Bank of Russia

The Central Bank of the Russian Federation

Monetary Policy Guidelines

for 2019-2021

Moscow

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CONTENTS

INTRODUCTION

The Bank of Russia applies monetary policy measures to support price stability in the Russian economy. Sustainably low inflation is an important part of a favourable business environment for companies and comfortable living conditions for Russian citizens. Consistent monetary policy aimed at holding price growth paces at a low level raises predictability of economic conditions and gives confidence in production and investment planning and long-term savings. Only stable prices allow successful implementation of the measures announced by the Russian Government to further unlock the potential of the Russian economy.

Along with sustainably low inflation, economic development will be bolstered by the Bank of Russia's other measures within its remit: financial stability and sustainable development of the financial sector and the payment system. Though creating important conditions for social welfare and economic development, the Bank of Russia's policy cannot become the main source of economic growth. The key role in underpinning sustainable growth, diversifying the Russian economy and lowering its dependence on external factors will be played by the structural policy measures provided that a resilient public finance system is in place.

The Monetary Policy Guidelines are the Bank of Russia's medium-term policy paper. In this document the Bank of Russia discloses its monetary policy goals, describes its guiding principles and approaches, gives its outlook for external and internal conditions of economic and inflationary developments, and introduces a medium-term forecast for key macroeconomic indicators. When determining the basics of its monetary policy, the Bank of Russia focuses on the consistency of its goals and efforts. This in itself contributes to shaping a predictable economic environment, strengthens confidence in the current policy and helps raise its efficacy. After inflation declined, the Bank of Russia sees its main objective in anchoring consumer price growth rates close to 4%. In this way the 'close to 4%' inflation target will become a reliable quantitative benchmark for all economic entities.

During the year the Bank of Russia takes monetary policy decisions, that is, key rate decisions, based on the current state of the economy and the priority of delivering financial stability. The Bank of Russia continuously generates a multifaceted holistic view of economic conditions and inflation movements, relying on its macroeconomic forecast and making decisions primarily based on sustainable economic trends. With its in-depth analysis of economic processes to rely on, the Bank of Russia takes into account operational specifics of the monetary policy transmission mechanism, regional analysis findings and the impact of current measures across other state economic policy directions. While doing so, the Bank of Russia maintains a conservative approach towards building its forecast and decision-making, given a highly uncertain external environment, as well as the sensitivity, even to short-term price fluctuations, of inflation expectations.

Beyond the goal of anchoring inflation sustainably close to 4%, the efforts to reduce inflation expectations and strengthen the credibility of the current monetary policy stance are aided by communicating to the public its goals, measures and results. Transparency, including in interactions with households, businesses, governmental agencies, academia and market participants, is an integral part of the Bank of Russia's monetary policy. These efforts contribute substantially towards increased predictability of overall domestic financial and economic conditions, which is a key factor to consider given the impact of a persistently and highly uncertain external environment.

1. MEDIUM-TERM MONETARY POLICY GOALS AND PRINCIPLES

Contribution of monetary policy to economic development

The main goal of monetary policy is to support price stability, that is, sustainably low inflation. Price stability is an important element of an environment that is favourable for living and doing business.

Price stability protects wages, pensions and other income, as well as national currency-denominated savings of households and businesses from unpredictable depreciation. This gives more confidence in planning expenses, including long-term ones. Low income households are the main beneficiaries of low and steady inflation. Such families choose inexpensive staple goods and cannot switch to their cheaper substitutes if prices rise considerably. High inflation forces them to reduce consumption to the detriment of their quality of life. All else being equal, high inflation causes income differentiation and aggravates social inequality. Therefore, low inflation is a prerequisite for social stability[1].

Price stability also favours business activity. It makes debt financing more affordable for companies. High and volatile inflation is a risk source for banks. When inflation rises, the cost of bank liabilities grows faster than the return on bank assets. In these conditions banks choose to lend at high rates and provide mostly short-term funding to mitigate risks[2]. In contrast, low and steady inflation brings down the inflation premium included in banks' interest rates and allows lenders to expand the supply of long-term loans. This creates favourable conditions for businesses to borrow. Not only Russian banks, but also domestic investors (individuals and firms) and foreign investors will be more inclined to lend in a country with a predictable economic environment of which sustainably low inflation is an integral part. Price stability also helps businesses ease financial and investment planning. As a result, low inflation lays the groundwork for investment growth and, consequently, sustainable and balanced economic growth. Thereby, monetary policy contributes to the common goal of current economic policy of speeding up growth in investments and raising their share to 25% of gross domestic product (GDP).

Furthermore, while boosting confidence in the national currency, low and stable inflation paves the way for a decreased share of foreign currency in assets and liabilities in the economy. This, in turn, decreases the influence of external conditions on the economy.

