 90 days.*

[7] *The following criteria are used for inclusion in the group of banks specialising in unsecured consumer lending:*
– *unsecured loans of over 10 billion rubles;*
– *the unsecured loans to assets ratio of over 20%;*
– *the share of interest income on household loans in total interest income at over 35%.*

Chart 12

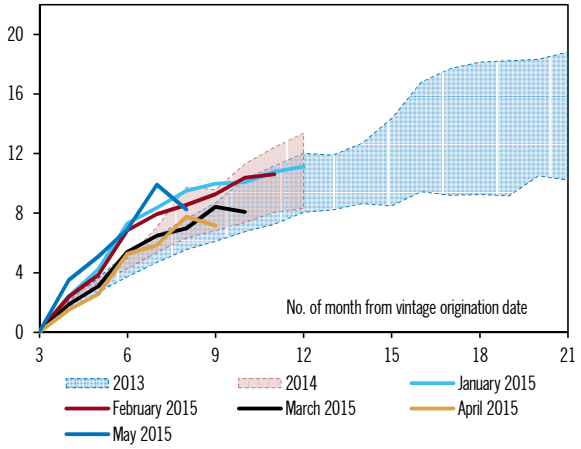
Share of bad loans by the type of credit institutions (%)



Source: Bank of Russia.

Chart 13

Share of bad loans by loan vintage* (%)



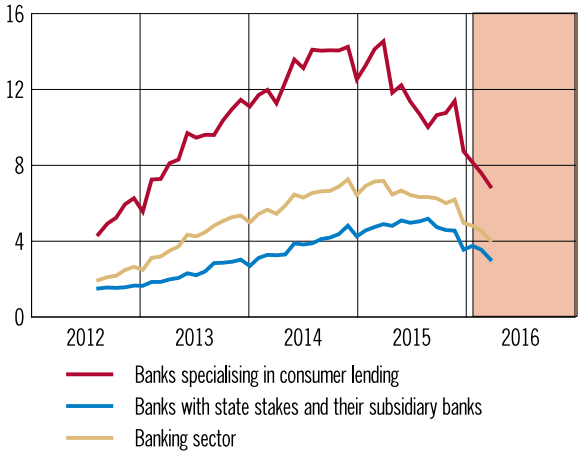
** Calculations are based on NBCH data. The survey covers over 50% of the market.*
Source: Bank of Russia.

reducing the risk for the loan portfolio as a whole: after the peak levels registered in Q1 2015, the risk level determined by the NPL origination ratio[8] demonstrated its fall to 4.0% as of April 1, 2016 from 6.5% a year earlier (Chart 14). This indicator improved even more considerably for a group of retail banks: from 11.8% in early 2015 to 6.9% as of April 1, 2016. This indicator's dynamics is an early sign (with a lag of up to 1-1.5 years) for the reduction of share of bad loans. This suggests that the share of loans with overdue payments of more than 90 days is expected to start decreasing in Q4 2016.

In order to prevent a further decrease of outstanding loans in their loan portfolios, some large market participants launched policies in Q4 2015 and Q1 2016 to stimulate demand through lower rates and relaxed requirements for the borrowers' debt burden. As a result of these policies, the effective interest rate in the Cash Loans and POS-loans segments fell by 1.5-2 percentage points. The Cash Loans segment, the largest sector of unsecured lending, showed an increase in the share of loans provided to borrowers with the increased debt burden (PTI[9] of over 60%), which

Chart 14

NPL origination ratio[3] of the portfolio of unsecured loans by the type of credit institutions (%)



Source: Bank of Russia.

rose from 7.5% to 25.5% in Q4 2015 and Q1 2016[10]. The dynamics of the debt burden indicator of new borrowers (an increase from 40% to 44%) suggests that banks have possibly returned to the strategy of building up their loan portfolios through more relaxed underwriting standards. The market leaders are augmenting their loan portfolios by actively approving loans for borrowers who have salary accounts with these lenders. At the same time, this trend may also prompt banks, which do not have a qualitative base of customers but are seeking to keep their market share, to relax underwriting standards in future.

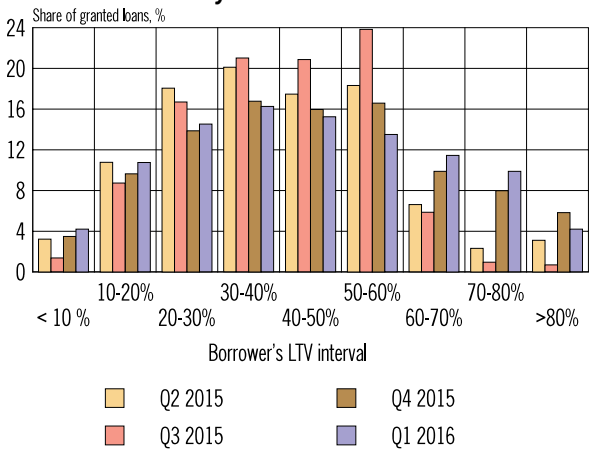
[8] *The increase in provisions for loan impairment and write-offs over 12 months relative to the average size of the loan portfolio less provisions created over 12 months.*

[9] *PTI (Payment-to-Income) is an indicator of the borrower's debt burden, which is calculated as a ratio of the payment amount established by a loan agreement to the borrower's income per quarter.*

[10] *The Bank of Russia's project for surveying households' outstanding loans (the data as of April 1, 2016). The survey covered 70.7% of the retail loan market.*

Chart 15

Granting of cash loans by borrowers' PTI*

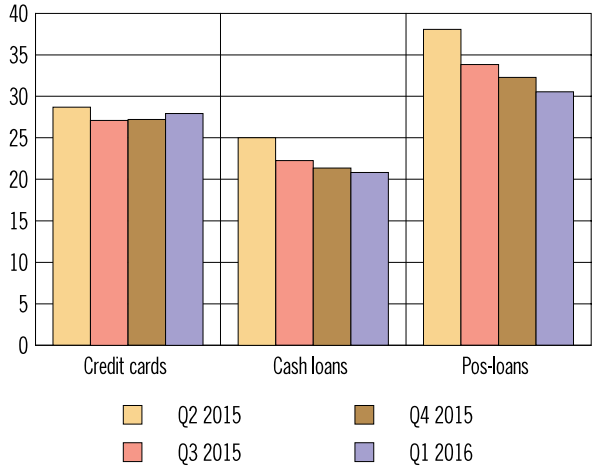


** Survey of the Bank of Russia on indebtedness of households (as of April 1, 2016). The scope of survey estimates 70.7% of retail lending market..*

Source: Bank of Russia.

Chart 16

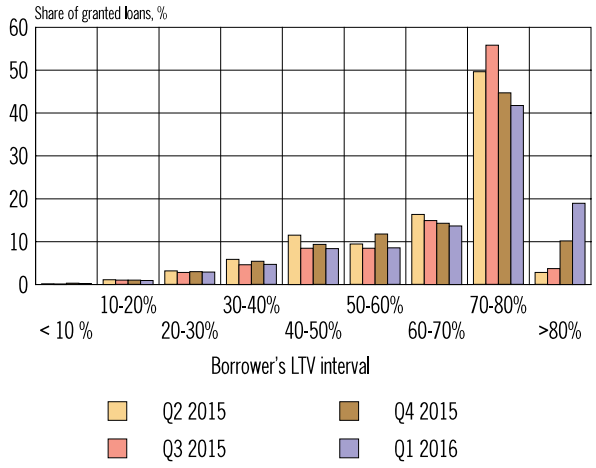
Effective interest rate by the loan category (%)



Source: Bank of Russia.

Chart 17

Mortgage loans by LTV



Source: Bank of Russia.

The return on equity in retail banks continued to recover over the period of 12 months and reached 0.2% as of April 1 2016 (as compared with -10.8% in Q2 2015). The financial result posted by this group of credit institutions totalled -1.2 billion rubles for Q1 2016, which along with the effect of the reduced loan portfolio allowed some retail banks to maintain their capital adequacy rates at the level of Q4 2014.

As compared to the unsecured lending segments, the outstanding amounts of residential (including residential mortgage) loans continue to grow. The annual rates of growth in outstanding loans equalled 12.5% as of April 1, 2016, having decreased by 1 percentage point from October 1, 2015.

The current programme of subsidising interest rates on mortgage loans, which was extended until the end of 2016, remains the main driver of maintaining the demand for mortgage loans. The loans provided under this programme account for about 41.2% of the entire lending in Q1 2016 (see footnote 10). On their part, banks have also taken steps to build up their loan portfolios. The weighted average effective interest rate on residential mortgage loans issued in rubles in Q4 2015 and Q1 2016 equalled 12.6%, or 0.8 percentage points lower than the average weighted rate for this category of loans granted in Q2 and Q3 2015.

As some banks eased the requirements for the minimum initial payment in mortgage lending, LTV increased to the 2014 levels in the market as a whole: the share of loans provided in Q1 2016 with LTV of over 80% grew to 19% from 3.7% as of October 1, 2015 (Chart 17).

The credit quality of the portfolio of mortgage loans remains generally high. The share of loans with overdue payments of more than 90 days in this segment as a whole stood at 3.2% as of April 1, 2016 with an increase by 0.2 percentage points from October 1, 2015. However, this figure for foreign currency loans which account for 2.7% in the portfolio of mortgage loans as of April 1, 2016 stands at 35% (see footnote 10). The high credit quality of outstanding loans in the portfolio of mortgage loans as a whole can be attributed to the banks' current high underwriting standards.

The segment of retail lending in Q4 2015 and Q1 2016 was characterised by banks' steps to maintain the demand for loans even amid the households' declining solvency. In particular, these steps included lowering loan rates and relaxing

banks' underwriting standards to the 2014 level both in the unsecured lending and mortgage loan segments. The early indicators of credit risk suggest that the situation in the segment of unsecured consumer lending will normalize at the end of 2016, if macroeconomic factors do not deteriorate. In the mortgage lending segment, the level of credit risks remains moderate.