Public opinion polls and company surveys also suggest that low and stable inflation is an important part of an environment which is favourable for living and doing business. Surveys suggest that households and corporates cite inflation as one of the problems deteriorating living conditions and the business environment and impairing the competitiveness of Russian goods (refer to Appendix 1).

Monetary policy lays the groundwork for economic development; however, it cannot be the main source of a sustainable rise in economic potential. In the long term, the main factors determining the outlook for economic growth include developments in labour and capital productivity and an innovation pace. The central bank cannot

[1] *For details of the effect of inflation on social inequality refer to Appendix 3 of the Monetary Policy Guidelines for 2018-2020.*

[2] *As a result of high and volatile inflation of the early 2000s, short-term loans (for up to one year) accounted for more than 50% of banks' corporate loan portfolio. Currently, the figure holds within 7%.*

impact the productivity of production factors or the introduction of technologies through its monetary policy tools. In its efforts to underpin price stability, the central bank influences domestic demand and, consequently, the use of production factors. Thereby, monetary policy impacts the deviations of the economic growth rate from the potential, rather than economic potential itself. Given the above factor, any efforts to boost economic growth with the use of monetary policy measures by means of an unreasonable key rate cut may have large-scale negative consequences in current conditions. In the short term, the reduction of the key rate will stimulate lending growth and raise investment and consumer demand. For this growth not to trigger a rise in inflation, it should not overshoot potential production capacity expansion. This period of time gives no opportunity to substantially raise production because the economy is close to its potential. When companies register a rise in demand, they will compete for the labour force and raise wages. This will help expand consumer demand, too. Meanwhile, many industries will need time to increase fixed assets through the implementation of investment projects. As a result, the rise in domestic demand, coupled with the lack of internal opportunities to satisfy it, will considerably accelerate inflation in two ways. First, as wages and loans increase demand amid an insufficient supply of domestically-produced goods, their prices will go up. Second, the insufficiency of domestically-produced goods will boost demand for imports; this will weaken the ruble and push inflation upwards. High inflation will depreciate incomes, bring considerable uncertainty and hamper business planning. Soaring inflation will discourage depositors from placing their funds at low rates, and banks will have to raise their interest rates. In order to cover losses from rising costs of deposit sourcing, banks will increase lending rates. This will further constrain investment and undermine economic growth. Thereby, the efforts to unreasonably ease monetary policy will not ensure a sustainable acceleration of economic growth and will bring inflation upwards.

Key monetary policy principles

Setting a permanent public quantitative inflation target

Under its inflation targeting strategy, the Bank of Russia sets a quantitative inflation target and publicly announces it for households, businesses and financial market participants to take it into account in their planning and decision-making. The Bank of Russia pursuits its monetary policy to deliver on the inflation target.

The monetary policy goal is to keep annual inflation close to 4% on a permanent basis. ‘Close to 4%’ means that inflation may slightly deviate from the target. Such deviations are natural, given that prices are shaped by multiple factors, and complex interconnections exist in the economy. At the same time, monetary policy influences price dynamics indirectly during a certain period of time; this means that its measures are insufficient to deliver on the target to a high precision.

The inflation target is set for the annual consumer price growth rate, that is, a year-on-year change in prices of goods and services consumed by households. The consumer price growth rate is determined based on the consumer price index (CPI) calculated for Russia by Rosstat. Thereby, monetary policy is aimed at holding headline inflation close to 4%. This means that price growth rates may fluctuate around 4% in the markets of different goods and services across regions due to specific local factors.

The Bank of Russia abstains from setting a specific date or time period for delivering on the inflation target, but seeks to keep inflation close to 4% permanently. Thereby, the Bank of

Russia emphasises the focus of its monetary policy on supporting price stability that provides for sustainably low inflation. Should factors emerge which lead to deviation from the target or should inflation deviate from the target unexpectedly, the Bank of Russia will assess the length of such deviation and decide accordingly on the need to resort to monetary policy measures, to bring inflation back to the target. The pace of inflation returning to target will be chosen taking into account the scale of the deviation and the impact of the key rate decision on the financial sector and economic activity.

Monetary policy decision-making based on the macroeconomic forecast and analysis of a wide range of information

The Bank of Russia takes monetary policy decisions based on its macroeconomic forecast. The effect of monetary policy on price dynamics is not immediate: it takes time and a long chain of interconnections known as the transmission mechanism (refer to Section 2). The main channel of influence is interest rates. The revision of the Bank of Russia key rate impacts market interest rates on which savings and lending activity depends. The propensity to save or spend (consume / invest) shapes domestic demand in the economy that influences price dynamics. The key rate pass-through to demand and price dynamics takes from three to six quarters. Therefore, the assessment of the effect of a key rate decision on the economy and inflation requires a macroeconomic forecast. The Bank of Russia employs up-to-date macroeconomic models in its forecasting.

A floating interest rate is an important condition for monetary policy's effective influence on the economy through interest rates. When exchange rate flexibility is low, the central bank's foreign exchange interventions affect banking sector liquidity and lead to high dependence of the money market and other segments of the financial market on external economic developments. This makes it harder for the central bank to independently steer interest rates and may render monetary policy less efficient. In contrast, a floating exchange rate acts as a 'built-in stabiliser' allowing the economy to adjust to changing external conditions and smoothing their impact[3]. In the pursuit of a floating exchange rate regime, the Bank of Russia has refrained from interventions in the domestic foreign exchange market aimed at sustaining a certain exchange rate or its rate of change. Having said that, the Bank of Russia may conduct foreign currency transactions in the domestic market if a threat to financial stability emerges and in order to replenish (use) foreign currency reserves to deliver on the Ministry of Finance's fiscal rule. The Bank of Russia sees as a threat to financial stability exchange rate dynamics which may cause a considerable shrinkage in domestic market liquidity, the emergence of persistent devaluation expectations coming with elevated demand for foreign exchange, an increased share of foreign currency in deposits and considerably deteriorated financial stability of banks and firms. Under the fiscal rule, the federal budget's excess oil and gas revenue to be used for foreign currency purchases to replenish the National Wealth Fund (NWF) or the volume of foreign currency out of the NWF to be allocated for subsequent transfer to the budget are both calculated by the Ministry of Finance. Overall, the Bank of Russia seeks to carry out operations in the foreign exchange market to replenish (use) foreign currency reserves to deliver on the Ministry of Finance's fiscal rule in full. At the same time, the Bank of Russia makes these transactions in such a manner that exerts only minor influence on exchange rate dynamics. Should threats to

[3] *For details of the role of a floating exchange rate as a 'built-in stabiliser' of the economy refer to Appendix 9 of the Monetary Policy Guidelines for 2018-2020.*

financial market stability emerge, the Bank of Russia may suspend these operations.

When preparing a macroeconomic forecast the Bank of Russia estimates the duration of factors affecting the economy and prices, and the stability of emerging economic trends. Given the long pass-through of monetary policy measures on the economy, **the Bank of Russia is guided by sustainable economic trends and long-term factors in its key rate decision-making**. The Bank of Russia revises the key rate if current trends point to a persistent deviation from the target over the forecast horizon or if long-term factors are in place which are highly likely to lead to such a persistent deviation. The Bank of Russia abstains from monetary policy measures if inflation is expected to return to the target reading over a short-term horizon despite its current deviation. If the Bank of Russia takes measures in response to such a short-term deviation, they will continue to affect price dynamics after inflation returns to the target. This may push inflation to the opposite side, which contradicts the task of keeping inflation close to 4%.

At the same time, factors, which are short-term in nature, may have a longer impact if they affect inflation expectations. Inflation dynamics are largely determined by inflation expectations, as they guide economic agents in their decision-making regarding procurement, wage and price-setting. For instance, households may respond to inflation acceleration triggered by short-term factors with elevated demand for goods, expecting that their prices may soon go up. This process may affect both the goods of which prices have increased and other products, particularly staples. In this environment producers may decide to raise prices for a wider range of goods and services. Inflationary pressure will rise and inflation deviation from the target will become more persistent. Such a situation may call for monetary policy measures.

Depending on the effect on economic activity and price dynamics, monetary policy can be accommodative, contractionary or neutral. In the case of long-term equilibrium in the economy, that is, if inflation and inflation expectations hold close to the target and the economy grows at the rate close to potential, monetary policy should not exert either a constraining or accommodative effect on the economy, that is, this policy should be neutral. If the economy is in equilibrium, the key rate is neutral. The neutral level is determined by multiple factors and can be estimated in different ways.

Accommodative monetary policy is resorted to when inflation persistently deviates downwards from the target or if there are risks that such deviations may emerge unless monetary policy measures are taken. Accommodative monetary policy suggests that the key rate is retained below its neutral level, which helps inflation rise to a target.

In contrast, contractionary monetary policy is resorted to when inflation persistently deviates upwards from the target or when there are risks that such deviations may emerge unless monetary policy measures are taken. Contractionary monetary policy suggests that the key rate is retained above its neutral level, which helps inflation slow down to a target.

The Bank of Russia conducts an in-depth analysis of a wide range of information when preparing its macroeconomic forecast. The Bank of Russia analyses, among other things, current statistics for the Russian economy and the state of global commodity and financial markets, information on economic policies in major foreign economies, and possible changes in fiscal, tax, social and other areas of Russia's economic policy. The Bank of Russia uses these data to formulate assumptions for forecast scenarios – external and internal economic factors which may have a tangible effect on the Russian economy and inflation dynamics, and estimates inflation risks.