Box 2. The Assessment of the Current Phase of the Credit Cycle in the Russian Economy

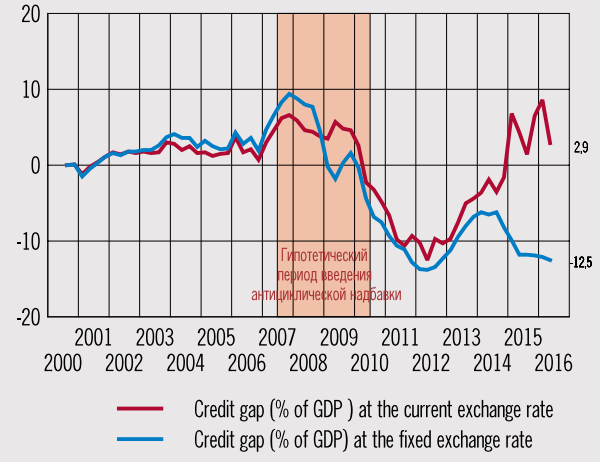
When taking decisions on the size of the countercyclical buffer for capital adequacy ratios, the Bank of Russia is guided by a broad list of indicators and models. The model of the credit gap calculation offered by the Basel Committee on Banking Supervision (BCBS) is one of the key approaches to determining the current phase of the credit cycle.[1] A credit gap is determined as the difference between the credit-to-GDP ratio and its long-term trend. The supply of credit comprises bank credit extended to households and non-financial organisations, and also takes into account non-financial organisations' obligations under debt securities and external liabilities.[2]

The approach offered by the BCBS has a number of faults, one of which is the accounting of the revaluation of foreign currency liabilities. This factor may play a considerable role in the periods of increased turbulence in the foreign exchange market. In this context, the Bank of Russia uses the factor analysis of the credit gap change in addition to the standard methodology of the BCBS' credit cycle phase estimation. The factor analysis allows excluding those credit gap changes that are not prompted by the credit expansion and are caused by the revaluation of the non-financial sector's foreign currency liabilities or by the GDP contraction.

The formal credit gap estimations made under the BCBS methodology indicate that a considerable growth in credit supply was observed from October 1, 2014. At the same time, the factor decomposition of the credit gap shows that excessive credit growth in the economy during this period was mainly driven by the revaluation of foreign currency liabilities accounting for up to 54% of non-financial organisations' total liabilities. With the removal of the foreign currency revaluation factor, the cyclical component of the credit gap turns negative, which testifies to the continued downward phase of the credit cycle. In these conditions, the Bank of Russia considers it expedient to keep the zero level of the countercyclical buffer.

Chart 18

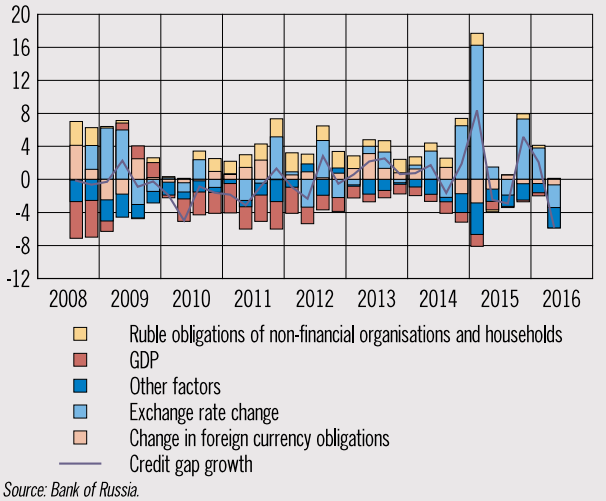
Assessment of credit gap (in broad definition, percentage points)



Source: Bank of Russia.

Chart 19

Contribution of individual factors to credit gap change (broad definition, percentage points)



Source: Bank of Russia.

[1] *Guidance for national authorities operating the countercyclical capital buffer. Basel Committee on Banking Supervision. December 2010.*

[2] *This definition corresponds to the broad credit supply.*

3.3. Interest Rate Risk Assessment across Credit Organisations

Interest expenses had risen sharply and were a considerable factor of the decrease in the banking sector's profits in 2015, due to which the interest rate risk remains among the key risks for the banking sector and requires constant monitoring and assessment.

It is widely accepted in interest risk evaluation to divide banks' assets into the banking book and the trading portfolio. The banking book comprises the assets acquired for investment purposes and held to redemption. The trading portfolio includes the assets (mostly financial instruments) acquired for sale. The assessment of the interest rate risk for the trading portfolio is accounted in the capital for regulatory purposes while this evaluation for the banking book does not exert restrictive regulatory influence on the bank's activities.

In addition to the difference between the volumes of claims and liabilities sensitive to interest rate shocks, the following factors influencing the assessment of the interest rate risk for the banking book are essential:

1. Interest rate elasticity. The Bank of Russia's key rate increase exerts heterogeneous influence on the average weighted yields of ruble claims and the average weighted cost of banks' ruble obligations depending on the category of claims and liabilities, and also depending on their maturity.

2. A change in the term structure of claims and liabilities. A noticeable change in the Bank of Russia's key rate may result in the re-distribution of claims and liabilities among time intervals due to the specifics of customers' behavior (for example, due to the early loan repayment, an inflow of new deposits, an interflow of deposits into new deposit categories in order to receive higher returns and so on). This effect was observed, in particular, after the Bank of Russia considerably raised its key rate in December 2014 when some banks registered a growth in the share of short-term deposits of households.

For the purposes of the quantitative assessment of these effects, the Bank of Russia sent an inquiry to 26 largest banks and analysed the data they provided. On average, according to the data of the respondents, the sensitivity of interest rates to a change in the key rate is less than 100%, due to which this effect consideration lowers the assessment of potential losses (or potential gains) from an interest rate shock by an average of 10%.

An analysis of a change in the term structure of the basic categories of banks' liabilities demonstrates an increase in the volume of short-term liabilities (after a key rate hike) and a contraction in the volume of long-term liabilities. The largest increase is typical for non-bank organisations' short-term deposits: deposits for a term of up to 30 days grew by an average weighted figure of 31% after the key rate rose by 100 basis points. Household deposits, according to banks' information, are more inert: deposits for a term of up to 30 days demonstrated a growth of 3% after the key rate increase by 100 basis points. The decrease in the level of interest rates prompts a change in the term structure of banks' claims but the effect in this case is less expressed. The average weighted volume of claims to organisations for a term of up to 30 days falls by 16% while the term structure of loans provided to households changes insignificantly.

These factors exerted positive influence on the banking sector's net interest income[11] during 2015 and Q1 2016 amid monetary policy easing. As the key rate was cut from 17% to 11%, net interest income kept increasing and amounted to 650 billion rubles in Q1 2016, exceeding the average quarterly level of 2014 (631 billion rubles). The banking sector's gradual transition to the state of structural liquidity surplus will contribute to banks' lower interest expenses.

The analysis of banks on an case-by-case basis shows that the consideration of additional effects in the interest rate assessment exerts significant positive or negative influence on the evaluation of a change in net interest income as a result of an interest rate shock. Therefore, the use of these effects for making analytical assessments of major banks' interest rate risk deems to be expedient. The Bank of Russia also plans to carry out further work for improving the methodology of assessing the interest rate risk for the banking book of credit institutions. The regular monitoring of major banks' interest rate risk through reporting forms and surveys will enable the Bank of Russia to ensure effective coordination of monetary and financial stability policies.

[11] *Net interest income is calculated in accordance with a profit and loss account of credit institutions (reporting form 0409102) taking into account interest income on securities.*

Box 3. The International Experience of Regulating Banks' Interest Rate Risk

An adequate risk assessment and a qualitative risk management system organised at a credit institution are the conditions for achieving the target level of the banking book's interest rate risk. Central banks of most developed countries exercise interest rate risk regulation in compliance with Pillar 2 of the Basel II Framework, issuing recommendations on organising the process of interest rate risk management and assessment and controlling the observance of these guidelines as part of supervisory policies.

The central banks' recommendations on organising the process of interest rate risk management normally include the following principles:

1. The organisational structure of interest rate risk management (the division of functions between the board of directors and the executive body of a bank, independence of the unit responsible for interest rate risk management).

2. The regulatory procedure of interest rate risk management (interest rate risk policy formalisation and its compliance with the goals and the business processes of a bank).

3. The identification and monitoring of interest rate risk (measures to identify all material interest rate risk sources, a careful assessment of new banking products' risks).

4. The assessment and stress testing of interest rate risk (the use of the most widespread models of assessing interest rate risk, including the gap analysis, the duration method, simulation modelling and so on).

5. Interest rate risk management instruments (limits, change in the size of positions that are the source of excessive interest rate risk, hedging).

6. Internal control and reporting (regular independent assessments of efficiency of interest rate risk management processes, the system of reports for regularly informing the board of directors and the management board about the level of interest rate risk).

The Australian Prudential Regulation Authority is one of the few regulators in developed countries exercising interest rate risk regulation within minimum capital requirements under Pillar 1. At the same time, this approach is applied only to those banks, which use the IRB method for calculating risk-weighted assets. Such banks develop their own method of registering the banking book's interest rate risk when they calculate risk-weighted assets and use it after the regulator's approval. It should be noted that pursuant to materials of the Reserve Bank of Australia,[1] no significant capital buffer is required for covering the banking book's interest rate risk as most loans are issued at a floating rate.

In June 2015, the BCBS published a consultative report on interest rate risk,[2] which also offered an approach to covering interest rate risk in the banking portfolio pursuant to Pillar 1. In compliance with it, the required capital charge is computed under a standardised approach, taking into account both the method of assessing an economic value of equity and the method of assessing net interest income at the given level of the interest rate change. The combination of these two methods helps take into account both the short-term and the long-term aspects of a bank's exposure to interest rate risk. This approach offers such advantages as transparency and uniformity, as well as the possibility of the regulator's control.

The amendments proposed by the BCBS have not been implemented to date, in particular, because they have evoked a number of critical remarks from experts and analysts of the world's leading central banks. Specifically, the following faults of the BCBS-offered approach are highlighted:

- the interest rate risk assessment based on the estimation of the economic value of equity has no relation to a bank's actual losses resulting from the interest rate risk materialisation;
- the BCBS' aim to standardise and simplify the approach makes it universal but does not allow taking into account the specifics of banks' activities in various countries and, therefore, may lead to wrong conclusions on the size of the interest rate risk;
- the approach offered by the BCBS creates incentives for banks to cut the investment horizon as long-term investments increase the volatility of future interest earnings and, in compliance with this method, require larger capital buffer.

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[1] Adam Gorajek, Grant Turner. Australian bank capital and the regulatory framework. Reserve Bank of Australia Bulletin. September 2010.

[2] Interest rate risk in the banking book – Basel Committee on Banking Supervision, June 2015 (Consultative document).