When formulating assumptions for the macroeconomic forecast and estimating risks, the Bank of Russia takes a conservative approach with a focus on proinflationary factors and risks. At the current stage, underestimation of proinflationary factors and risks may lead to persistent and long-lasting deviations of inflation upwards from the target, given the nature of inflation expectations in Russia. Price expectations of households and businesses alike remain elevated and sensitive to short-term factors. At the same time, their response to price movements is asymmetrical. Households and businesses are more responsive to price growth acceleration than slowdown. In order to change the nature of inflation expectations, it is critical that considerable and long-lasting deviations of inflation from the target be avoided. The reduction and anchoring of inflation expectations will, in turn, help support price stability. Therefore, when formulating forecast assumptions, the Bank of Russia analyses proinflationary factors and factors in inflation risks in the forecast if they are highly likely to manifest themselves.

Measures in other domestic economic policy directions as well as economic policy measures in major foreign economies are all important factors for the Bank of Russia to consider in its macroeconomic forecast building. They all have a bearing on the current state of the Russian economy and price movements; hence the need to take them into account in implementing Bank of Russia monetary policy.

The Bank of Russia's remit extends to multiple economic policy directions which, beyond monetary policy as such, involve a financial stability programme and efforts at sustainable development of the banking sector, the financial market and the payment system. Cross-impactful and mutually consistent measures are attained through a decision-making process at the Bank of Russia Board of Directors, of which each member leads a specific Bank of Russia activity, as well by involving representatives of multiple activities in the operations of field-specific committees and working groups within the Bank of Russia.

Monetary policy and financial sector stability

Banking regulation and banking supervision efforts, macroprudential policy decisions and financial resolution measures are aimed to deliver financial sector stability. The stability of the financial sector is paramount to efficient signal transmission from the key rate to the economy. Importantly, in most cases changes in banking regulation affect long-term and structural aspects of banks' operations; therefore, they are introduced irrespective of medium-term monetary policy decisions. At the same time, macroprudential policy decisions are largely associated with cyclical fluctuations in the economy and financial markets; therefore, macroprudential measures take into account the effect of monetary policy decisions on macroeconomic indicators.

In the pursuit of its monetary policy, the Bank of Russia is guided by banking regulation and macroprudential policy developments which may affect monetary conditions, lending dynamics and inflation. The Bank of Russia makes its key rate decisions based on their impact on the financial sector and in a way which prevents threats to its stability. In some cases, monetary policy may be used to stabilise financial markets and help reduce financial stability threats.

Financial resolution measures cause liquidity provision to credit institutions to increase a surplus or reduce a deficit of banking sector liquidity. The Bank of Russia takes these changes into account when it sets the limits on operations to absorb or provide liquidity, thereby setting off their possible impact on monetary conditions.

Monetary policy and financial market development

A mature financial market enables effective redistribution of financial resources, which in turn creates conditions for growing investment activity and national economic development. The Bank of Russia-implemented financial market development strategy and its priority of maintaining price stability through monetary policy measures lay the groundwork for improved access to funding for a wide range of economic agents. Furthermore, the financial market is one of major transmission links for the key rate signal to be transmitted into the economy. A mature financial market is therefore conducive to the successful conduct of monetary policy. The greater the size and liquidity of the financial market, the more impactful and quicker is the transmission of key rate changes into economic indicators.

In order to widen the circle of financial market participants and intensify its use for the exchange of financial resources, the Bank of Russia takes action to extend the line of financial services and enhance their availability, including through digital channels. Investor and borrower interest in financial market operations also depends on market participants' mutual trust and a maturity degree of consumer protection. To this end, the Bank of Russia implements a package of measures to counter unfair practices, prevent and stop breach of law and build a conduct supervision framework. For households to be knowledgeable about financial services and use them more extensively, the Bank of Russia's agenda includes efforts to improve financial literacy. The above measures will lead to a deeper involvement of domestic private investors, who have long-term investment needs, in the operation of the financial market. This is set to become a prerequisite for the advancement of the long-term money institute and economic growth, while at the same adding to the efficacy of monetary policy (for details of financial market development measures and their effects refer to Section 4 and draft Guidelines for the Development of the Russian Financial Market in 2019-2021). However, the financial market development package will take time to deliver. Hence, decisions within this lane have no major implications for the conduct of monetary policy in the short term. As the financial market evolves and changes unfold, the Bank of Russia updates its estimated contribution to the key rate transmission into the economy (for current assessments refer to Section 2).

Monetary policy and fiscal policy

Fiscal policy makes a considerable impact on monetary policy conditions: economic growth rates and structure, movements in prices for goods and services. The Bank of Russia therefore takes into account fiscal policy measures in its macroeconomic forecasts and in making key rate decisions.

The running fiscal rule alongside foreign currency market operations acts to reduce fluctuations of the real ruble exchange rate, triggered by a changing commodity price environment. This promotes increased competitiveness of Russian goods, enabling the advent of domestic conditions for industrial development in non-commodity sectors and, therefore, gradual change in the economic structure. Furthermore, government investment targeting the development of specific economic sectors of relevance is a further structural change driver for the economy. The impact of fiscal policy on the structure of the economy and its growth paces is a factor the Bank of Russia considers in its macroeconomic forecast building.

The budget formation approach is a key driver behind price movements. Imbalanced fiscal flows and a considerable buildup of expenditure may have inflation consequences. Maintaining the current budget consolidation strategy ensures the absence of inflationary pressure along the fiscal channel. More so, the fiscal rule works to smooth out the impact of volatility in the external climate on the domestic

economic environment, including through movements in the exchange rate and demand in the economy. This results in reduced price volatility, which in turn enables the successful conduct of monetary policy. Revisions of taxes, chiefly indirect ones, entail one-off price adjustments and call for no monetary policy response provided that economic entities' inflation expectations are anchored at a low level. However, inflation expectations currently remain substantially sensitive to proinflationary drivers. Steadily growing inflation expectations against the backdrop of tax increases may lead to inflation deviating upwards from the target – a factor the Bank of Russia takes into account in the conduct of its monetary policy.

Russia's Ministry of Finance and Ministry of Economic Development, in preparing a draft federal budget and the social development outlook, also take into account the inflation target and the influence of monetary policy on the economy and price movements. Cross-impactful and mutually consistent monetary and fiscal policy measures are attained through continual interaction between the Bank of Russia, the Ministry of Finance of Russia and the Ministry of Economic Development of Russia. In particular, regular joint meetings are held to enable macroeconomic forecast discussions and the cross-checking of estimates and factors impactful on key macroeconomic indicators. At the same time, central to improved credibility and efficiency of monetary and fiscal policies are consistent communications on related matters.

Monetary policy and other types of state policy

A number of other government bodies' measures contribute towards efforts to support price stability. Their impact is a factor the Bank of Russia considers in its macroeconomic forecast building. In particular, maintaining the indexation strategy whereby rates are indexed by no more than the rate of inflation helps sustain inflation near 4%. No less critical in driving reduced volatility are efforts to reduce the impact of non-monetary factors on price movements. The Bank of Russia alone is unable to make a difference here. Having said that, the influence of these factors may bring about marked inflation fluctuations. Government bodies' measures help weaken the influence of non-monetary factors on inflation. The Bank of Russia is involved in these efforts, providing its own expertise to analyse the markets and proposing ways to address problems. At the regional level, the Bank of Russia's regional branches cooperate with public authorities on a regular basis: working groups have been established within committees for economic development and investment activity, SME and consumer market development, the agroindustrial and fishery sector, tariffs and price policy. The working groups include representatives of the Bank of Russia, Ministry of Economic Development, sectoral ministries and regional administrations, as well as regional branches of the Federal State Statistics Service (in some regions, working groups also include representatives of the regional branch of the Federal Antimonopoly Service). Furthermore, the Bank of Russia arranges meetings with representatives of executive authorities at the regional level to discuss the state of the region's economy, the specifics of price formation in certain markets of goods and services and non-monetary inflation drivers.

Key measures aimed at reducing the effect of non-monetary factors on price dynamics at the current stage include efforts to foster food market infrastructure development in regard to transportation, storage and processing. The launch of wholesale distribution centres being constructed according to the Russian Government's programme will help, among other things, undermine the negative influence of seasonality on market conditions, helping promote the development of related processing infrastructure. As a result, the volatility of food prices, with its substantial share in the consumer basket, will decline.

The negative effect of nonmonetary factors on prices will be reduced by, among other things, the measures to constrain monopolisation. Business in a weak competitive environment has fewer incentives to improve efficiency and cut costs, which leads to higher prices. For example, when unfavourable factors push costs upwards, monopolies increasingly pass them on to customers. In a competitive environment, companies will seek to keep their market share and pass increased costs on to ultimate retail prices only partially, thus reducing their profits. At the same time, they will try to increase their efficiency and cut costs – otherwise they will have to leave the market. Ultimately, unfavourable factors will have a weaker effect on the price level in a competitive market. A critical framework to promote competition is 'The Standard for Promotion of Competition in the Constituent Territories of the Russian Federation' (further referred to as the Standard). The Standard recommends that regional authorities monitor the competitive environment and take action to promote competition, seeking to archive specified targets. The Bank of Russia's regional branches participate in the efforts to develop a technique for monitoring the state of competition in the markets of Russian constituent territories, also working towards crafting measures to encourage competition.