The BCBS amended its recommendations on the interest rate risk, considering the critical comments it had received and published a final version in April 2016.[3] The regulation of interest rate risk in the banking book will continue to be exercised under Pillar 2; however, banks will be required to disclose among other information their estimates of a change in the economic value of equity and their estimates of net interest income in case of a change in the interest rate. Also, the regulator has the right to oblige a bank to use a standardised approach to assess the interest rate risk in the banking book, if it believes that the use of the bank's internal model does not allow adequately assessing the risk level.

[3] Interest rate risk in the banking book – Basel Committee on Banking Supervision, April 2016.

3.4. Higher Operational Efficiency of Banks as a Factor of the Recovery of their Financial Position

In 2015, the banking sector went through the period of a considerable decrease in profits (by 3 times as compared with 2014) and many banks found themselves in a grave financial position. Banks had to cut costs and optimise their operational activity to restore their financial sustainability.

The following ratios are used to assess how the banks' operational efficiency has changed:

Cost-to-income ratio shows operating costs in relation to net income[12]; this indicator determines the amount of expenses required for generating a unit of net income;

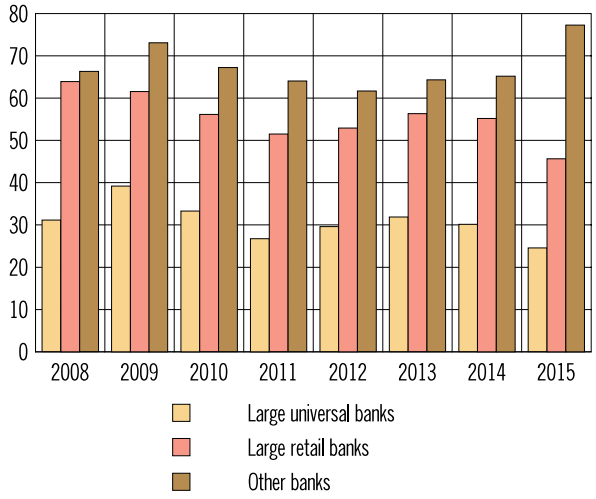
Cost-to-assets ratio shows operating costs in relation to assets (excluding provisions); this indicator determines the amount of expenses required for maintaining the functioning of a unit of assets.

The banking sector's operating efficiency indicators improved in 2015 and their positive dynamics was observed even for separate groups of banks (large universal, large retail and other banks), except for the deterioration of the cost-to-income ratio demonstrated by other banks (Chart 20, Chart 21). At the same time, the absolute level of the banking sector's operating expenses fell insignificantly as a whole (by 7 billion rubles to 1,657 billion rubles) due to cost-cutting measures taken by large retail and small banks (by 21 billion rubles and 34 billion rubles for each group, respectively).

[12] This indicator is used in Bank of Russia Instruction No. 2005-U of April 30, 2008 "On the Assessment of the Economic Position of Banks."

Chart 20

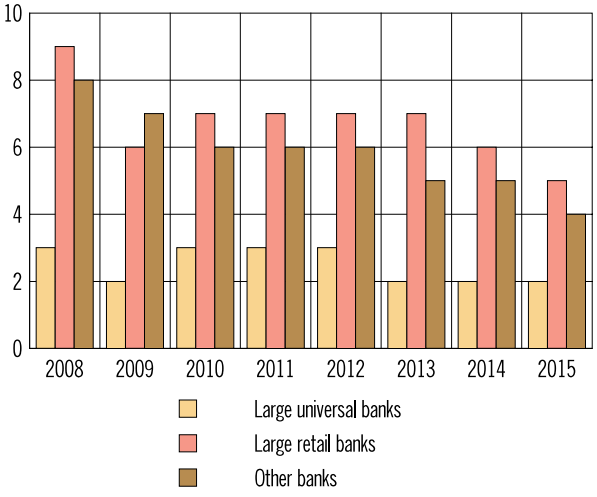
Cost-to-income ratio (%)



Source: Bank of Russia.

Chart 21

Cost-to-assets ratio (%)

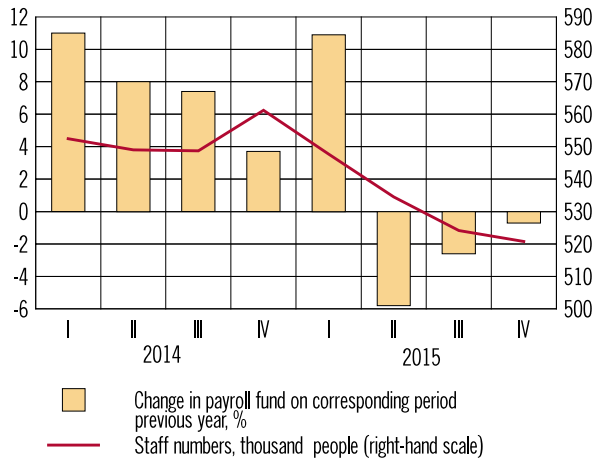


Source: Bank of Russia.

Note: Large universal banks (41 banks) – banks, included in the largest 50 banks by the size of assets (less loan loss provisions), excluding large retail banks.
Large retail banks (20 banks) – banks, specialised in mass standardized products with the volume of unsecured loans more than 10 billion rubles, unsecured loans to assets ratio is higher than 20% and the share of interest rate revenue from loans to households in total interest rate revenue is higher than 35%.
Number of other banks – 683.

Chart 22

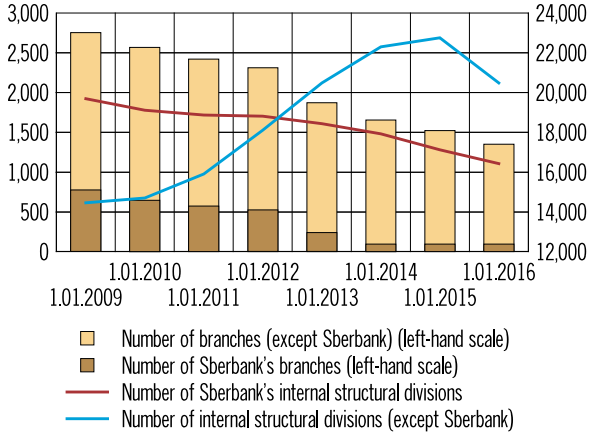
Staff numbers and labour remuneration of 30 largest banks



Sources: issuers' quarterly reports, Bank of Russia calculations.

Chart 23

Number of banks' branches and internal divisions*

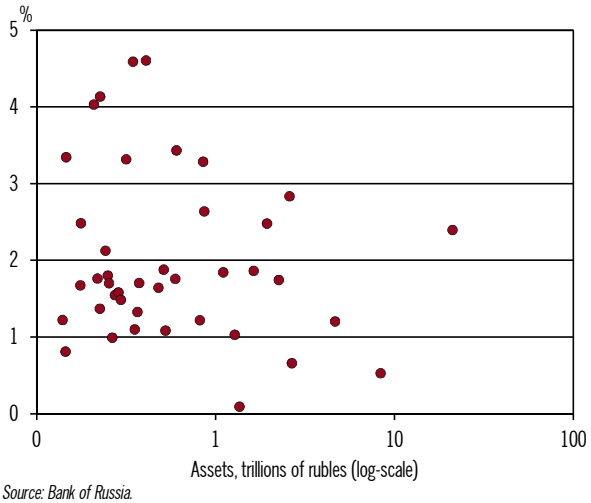


** Credit institutions operating as of April 1, 2016. The closure of branches may be related to their transformation into internal structural divisions.*

Source: Bank of Russia.

Chart 24

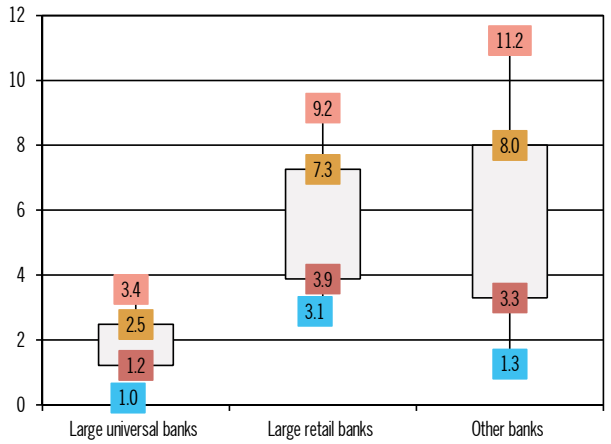
Size of assets and cost efficiency of large universal banks



Source: Bank of Russia.

Chart 25

Banks by the level of costs operating efficiency* (%)



** The values of quantiles are given for 10%, 25%, 75% and 90% distribution of the corresponding group of banks by the level of operating efficiency.*

Source: Bank of Russia.

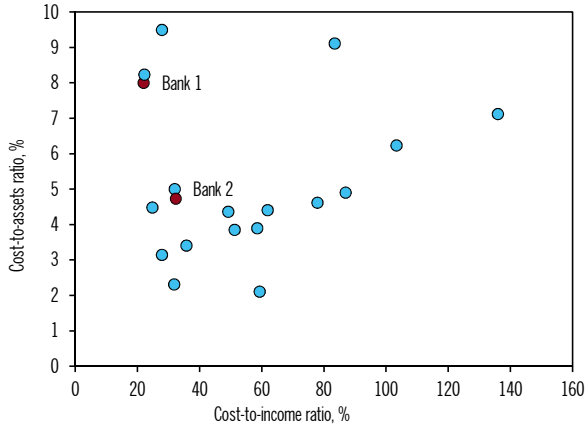
The slower growth in banks' activity, especially in the high risk segments of consumer lending, as well as the increasing broader use of remote access technologies for the provision of services prompted the need to cut personnel, mainly in banks' retail divisions. The average personnel size of the top thirty Russian banks fell by 40,000 employees or by 7% in 2015 (Chart 22). However, banking staff cuts had no effect on payroll expenses. The top thirty banks' payroll fund increased by 1.8% in 2015 from the previous year (Chart 22). At the same time, banks continue implementing international recommendations on labour remuneration (Box 4).

The maintenance of their own networks of branches and divisions, as well as automated self-service systems in the absence of the sufficient volume of operations, considerably reduces the banks' operating efficiency. Quite recently, the retail business development was linked with the opening of new branches and divisions, whereas in 2015 banks with a ramified network of services were closing down ineffective offices and intensifying remote access channels of work with customers (Chart 23). Some retail banks do not have their own network of cash dispensers and use the partner chain of automatic teller machines.