It will take time to deliver on these measures. The Bank of Russia will take the changes in consumer price dynamics caused by these measures into account when building its macroeconomic forecast and making its policy decisions.

Monetary policy and economic policies in major countries

Given its openness, the Russian economy is strongly influenced by global financial and commodity market developments. These are shaped by, among other things, economic policies in key advanced economies and, in the first place, central bank policy measures. Major central banks' decisions first and utmost shape domestic economic developments. Developments in major economies shape global demand and, consequently, prices in global goods and services markets including commodity markets. Given Russia's extensive involvement in global trade, prices for global goods and services markets are among factors driving domestic price movements.

Changes in major central banks' interest rates are also drivers for change in financial asset prices across global markets, investor risk appetite, country risk premiums and exchange rate movements. With cross-border capital flows unrestricted, Russian economic entities' borrowings in foreign markets, Russian entities' overseas investment, as well as foreign investment in the Russian economy are dependent on global financial market developments. The Bank of Russia builds its macroeconomic forecast taking into account the versatile effect of economic policy measures in developed countries on the state of the Russian economy.

Transparency

The Bank of Russia's monetary policy transparency aims to enhance the understanding and credibility of its current monetary policy stance and enable the emergence of a predictable economic environment for all economic agents. In turn, a highly credible monetary policy stance which is socially understood helps achieve better efficiency and successful sustainability of price stability. If households and businesses are confident that inflation will stay low and that the Central Bank is capable to support price stability, then in response to short-term fluctuations in prices or to the emergence of proinflationary factors, they keep their inflation expectations largely unchanged. Furthermore, the understanding of the Central Bank's decisions and its signals helps in their sooner and more accurate recognition by economic

agents as they make decisions regarding the level of interest rates, loans, savings, wage indexation and pricing. As a result, the impact of monetary policy on the economy and inflation amplifies, the scale and duration of inflation deviation from the target decline, and so does the need for a strong monetary policy response.

As part of its transparency policy, the Bank of Russia seeks, in the first place, to disclose, as soon and as full as possible, information about its monetary policy goals, principles, measures and results, as well as about its view of the current economic situation and outlook. Key monetary policy goals and principles are set forth in the Monetary Policy Guidelines. On the day the Bank of Russia Board of Directors makes its key rate decision, the Bank of Russia posts a press release elaborating on the specifics and rationale for this decision. Four times a year following the Board's key rate decision, a live press conference of the Bank of Russia Governor is held, supplemented by a publication of the Monetary Policy Report. It presents a more detailed account of the Bank of Russia's view of current economic developments and its mid-term outlook based on which key rate decisions are made. The Bank of Russia on a monthly basis publishes its commentaries on the state of the economy, inflation dynamics and inflation expectations.

Also, the Bank of Russia works towards expanding the outreach of monetary policy and further specifying the target audience. The Bank of Russia increases the frequency and content of its communications, the number of publications, making use of non-conventional communication channels. For this purpose, the Bank of Russia takes into account the degree to which the audience is knowledgeable about monetary policy and general economic issues, selecting the most appropriate channels and tools to send its message, information complexity, granularity, the extent of disclosure and communication format. Aiming to expand the coverage of its communications and specify their target audience, the Bank of Russia develops, among other things, information policy at a regional level.

The Bank of Russia will continue to raise efficiency of its monetary policy communications, employing the complete range of instruments at its disposal and improving their use taking into account the specifics of the audience.

2. THE USE OF MONETARY POLICY INSTRUMENTS IN 2018 AND 2019-2021 AND THE EFFECT OF THE TRANSMISSION MECHANISM

Achieving the operational goal of the monetary policy

The influence of the key rate on the economy and inflation begins with interbank market rates that act as the benchmark for all interest rates in the economy. The Bank of Russia seeks to maintain rates of overnight interbank loans (IBL) close to the key rate, which is the operational goal of the monetary policy. For that purpose, the regulator assesses the liquidity situation in the banking sector, i.e. it compares banks' liquidity requirements with the amount that they can accumulate without any intervention on the part of the Bank of Russia. In case of a liquidity deficit, the Central Bank provides banks with extra funds and, in case of a liquidity surplus, absorbs them[1].