The scope of banks' activities and their specialisation greatly affect the operating efficiency: the level of operational costs is lower for large universal banks than for large retail banks and the group of "other" banks (Chart 20, Chart 21, Chart 22).

Chart 26

Indicators of retail banks' cost efficiency as of January 1, 2016*

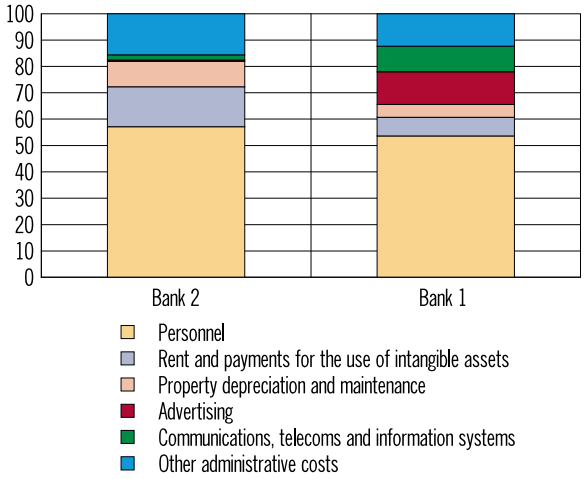


** Bank 1 - a bank with a developed network of branches. Bank 2 - a bank without branches and cash dispensers.*

Source: Bank of Russia.

Chart 27

Structure of expenses on the activities of Bank 1 and Bank 2



Source: Bank of Russia.

It should be noted that the specialisation factor is more relevant for average costs than the scope effect. In particular, a multiple increase in large universal banks' assets is not accompanied by an improvement in their operating efficiency (Chart 25). At the same time, retail banks comparable by the scope (the size of assets) and demonstrating the best cost efficiency indicators correspond to the least effective universal banks (Chart 26), which also confirms higher profitability of corporate business and the high level of overhead costs in the retail banking segment. The difference between the most and the least effective banks inside the groups covered by the analysis shows a potential for the efficiency increase, which can be attributed to the effect of the so-called X-efficiency factors (technologies, personnel and the quality of management) (Chart 25).

Chart 26 shows the efficiency indicators of two retail banks: a bank without physical infrastructure (Bank 1) and a bank with a developed network of branches (Bank 2). By the size of assets, Bank 2 exceeds Bank 1 by four times. Bank 1 demonstrates a quick growth of assets and an improvement of efficiency indicators. Nevertheless, this bank's cost-to-assets ratio is worse than the ratio demonstrated by Bank 2 (Chart 26). The lower expenses on lease and property maintenance for the bank without branches and cash dispensers are offset by the higher expenses on advertising, communications, telecoms and information services (Chart 27).

The introduction of modern technologies in the sphere of communications and internal process automation require considerable expenses. Additional costs arise in the development of digital technologies in the banking sector due to the growth of cyber threats, which potentially can create serious risks for financial stability. As many as 248 Russian banks (as of April 12, 2016) voluntarily submit information on the exposed incidents to the Bank of Russia's Centre for Monitoring and Responding to Computer Attacks in the Credit and Financial Sphere. Banks should plan their actions to ensure their continuous activity in case of the materialisation of operational risks related to cyber frauds and also include such a scenario in stress tests they hold.

The early indicators, including the growth of banks' expenses on labour compensation show that the number of employees in the banking sector is expected to be restored in 2016 and the optimisation of costs through personnel cuts will be completed. Banks will continue optimising operational models and business processes on the basis of new technologies. The introduction of new technologies and the large-scale application of innovative services are affordable, in the first place, for large universal banks due to high costs and the improvement of their efficiency indicators is expected in the long-term perspective.

Box 4. The Implementation of International Labour Remuneration Recommendations by Major Banks

Inadequate personnel remuneration schemes used by major financial institutions were among the factors that caused the global financial crisis of 2008-2009. High profits received in the short run from operations characterised by excessive medium- and long-term risk allowed paying top managers and personnel big bonuses, which failed to consider in full the risks that were assumed. This situation created distorted motivation and didn't contribute to the long-term sustainability of financial organisations.

In 2009, the leaders of the G20 member countries approved the Principles for Sound Compensation Practices and their Implementation Standards developed by the Financial Stability Board (FSB) (hereinafter, the Principles and the Standards). The Principles and the Standards recommend that the compensation pool for personnel within banks and other financial institutions should take into account the risks assumed by the institution. Moreover, such institutions should take into account the full range of risks, and also the time of their possible materialisation.

The larger amount of remuneration should be variable and should depend on the results of the activities (on the basis of individual, business-unit and firm-wide measures).

The timeframe of variable compensation payouts should be consistent with the timing of risk materialisation. It is also recommended that a portion of remuneration should be awarded in financial instruments that stimulate work for the attainment of long-term results (stock options and so on).

After issuing its recommendations, the FSB has been monitoring the compensation practices of financial institutions in its member jurisdictions with the help of a special taskforce.

In 2015, the Bank of Russia Instruction No. 154-I of August 17, 2014 "On the Procedure of Assessing the Remuneration Systems of Credit Institutions and the Procedure of Sending Orders to Credit Institutions to Eliminate Violations Identified in their Remuneration Systems" was introduced in Russia.

In 2015-2016, as part of its work in the FSB, the Bank of Russia carried out an assessment of how the recommendations of the Principles and the Standards were implemented in the remuneration systems of major Russian credit institutions, including the practice of managing the moral hazard risks of the personnel.

The results of the Bank of Russia's study have showed that a number of major banks have been modernising their remuneration systems since 2015 with due account taken of the requirements set by Instruction No. 154-I, including deferral arrangements for variable compensation payable to the senior management and the subsequent adjustment of the deferred payouts depending on the work results that have been achieved. The possibility of clawing back the paid part of remuneration in the event of the firm's negative financial results, which is used in world practice, is absent in the compensation systems of Russian banks. This can be attributed, among other things, to the provisions of the Labour Code of the Russian Federation, which restrict retentions from salaries and wages. The banks that took part in the survey also do not use the mechanism of awarding compensation in equity-linked instruments (the widely spread practice of leading global banks). Also, it is not allowed in Russia to pay wages and salaries in the form of debt instruments.

The survey of major Russian banks held by the Bank of Russia in February-March 2016 has showed that as a whole the banks' compensation payment and risk management systems take into account the need to monitor and prevent the cases of the personnel's misconduct.

Banks cut the size of remuneration following the results of the work over a year and take disciplinary action (including dismissals) as measures to penalise employees breaching the standards of bona fide behaviour.

The mechanisms of adjusting the deferred remuneration are at the stage of development and testing and 2015 is the first reporting year, following which variable compensations may be deferred (normally, for a term of no less than 3 years)

In the estimates of banks, the variable component of compensation should range from 10-15% to 60-80% in the employee's total income, depending on the employee's position, the scope of responsibilities and the role in risk-taking to exert sufficient stimulating influence on decisions taken by personnel on assuming risks and their compliance with the standards of bona fide behaviour.

The procedure of using incentives (or punishment) applied by most surveyed banks at present for bona fide (mala fide) behaviour are oriented towards the short-term perspective. So far, banks have not developed special indicators for assessing the efficiency of labour remuneration systems to ensure the personnel's proper behaviour.

4. SYSTEMIC RISKS OF NON-CREDIT FINANCIAL INSTITUTIONS

4.1. Evaluation of the Financial Position of Major Leasing Companies

According to the estimation of Expert RA rating agency, the leasing portfolio amounted to about 3 trillion rubles as of early 2016, which makes leasing the second major market after the banking sector. Downward trends were observed in the leasing market in 2015: the aggregate market portfolio fell by 4% and the volume of new business declined by 27%. The banking sector and leasing companies are closely connected: companies integrated into banking groups are the major players in the market of leasing services in Russia.

Several types of companies are operating in the leasing market:

- lessors affiliated with the largest banking groups that are financed mainly through bank loans at reduced interest rates;
- state-affiliated structures;
- independent leasing companies with diversified sources of financing, including bonds, external borrowings and bank loans. Independent leasing companies specialise in small and medium enterprises (SME) and auto-leasing;
- captive companies of large producers of various types of transport means, as well as industrial and construction machinery.

The consolidated financial statements of major non-financial companies available as of the latest reporting date show that 87 largest companies account for 468 billion rubles of obligations under financial leasing and 1 trillion rubles of obligations under operating lease.[1] Therefore, the largest non-financial firms make up about 50% of the aggregate leasing portfolio. The operating lease portfolio exceeds the financial lease book as many companies switched from financial to operating lease in 2015 as part of their cost optimisation strategies.[2] Besides, the aviation industry makes up over 50% of the operating lease portfolio of major non-financial companies. For leasing companies, the switch from financial to operating lease offers certain benefits in the short-term perspective as airlines make monthly remittances to leasing companies for maintenance services, apart from lease payments (under financial leasing, maintenance and repairs are carried out by airlines themselves). As these flows of funds are spent in case of the need for repairs or planned maintenance rather than immediately, leasing companies receive additional financial resources in their turnover. However, in the long-term perspective, companies will have to considerably improve the system of managing their customer network. The processes of forecasting and managing the cost of an aircraft and the procedures of a technical audit of the available airliner fleet should also be seriously modified.

The share of financial lease obligations in the total liabilities of separate non-financial firms may range from 20% to 40%. Also, non-financial organisations have quite a substantial ratio of operating lease obligations to their total liabilities[3]: this figure ranges from 15% to 50% and in some cases may also exceed 100%.

[1] *Financial lease stipulates the lessee's payments during the term of the lease contract comprising the sums that cover fully the depreciation cost of property or its larger part, and also the lessor's profits.*
Operating lease is signed for a term shorter than the asset's depreciation period. After the expiry of the lease contract, the asset is returned to the owner or is leased out again.

[2] *In the current economic conditions, certain difficulties exist in forecasting the dynamics of the growth/decline in the volume of passenger traffic, the change in the demand for various types of carriages and the popularity of particular destinations.*
Operating lease offers a possibility to take aircraft on lease for a shorter period and promptly change them for more appropriate airliners upon changes in the market of air carriages. Besides, it considerably reduces the investment threshold for expanding the fleet of aircraft and developing new destinations as no considerable advance payments are required in this case.

[3] *Operating lease obligations (future minimal amounts of lease payments under operating lease contracts not subject to cancellation) are disclosed in financial statements but are not registered in total liabilities on the balance sheet of companies.*

Table 3

Descriptive statistics for the panel sampling of leasing companies as of January 1, 2016

Characteristic	Leasing portfolio, mln rbls	Own funds (equity)/ portfolio, %	Reserves / portfolio, %	(Volume of unserviced lease agreements with overdue payments of over 90 days)/ portfolio, %	Restructurings/ portfolio, %
Average value	68,137	19.31	1.99	6.12	3.16
Median value	12,963	5.44	1.09	0.66	0.52
Maximum value	707,691	104.25	8.87	65.52	16.09
Minimum value	454	-1.91	0.00	0.00	0.00

Transport, power engineering and machinery account for most of financial lease obligations (54%, 19% and 11%, respectively). More than half of operating lease obligations is concentrated in the transportation equipment (65%); the oil and gas sector and power engineering also make up a substantial share of operating lease obligations.

In Q1 2016, the Bank of Russia held a study of the leasing market based on the survey of leasing companies. During the study, a questionnaire was developed to take into account the basic indicators of the market players' activity that are absent in official sources of data for the majority of companies.[4] Companies were selected for the study by the size of their leasing portfolio. The sample was based on the data of the Federal Financial Monitoring Service (Rosfinmonitoring) and Expert RA rating agency, which helped draw up a list of 50 major companies. Of this number, 26 companies responded to the Bank of Russia's inquiry to disclose information and the questionnaires received covered about 60% of the estimated value of the leasing market.[5] Most of the respondents avoided submitting information. Therefore, the sector remains to be non-transparent. More than half of the companies that have participated in the survey by now belong to banking groups or are affiliated with a bank or a banking group.

The aggregate market portfolio (the residual value of lease payments excluding VAT) contracted by 4% as of January 1, 2016 from early 2015. Railway and air transportation equipment continue to hold leading positions in the total leasing portfolio (39% and 28%, respectively).

New business (all lease agreements concluded (signed) in the period under review) fell by 27% in 2015 and the number of agreements concluded over this period decreased by 28% (including the number of agreements concluded in US dollars, which shrank actually by 10 times). The new business structure is dominated by the agreements on the lease of railway equipment (32%) and air transportation equipment (20%), as well as cars and freight transport (19% each). In the estimates of representatives of the leasing industry, aircraft leasing is the only major segment that demonstrated growth in 2015 amid contraction in the volume of new business as a whole. The positive dynamics of this sector can be attributed to the government's policy of subsidising the Russian producers of airliners (in particular, the Sukhoi Superjet 100 programme).

55% of the companies participated in the survey submit IFRS statements and 45% provide data under Russian Accounting Standards (RAS). The companies submitting RAS statements normally have no possibility to compile data required to assess the ratios of assets and liabilities by maturity and make conclusions on liquidity adequacy, which may indirectly testify to the insufficiently organised system of risk assessment in these companies. A conclusion can be made from the obtained data that large companies may experience some shortfall of assets to cover liabilities in the medium-term perspective (from 1 to 5 years): the medium-term assets/liabilities ratios of some companies make up from 50% to 76%.

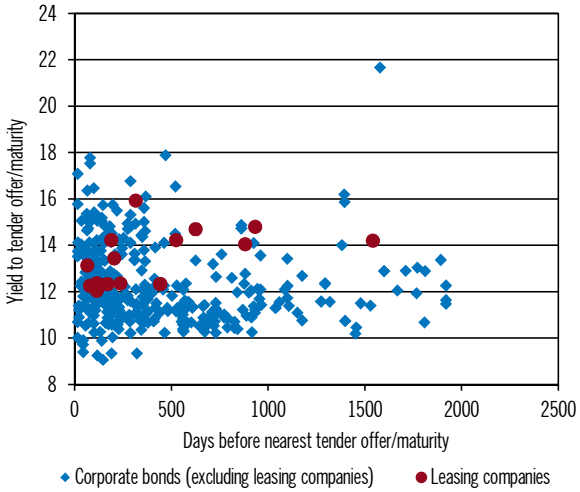
According to the data of the surveyed companies, the volume of restructuring in the lease

[4] *The size of the leasing portfolio, the amount of provisions created by companies, the maturity of assets and liabilities, the existence of considerable debt to non-residents and the respective covenants, and also information on major counterparties of leasing companies.*

[5] *The market size is determined by the aggregate value of the leasing portfolio.*

Chart 28

Yield to maturity of the bonds of leasing and other companies



market grew considerably in 2015 compared with 2014 (from 2.5 billion rubles to 47.5 billion rubles).

The volume of unserviced agreements[6] increased from 0.2 billion rubles to 44.5 billion rubles (4% of the total leasing portfolio), which was mainly prompted by the bankruptcy of Transaero airline.

The volume of provisions created for possible losses, nevertheless, slightly contracted, which may suggest that leasing companies are delaying the creation of such provisions. At the same time, companies are pursuing active policies for the withdrawal of leased property – the volume of assets sold in 2015 increased by 30% (51 billion rubles) compared with 2014.

The amount of payments overdue for 90 days and more (NPL 90+) relative to the size of the leasing portfolio fell by 0.5 percentage points in 2015 from 2014 (from 1.77% to 1.28%), which was prompted by the reduction in the amount of overdue payments by 31%.

The analysis of information received individually from each company shows that the share of provisions in the leasing portfolio of a particular company grows slower than the share of overdue debt. Also, in some instances, overdue debt grew considerably in 2015 compared with 2014 (to 17.6 percentage points) in case of the contraction of provisions relative to the portfolio or the insignificant growth of this indicator. Overdue debt are basically growing in such segments as the lease of construction and road construction machinery, commercial vehicles and cars.

As a whole, large companies (relative to the average size of a company operating in this segment) that are characterised by the considerable concentration of SMEs in their leasing portfolio did not register a considerable increase in overdue debt in their portfolios.

The concentration of basic lessees in the leasing portfolio differs considerably: the concentration of the leasing portfolio of the largest players – market leaders on a major lessee may reach from 20% to 45%. Normally, large companies that are market leaders in their segment (Aeroflot, RZD, Freight One and others) are the main lessees of such leasing companies. The portfolio diversification of smaller companies is considerably higher, i.e. the concentration of the leasing portfolio on a lessee normally does not exceed 10%.[7]

About a half of all the companies that submitted data for the study have high concentration of SMEs both in the current leasing portfolio (from 23% to 100%) and in the volume of new business (from 50% to 100%). The share of SMEs in the portfolio of the largest leasing companies is either insignificant (less than 10%) or is equal to zero. However, some companies demonstrated a growth in the share of SMEs in the volume of new business (in the total volume in percentage terms compared with the SME proportion in the current leasing portfolio).

An overwhelming majority of companies registered an increase in the average weighted cost of borrowings (loans and bonds) in 2015. The average weighted rate on bank loans varies between 11% and 15% for companies outside banking groups and between about 7% and 9% for companies funded through parent banks. The bond rate stands at the level of 12-14.5% and exceeds the level of comparable companies by 200 basis points (Chart 28). Therefore, the increased cost of funding for leasing companies may lead to the higher cost of assets provided for lease.

[6] *It is calculated as the value of property transferred for lease under lease agreements that were not cancelled, under which there are overdue payments for the continuous period of more than 90 days (the term, for which payments were delayed, is determined by the FIFO method).*

[7] *Therefore, the concentration of the portfolio of the largest lessors from among market leaders on 10 major lessees may equal from 70% to 80%. The portfolio of medium-size independent companies consists of smaller agreements and the concentration of the portfolio on 10 major lessees may stand at about 10% (with the minimum observed level of 2%).*

Conclusions

According to the data of the survey of leasing companies conducted by the Bank of Russia in 2015, the volume of restructurings in the market grew considerably while the amount of provisions created for possible losses contracted and the volume of assets sold during this period increased (by 30% as compared with 2014). The study has also shown that the leasing market is non-transparent: only half of the respondents prepare IFRS statements, which allow analysing the leasing portfolio more qualitatively. The absence of information may make the cost of borrowings for leasing companies higher than for other borrowers with the comparable credit rating. Close interrelation of leasing companies with banks and NPFs is a source of systemic risk, which may cause the effect of "contagion," if financial difficulties arise for one or several large lessors.

Box 5. International experience in leasing market regulation

According to White Clarke Group Global Leasing Report (2016), Russia is placed 11th in the world by the volume of leasing business and is second among emerging market economies (after China).

Mandatory licensing and regulation of leasing activity has been established in most countries with the well-developed leasing market (except for Canada and Japan). At the same time, mandatory licensing or registration with regulatory authorities is required only for certain types of leasing in some countries.

Generally, the complexity of regulation depends on the market structure: regulation involves the larger scope in the countries where leasing companies largely belong to banks (Italy, France and China). The market is less regulated in the countries where captive leasing companies owned by large leasing equipment producers are widely spread (Germany and the United States).

Leasing activity is normally regulated by the central bank or another prudential regulation authority responsible for the regulation of financial companies. For example, leasing companies in Italy fall under the jurisdiction of the Bank of Italy as "other financial intermediaries" and in France such entities in 2013 have been included into the group of "finance companies" (they were earlier regulated as credit institutions) and are accountable to the Bank of France's Prudential Supervision and Resolution Agency (ACPR). In China, the largest leasing companies integrated into banking groups are regulated by the China Banking Regulatory Commission (CBRC) while the leasing companies outside banking groups are regulated by the Ministry of Commerce (a separate regime of regulation is effective for such entities).

Licensing companies in the countries with a high share of retail leasing (the United States, the United Kingdom) are regulated by the agencies responsible for the protection of consumer rights. Leasing for a term of over 3 months in the UK falls under the definition of consumer lending and this activity is supervised by the Financial Conduct Authority (FCA). In the United States, companies operating in the sphere of consumer leasing (with the value of lease assets of up to $50,000) are supervised by the Consumer Financial Protection Bureau. At the same time, banks can carry out leasing activity without the need to obtain additional licenses (they are supervised by the Office of the Comptroller of the Currency). In Australia, companies engaged in retail financial leasing are required to obtain a license from the Australian Securities and Investments Commission. In Germany, regulation and supervision of financial leasing is exercised by the Federal Financial Supervisory Authority (BaFin).