In 2018, a structural liquidity surplus persisted in the banking sector. It means that credit institutions had significantly more money than they required for fulfilling reserve requirements and making payments. The structural liquidity surplus emerged in early 2017 and has been accumulating since 2017 Q3. The main reasons for it were measures taken by the Bank of Russia for financial rehabilitation of certain banks and the large-scale spending of sovereign funds' money to finance the deficit of the federal budget. In 2017, the liquidity surplus grew from -0.7 to 2.6 trillion rubles and for the first nine months of 2018, to 3.1 trillion rubles. As of the end of 2018, the structural liquidity surplus is expected to decline to 1.7-2.1 trillion rubles, helped in part by the Bank of Russia's decision to suspend foreign currency purchases in the domestic FX market under the fiscal rule.

In the conditions of a banking sector liquidity surplus, the Bank of Russia used one-week deposit auctions as the main instrument of its monetary policy. In 2018, the amount of funds borrowed through them surged. While in 2017 the regulator absorbed 0.8 trillion rubles on weekly auctions on average; while between January and September 2018 this figure reached about 2.4 trillion rubles.

The amount of placement of 3-month Bank of Russia coupon bonds (coupon OBRs) also increased. The Bank of Russia first issued these bonds in August 2017, when the banking sector liquidity surplus started to grow, to absorb the stable part of excess liquidity for longer terms. In early 2018, the outstanding amount of coupon OBRs[2] was 0.4 trillion rubles, reaching 1.5 trillion rubles as of 01.10.2018. Starting from 2018 Q2, coupon OBRs allowed the Bank of Russia to absorb nearly a third of the total amount of excess liquidity.

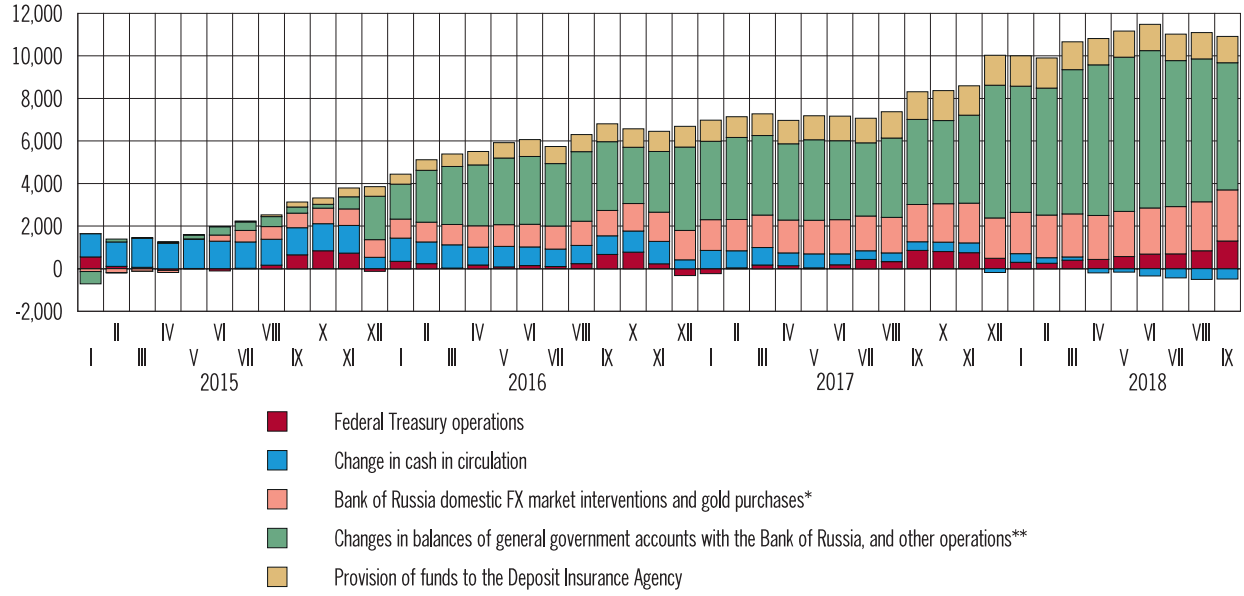
In 2018, the Bank of Russia generally reached the operational goal of its monetary policy: overnight interbank rates followed the key rate changes although remaining mainly in the lower half of the interest rate corridor. In January-September 2018, the average absolute deviation of RUONIA from the key rate was 32 bp (in 2017, it averaged 26 bp).