In most countries, leasing companies are subject to prudential requirements, which, however, are less strict than the requirements for banks. Limits exist on the minimum regulatory capital: 125,000 euros or 730,000 euros (depends on the involvement in financial instruments transactions) in Germany, 250,000 euros in Italy, 1.1 million euros in France, $15 million for companies regulated by the CBRC in China. In China, France and Italy limits exist on capital adequacy ratios similar to the Basel standards for banking regulation (8%). In Italy, there is also a 5% limit on the maximum leverage. Apart from this, limits are placed on the concentration per borrower (normally, up to 25-30% of capital) and the group of related borrowers (up to 40-60% of capital). In some cases, liquidity ratios are applied (for example, in France).

As for funding, leasing companies are normally prohibited to attract household deposits: in most countries such companies actively use market financing. As they raise funds in the market, leasing companies are obliged to comply with the requirements of market regulators (such as the Securities and Exchange Commission in the United States), for example the requirement to retain part of the risk in securitisation.

4.2. NPF Investment Risks

In 2015, the period for NPFs to submit documents for inclusion in the system of guaranteeing the rights of insured persons came to an end,[8] and also the term expired, during which citizens could opt for transferring 6% of social security tax deductions to the NPFs for the funded part of their pensions. The influence of investment risks on the financial sustainability of NPFs will increase in new conditions of the pension market while the quality of the risk management system, investment policy and the policy of attracting clients will acquire considerably larger significance for NPFs.

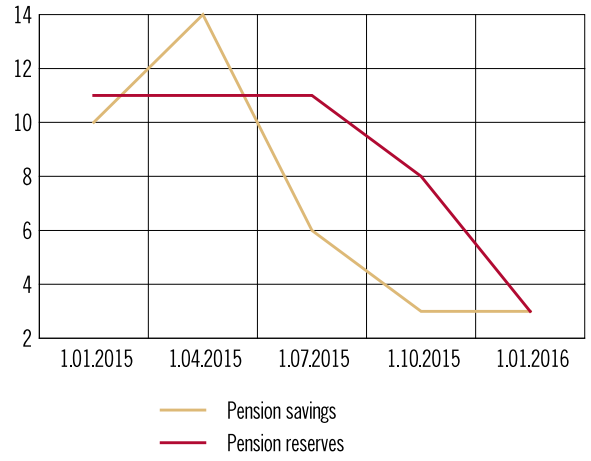
Yields offered by NPFs will continue to exert considerable influence on the choice of citizens in favour of a particular fund. In 2015, NPFs' returns on pension savings amounted to 10.8% and their returns on pension reserves stood at 7.7%, which is lower than inflation by 2.1% and 5.2%, respectively. Also, the share of NPFs with yields below inflation rose from 39% to 66% for the portfolio of pension savings and from 46% to 78% for the portfolio of pension reserves in Q4 2015 (Chart 30).

From the standpoint of financial stability, credit risk still remains a key investment risk for NPFs. At the same time, a trend towards the decrease of credit risk in the pension savings portfolio of NPFs was observed in the second half of 2015. Thus, the share of unrated assets fell by 2 percentage points in the second half of 2015 to 13%. The share of assets with credit ratings[9] higher than Ba3 increased by 5 percentage points to 72%.

Therefore, potential estimated losses in the time horizon of 5 years as a result of credit risk materialisation[10] fell by 1 percentage point to 12% of the portfolio of pension savings; the credit risk/capital ratio[11] and the Funding ratio[12] improved.

Chart 29

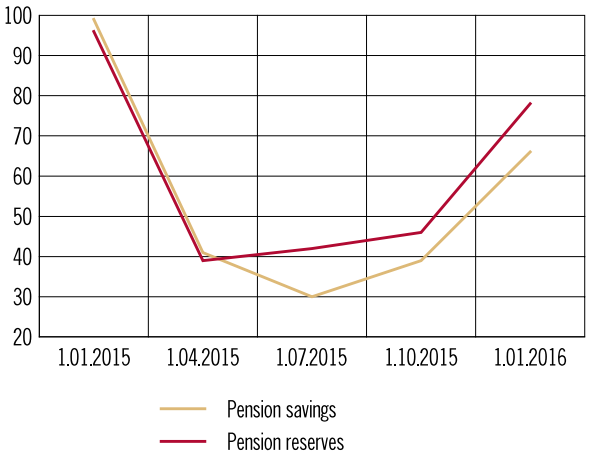
Share of NPFs with negative returns (%)



Source: Bank of Russia.

Chart 30

Share of NPFs with returns below inflation (%)



Source: Bank of Russia.

Credit risks for the pension reserves portfolio[13] of NPFs are higher, which can be explained by the less tight requirements for the funds' investment declaration for this type of activity. As of December 31, 2015, potential estimated losses within a horizon of 5 years resulting from credit risk materialisation amounted to 17% in NPFs included in the list of the top 20 funds by the size of pension reserves. The share of unrated assets equalled 50%. The share of assets with credit ratings higher than Ba3 totalled 36%.

The impact of market risks on NPFs is smoothed over due to the long-term nature of the funds' assets and liabilities. The market risk assessment of the NPF portfolio of pension savings and reserves

[8] *As of March 31, 2016, the guarantee system comprised 36 NPFs, which account for 97% of NPFs' total pension savings.*

[9] *Hereinafter, ratings are quoted on the scale of Moody's, taking into account the conversion of the ratings of other credit rating agencies into this scale (in compliance with the comparison scale).*

[10] *Potential estimated losses are determined on the basis of the default matrix of credit rating agencies and, in the absence of ratings, by the expert method depending on the class of assets.*

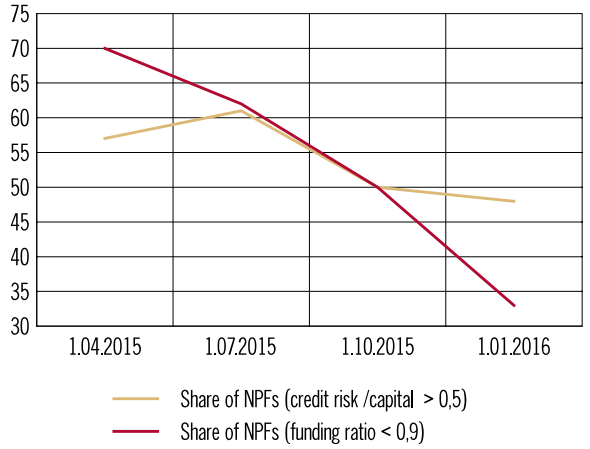
[11] *The credit risk/capital ratio is calculated as the ratio of potential estimated losses resulting from credit risk materialisation over 5-year horizon to the NPF's capital.*

[12] *The Funding ratio is calculated as the ratio of the fund's assets adjusted for potential estimated losses resulting from materialisation of credit risks within a horizon of 1 year and 5 years to liabilities brought to the current value.*

[13] *The estimate was held for the top 20 NPFs by the size of the portfolio of pension reserves.*

Chart 31

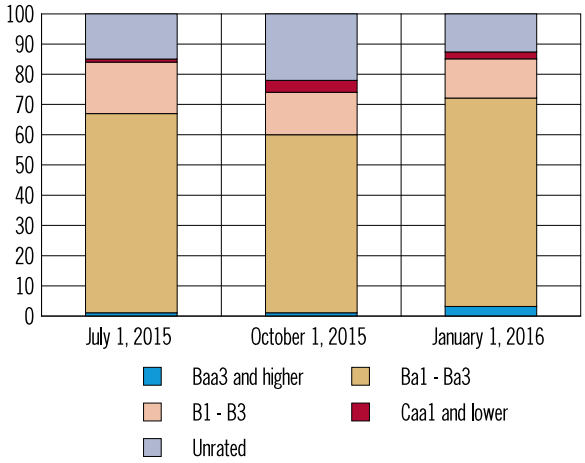
Credit risk indicators for pension savings portfolio of NPFs included in the guarantee system (%)



Source: Bank of Russia.

Chart 32

Change of credit ratings in the pension savings portfolio of NPFs included in the guarantee system (%)



Source: Bank of Russia.

was based on CVaR calculated for 30 days, using historical data for a 10-year period and a confidence level of 99%. The analysis showed an increase in the market risks of the aggregate pension savings portfolio of NPFs by 2 percentage points over the latest six months. Potential estimated losses from market risk materialisation within a horizon of 30 days may equal -9% on pension savings and -5% on pension reserves.

Insured persons' transfer campaigns among NPFs and from the NPF to the PFR constitute a key source of liquidity risks for the funds before the start of the period of mass pension payouts. Following the results of the 2015 campaign, 4.09 million people switched from the PFR to NPFs while 149,100 persons switched back to the PFR. As a result, 259 billion rubles will be transferred to NPFs from the PFR. The number of insured persons who decided to switch from one NPF to another NPF totalled 3.14 million people with the aggregate amount of pension savings of 199 billion rubles[14]. The share of liquid assets in the aggregate pension savings portfolio of NPFs equals 12% (201 billion rubles as of December 31, 2015), which is an acceptable level for transfer campaigns among the NPFs, considering an inflow of funds from the PFR.

In 2016, NPFs will receive the last large tranche of the pension money of citizens who opted before the end of 2015 for the funded scheme of pension accrual. In 2017, the pension savings portfolio of NPFs can increase through investment income and also through the pension resources attracted from the PFR and belonging to citizens who have their funded pension component managed by a state management company and persons for whom the accrual of insurance contributions for compulsory pension provision started for the first time after January 1, 2014.

[14] *This indicator is calculated as the number of switches among NPFs multiplied by the average size of the savings account of insured persons (63,400 rubles).*

Box 6. International experience of NPF stress testing

The period of 2012-2015 witnessed the development of the practice of the pension sector's stress testing as an element of the analysis of the financial market's systemic risks. The stress testing of pension funds has been increasingly frequently included in the IMF's Financial Sector Assessment Programs (FSAP) (the FSAP reports on Denmark for 2014, South Africa and Norway for 2015). As part of FSAP programmes, the financial sustainability of pension funds is analysed within a horizon of 5 years with the use of negative macroeconomic scenarios.

The development of common approaches to the stress testing of pension funds is complicated by differences in pension systems: Defined Benefit (DB) pension schemes, Defined Contribution (DC) pension plans, hybrid schemes (HS) combining the elements of defined contribution and defined benefit pension plans. The stress testing of DB funds is frequently based on the funding ratio: the level of covering liabilities brought to the current value with assets adjusted for risk. In some countries, the Solvency II model for insurance companies is used as the model for stress testing of DB pension funds, i.e. the size of the required capital is the subject matter of the analysis. Considerable difficulties are encountered in the stress testing of DC funds with variable pension payments to determine the subject matter of the analysis as the scheme's balance is always in equilibrium. In this case, the final goal of the pension funds' activity – to provide minimum income for insured persons through pension payments – is taken into account and the ratio of lost earnings substitution with pensions is calculated.

In 2015, the first programme of stress testing for European pension funds based on the European Insurance and Occupational Pensions Authority (EIOPA) was launched. EIOPA developed the method of stress testing for DC and DB funds from 17 European countries. As its distinctive feature, the EIOPA approach focuses on assessing the impact of market shocks on the financial position of pension funds. A report on the stress testing results was published in January 2016. For DB pension funds, the analysis focused on the financial sustainability of funds under the impact of two unfavourable scenarios of market changes and the scenario of the increase of life expectancy. For DC pension schemes, the analysis dealt with changes in the ratio of lost earnings substitution with pension under the impact of four types of stress scenarios: the baseline scenario, the short-term unfavourable scenario of a change in the price of assets, the long-term scenario of low yields and the scenario of the increase of life expectancy.

The EIOPA study showed that the pension obligations of DB/HS funds exceeded their assets by 76 billion euros[1] already before the stress scenarios were used. The stress testing of DC funds was held for various age categories of the pension scheme participants. The results of the estimates showed that participants of the pre-pension age are more sensitive to the scenarios of a sharp fall in the prices of assets whereas the scenarios of the lengthy periods of low yields are more significant for young respondents. The stress testing also analysed the efficiency of possible measures to mitigate negative effects: delaying the retirement and increasing contributions to savings accounts.

Separately, the stress testing of the financial sustainability of organisations guaranteeing payments under pension schemes is held. In particular, the stress testing is carried out by the UK Pension Protection Fund (PPF). In its report for 2014-2015, the PPF describes the scenarios and the results of stress testing for market, credit and liquidity risks. Also, reverse stress tests are widely used to determine the conditions of the financial insolvency of guarantee funds.

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[1] Based on the accounting data compiled pursuant to the national standards of the countries covered by the study. After the national reports were adjusted under the EIOPA methodology for the purposes of comparison, the deficit of assets relative to the funds' obligations totalled 428 billion euros.

Box 7. Analysis of the market of mortgage participation certificates

The market of mortgage participation certificates (MPC) expanded almost twofold in 2015 from 2014 to 138.5 billion rubles.[1] Complexities with the proper assessment of the collateral for this financial instrument and its low liquidity make the MPC an instrument with the increased risk level. As compared to mortgage bonds where excessive mortgage risks are mostly concentrated on the originator bank, the MPC risks are spread among MPC holders. According to data as of December 31, 2015, the MPCs were basically held by non-government pension funds, which accounted for 67% of the aggregate value of the mortgage collateral for all MPCs (92.7 billion rubles)[2] while 17% of them belonged to banks (23.1 billion rubles) and 4% were owned by insurance companies (6.0 billion rubles).

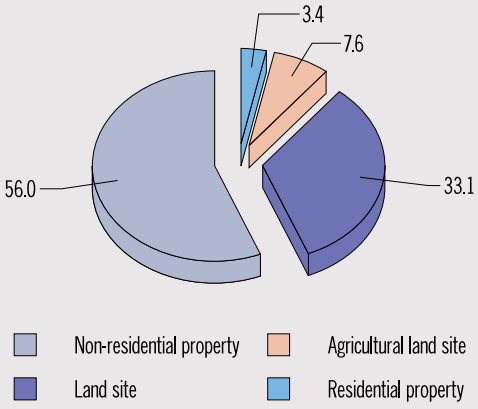
As compared to mortgage bonds, the MPC mortgage collateral frequently includes one or several mortgages of large real estate properties rather than a pool of homogeneous loans. Thus, according to data as of December 31, 2015, non-residential property accounted for 56% of the assets in the MPC collateral while land sites made up 41%. Amid the absence of the efficient non-residential property market and land sites, MPC material risks are linked to the quality of their value assessment. Also, the MPC as an instrument bears inherent credit risks with regard to possible delayed payments and defaults under mortgages included in the mortgage collateral. Overdue debt on the principal amounted to only 0.4% of the outstanding principal as of December 31, 2015. However, the share of overdue debt is low partly because the term of payments for 31% of MPC claims has not yet come due.

The problem of determining the fair value of MPCs is complicated by the low liquidity of this instrument. Overall, 19 out of 32 MPC issues were admitted for trading on the Moscow Exchange while transactions were conducted on 17 issues. The average daily volume of trade in certificates in the period from June 6, 2013[3] to December 31, 2015 totalled 290 million rubles. This situation limits the possibilities for MPC holders to sell these securities on the organised market within a short period and get expected yields.

Fixed interest rates and the long maturities of loans in the MPC collateral make this instrument subject to interest rate risk. As of December 31, 2015, loans with redemption terms of over 5 years accounted for 48% of the principal while fixed-rate obligations made up 77% of the MPC aggregate principal. After the Bank of Russia raised its key rate in December 2014, the average fixed rate on loan claims in the MPC mortgage collateral increased by 2 percentage

Chart 33

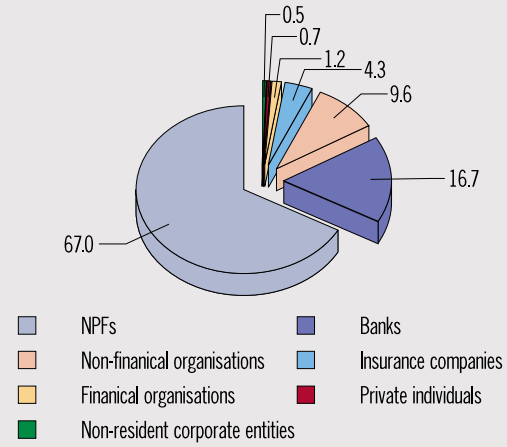
Assets included in MPC mortgage collateral, as of December 31, 2015 (%)



Source: Bank of Russia.

Chart 34

Structure of MPC holders as of December 31, 2015 (%)



Source: Bank of Russia.

[1] *Overall, 32 issues of mortgage participation certificates were made as of the end of 2015. The largest MPC issue originated in June 2015 accounts for 17% of the market (23.2 billion rubles).*

[2] *Taking into account NPFs, which had their licenses revoked. Their investments in MPCs totalled 19.3 billion rubles.*

[3] *The date of the first transaction with the MPC on the Moscow Exchange.*

points to 13% and also claims appeared under loan agreements with floating interest rates pegged to the Bank of Russia key rate.

For the purpose of limiting risks associated with investing NPFs' funds in MPCs, the Bank of Russia adopted an instruction on making amendments to Bank of Russia Regulation No. 451P of December 25, 2014,[4] under which the cap on the share of MPCs in the pension savings portfolio of NPFs will drop from 40% to 10% and additional requirements will be set to valuators and the structure of the MPC mortgage collateral. The Bank of Russia is also developing additional limits on investing the insurance reserves of insurance companies in MPCs.

[4] As of May 20, 2016, the document was at the stage of state registration with the Ministry of Justice of the Russian Federation.

4.3. Insurance organisations' risks

The increase of OSAGO tariffs and the high level of interest rates in 2015 supported the financial sustainability of insurance companies. The share of capital attributed to the insurance companies experiencing problems with capital adequacy and profitability continued its downward trend (Chart 35) while aggregate net profit totalled 95.1 billion rubles[15]. Amid the decrease or stagnation of proceeds from the basic voluntary types of insurance and the lower returns on deposits, which fell from early 2015, the intensive growth of OSAGO payments will probably continue (according to the preliminary data of the Russian Union of Auto Insurers, this growth totalled 28%). As a result, the financial results of insurance companies may deteriorate in 2016.

Insurance business showed mixed results in 2015: while the average market combined loss ratio declined, its median value continued to grow throughout the year and reached 106% (Chart 36). This process was more intensive for the companies already characterised by the high loss ratio.

Insurance companies also continue to note the high pressure exerted on their financial results by the consequences of insurance fraud and the judicial practice towards them. In turn, consumers in some regions continue to experience the problem of acquiring OSAGO policies. For the purposes of ensuring the accessibility of this service, the Bank of Russia plans to introduce an obligation for OSAGO insurers from January 1, 2017 to sell electronic policies.

[15] The accounting data for 2015 do not include the data of reorganised insurance companies.

For the purposes of the preventive assessment of the insurers' financial sustainability, the Bank of Russia continued the practice of insurance companies' top-down stress testing for the impact of macroeconomic and credit risks, with all active companies included into its framework.[16]

The testing results show that in case of the risky macro-scenario, capital deficit may emerge for 33 companies while its aggregate volume may reach 18.3 billion rubles as of the end of 2016. Given the persistence of the current organisational models, the capital deficit of 13 organisations will exceed 50% of their equity.

Relative to the previous test based on the data as of June 30, 2015, the level of insurers' credit risk slightly decreased, which was also due to the exit of companies with the low quality of assets from the market. The Bank of Russia continues its work to check the quality of insurance companies' assets, including efforts to expose "fictitious" assets.

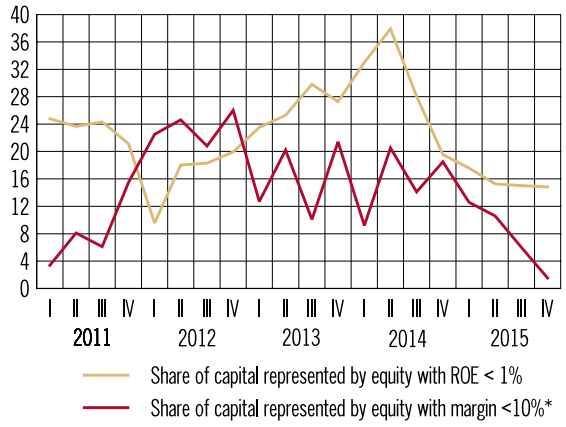
As of December 31, 2015, the share of premium quality assets with credit ratings of Baa3[17] or higher accounted for 26.9% of the insurers' total assets whereas the share of assets rated B2 and lower didn't exceed 9%. The total share of unrated assets was 26%, including 18% of accounts receivable (Chart 37). The share of unrated assets of 50% and more was typical for 59 insurers whose proportion in the aggregate insurance premiums didn't exceed 2.3%.

[16] The stress testing methodology is given in the Financial Stability Review for 2015 Q2-3. The current calculations cover 235 insurers for credit risk assessment and 179 insurers specialising in insurance other than life insurance for the estimation of macroeconomic risk.

[17] Hereinafter ratings are quoted on the scale of Moody`s Investors Service.

Chart 35

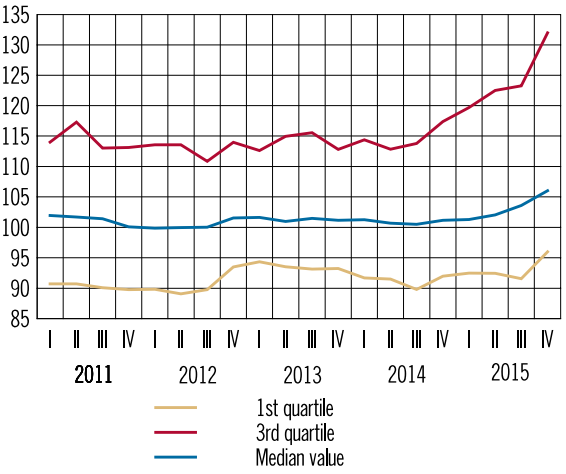
Share of capital of insurers with the low return on equity and small solvency margin (%)



* Before Q3 2015: less than 40%.
Source: Bank of Russia calculations.

Chart 36

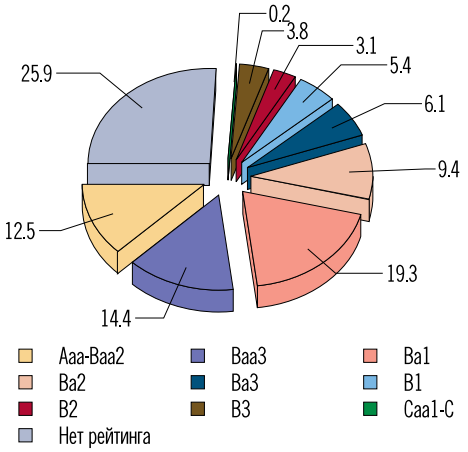
Combined loss ratio of insurers in 2011-2015 (%)



Source: Bank of Russia calculations.

Chart 37

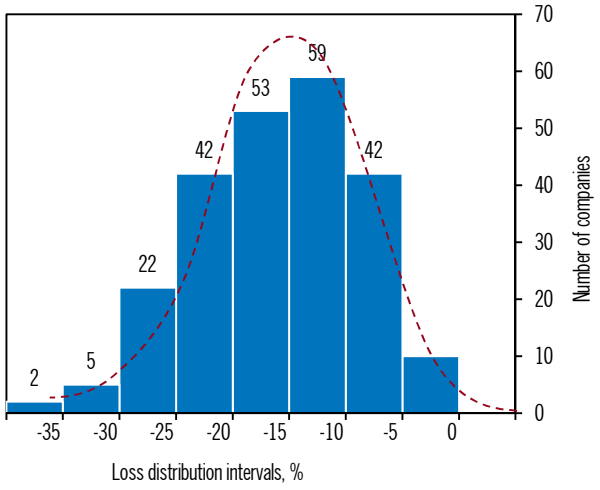
Asset structure of insurers by credit ratings as of December 31, 2015 (%)



Source: Bank of Russia calculations.

Chart 38

Insurers by potential losses over 5-year horizon (credit risk)



Source: Bank of Russia calculations.

As a whole, total potential losses for all insurers are unlikely to exceed 2.1% of their assets within 1 year and 13.1% of their assets over a 5 year-horizon. At the same time, the level of credit risk for separate companies differed considerably: the amount of estimated losses over a 5 year-horizon varied from 2.6% to 49.3%. Estimated losses for most insurers within the 5 year-horizon stayed within 21% of their assets (Chart 38). At the same time, market players have a high capacity to absorb losses: only five companies from among insurers covered by the analysis had the ratio of estimated loss to equity exceeding 30% within one year.

For the purpose of early risk identification, in January 2016 the Bank of Russia established its procedure for monitoring the insurers' activity. The procedure defines the list of their financial indicators that will be assessed on a quarterly basis. The Bank of Russia is also developing a procedure for determining supervisory regimes to stipulate various intensity of its actions, depending on the extent of the deviation of insurers' financial indicators from the established threshold ratios.

The Bank of Russia's regulations on statistical reports and reporting for supervisory purposes that came into effect also helped broaden the possibilities for the analysis of insurers' risks. This process will be further developed in 2017 after insurers switch to a new plan of accounts and sectoral accounting standards based on IFRS.

Box 8. Stress testing of insurance companies

In light of persisting high risks of the sector's functioning, it is becoming especially important to use various instruments for their assessment, including the practice of regular stress testing. As many as 14 companies from among the insurers participating in the Bank of Russia survey (21 insurers with the aggregate share of 65% from insurance premiums in 2015) confirmed conducting stress testing or plans to organise stress tests in the short-term perspective.

In their policies to respond to the increased inflationary risks in 2015, the contracting demand in the voluntary types of insurance and the changing behavioural patterns of insurance policyholders, the largest number of insurance companies carry out operational monitoring of insurance risk (i.e. the risk of insufficient insurance reserves and tariffs) and liquidity risk and additionally test the risks of macroeconomic and exchange rate shocks.

As a whole, insurers have received positive results of stress testing (the negative return on equity is expected only in single cases), despite the use of quite tight macro-scenarios. At the same time, this situation can be interpreted ambiguously: both as evidence of the sustainable position of insurers and as the signs of possible gaps in their stress testing models.

Despite intensified insurance fraud (the surveyed participants recognised it as the most serious problem), the testing of operational risk is spread to a somewhat lesser extent. Also, the lesser number of companies conduct the testing of credit risk, which is a negative sign in light of the continued practice of license revocation from credit institutions and the increased probability of defaults on bonds in the challenging economic situation.

The Bank of Russia supports the insurers' initiatives for developing risk management practices and plans to develop the relevant recommendations, including for stress testing.

Table 4

Survey of stress testing in polled insurance companies

Key risks	Number of insurers using stress testing	Assessment periodicity	Forecasting horizon
Insurance risk	10	month-year	quarter - year (several years for life insurers)
Macroeconomic risk	9	quarter-year	year (2 or 3 years in some cases)
Exchange rate risk	9	quarter	year
Liquidity risk	9	no less than a quarter	quarter - year (not more than 1 month in some cases)
Operational risk	8	no less than a quarter	year and less
Credit risk	7	week-month	year and less
Market risk, except exchange rate risk	6	year or promptly (no less than a quarter)	quarter-year

Note. The Bank of Russia supports the insurers' initiatives for developing risk management and plans to work out relevant recommendations, including for stress testing.

4.4. Shadow banking structure and risks

The concept of shadow banking was developed after the global financial crisis of 2008, which exposed high systemic risks in the activity of shadow banking entities in developed countries. According to the Financial Stability Board (FSB), shadow banking is broadly defined as non-bank credit intermediation involving entities and activities outside the regular banking sector.

The main risks imposed by shadow banking entities are maturities and liquidity transformation arising from reliance on short-term funding that is invested in long-term/illiquid assets, imperfect risk transferring and/or leverage. Shadow banking risks may spillover to the banking sector through two channels of contagion: the shadow banking funding channel and the channel of bank funding risks from funds accumulated and provided by shadow banking entities. As part of its global shadow banking risk monitoring, the FSB divides shadow banking entities into five categories (Table 5) pursuant to the economic functions (EF) they perform.

Banks continue to play the dominant role in Russia's financial system while the sector of other financial intermediaries is poorly developed. As of 2015, the total shadow banking assets reached

Table 5

Structure of Russian shadow banking market by economic functions

EF	Economic function description	Types of organisations and kinds of activity in Russia referred to shadow banking	Assets as of December 31, 2014, bln rbls	Assets as of December 31, 2015, bln rbls	Assets of Efs as of December 31, 2015, bln rbls	Share of EFs, %
EF 1	Mutual investments with risks of sharp capital outflow	Interval UIFs (hedge funds, money market funds)	15	16	61	1.2
		Open-ended UIFs (money market funds, bond funds)	33	45		
EF 2	Lending through short-term funding	MFOs	128	145	2,594	50.9
		Pawn shops	–	49		
		Consumer credit co-operative	80	100		
		Leasing companies	2,292	2,300*		
EF 3	Intermediary activity in financial markets through short-term funding or funding with the use of clients' funds	Brokers/dealers, trust management	739	751	751	14.7
EF 4	Provision of guarantees for loans	Insurance companies **	1,117	1,115	1,115	21.9
EF 5	Crediting and funding of financial companies through structured products	Mortgage agents	438	435	574	11.3
		Mortgage participation certificate	71	139		
TOTAL			**4,913**	**5,095**	**5,095**	**100**

** According to data of Expert RA rating agency under RAS. According to IFRS data, the leasing portfolio totalled about 3 trillion rubles as of December 31, 2015.*
*** Insurance companies with non-zero premiums as of year-end under financial and business risks insurance.*

5,095 billion rubles in Russia that represents only 6% of total financial assets in Russia.

Financial institutions referred to EF2 (leasing and microfinance organisations, consumer credit co-operatives and pawnshops) account for the largest share of shadow banking sector in Russia (51% of total shadow banking assets). The abovementioned organisations have potential competitive advantages before banks which are to a considerable extent restricted by tight requirements for the creation of loan loss provisions, the capital adequacy ratios and levels of credit risk. For the purpose of reducing the possibilities of regulatory arbitrage, the Bank of Russia introduced restrictions on the effective interest rate of loans extended to households (since 2014) and set requirements for microfinance organisations and consumer credit co-operatives for the loan loss provisions (since 2015). At the same time, leasing and factoring companies currently stay outside the regulatory perimeter.

The activity of facilitation of credit creation provided by insurance organisations (EF4 with the 22% share in assets) is included in the shadow banking perimeter through the pre-requisites for arbitrage with bank guarantees. In particular, the obligatory financial guarantee of travel agencies and developers in compliance with their sectoral regulations may take the form of both a bank guarantee/bank surety and liability insurance. Developers and travel companies normally prefer the services of insurance companies as their cost differs considerably from the cost of bank guarantees/ sureties. In July 2015, the Bank of Russia adjusted the requirements for the procedure of calculating the regulatory ratio of insurance companies' equity to their obligations that considerably curb risks accepted by insurance companies in insuring the liability of travel agencies and developers.

As a whole, considering the relatively insignificant size of shadow banking assets and its moderate growth rates (3.7% in 2015), and also the Bank of Russia's regulatory measures, the general level of shadow banking risks is considered as acceptable.

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