In certain periods, the spread between IBL rates and the Bank of Russia key rate widened. Its largest growth was observed in 2018 Q1 but after that the spread returned to its average 2017 readings. While in 2018 Q1 it averaged 45 bp, in April-September it was

[1] *For a detailed description of the process see the Bank of Russia website (Monetary Policy – BoR Monetary Policy – Banking Sector Liquidity and Money Market Interest Rates Management). Answers to the most frequent questions on the subject can also be found there.*

[2] *At par value with the coupon yield factored in.*

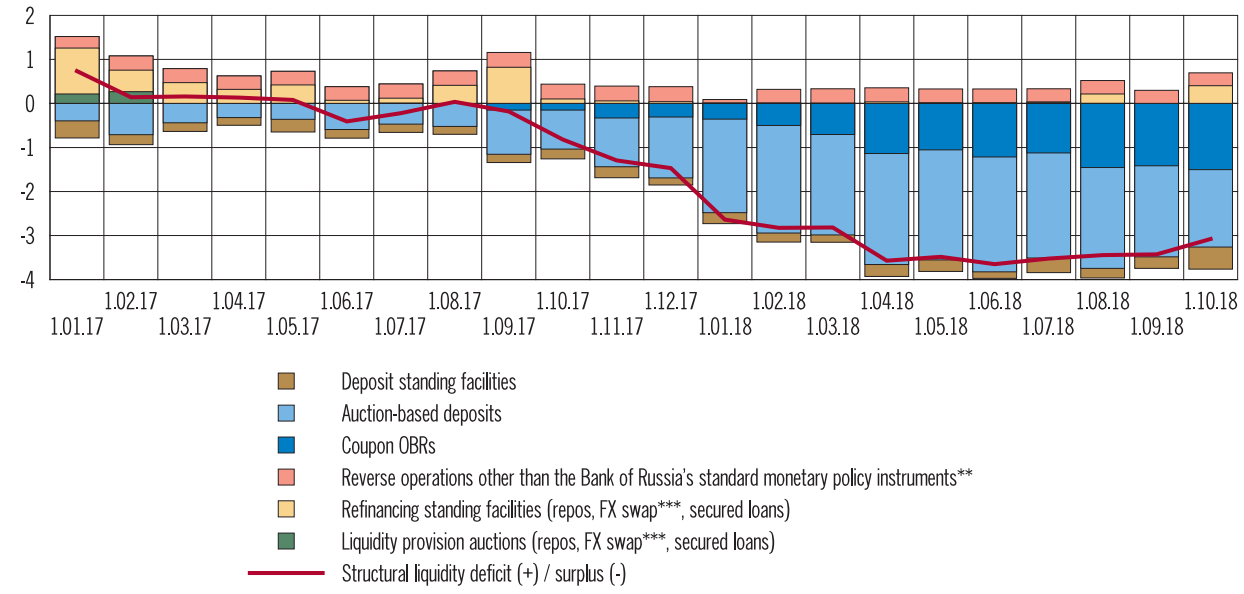
Factors of banking sector liquidity
(cumulative total, billions of rubles)



** The Bank of Russia has suspended domestic FX market interventions since 28.07.2015.*
*** Including operations of the Russian Ministry of Finance to buy (sell) foreign currency in the domestic FX market.*

Source: Bank of Russia.

Structure of Bank of Russia deposit operations
(trillion rubles)*



** The Bank of Russia's claims on credit institutions under refinancing instruments /the Bank of Russia's liabilities to credit institutions under surplus liquidity absorption instruments as of the start of the operating day.*
*** The Bank of Russia's special-purpose refinancing instruments, Bank of Russia loans issued under irrevocable credit lines, and USD/RUB and EUR/RUB sell/buy FX swap transactions.*
**** The Bank of Russia's USD/RUB and EUR/RUB buy/sell FX swaps.*

Source: Bank of Russia.-

already 26 bp). The spread widened during the periods of significant one-off inflows of liquidity into the banking sector. In the first quarter of 2018, the spread widened on the back of large inflows of budgetary funds and transfers to certain banks for their financial rehabilitation in late 2017 and during the first months of 2018. A small number of banks received a significant amount of liquidity during a very short period of time. These funds were not fully redistributed

Bank of Russia interest rate corridor and RUONIA
(% p.a.)

Source: Bank of Russia.

across the banking sector at once. This led to the emergence of an imbalance between demand for liquidity and its supply.

Banks that were the recipients of these large inflows needed time to adapt to the quickly changing liquidity situation and, consequently, to adjust their activity in the money market. Another factor behind the spread expansion was the uncertainty of the scale of bank clients' operations, which is characteristic of December and January. It boosted the uncertainty for market participants with regard to their own liquidity position. In these circumstances, banks opted to increase their correspondent account balances by averaging their required reserves in advance and at the same time minimising the placement of funds at one-week deposit auctions of the Bank of Russia and coupon OBR auctions. As a result, the overnight interbank market temporarily faced excess liquidity supply, leading to increased deviation of IBL rates from the key rate.

Taking into account banks' slow adaptability to significant liquidity inflows and their insufficient participation in the Bank of Russia's major liquidity absorption operations, the Bank of Russia increased the frequency of fine-tuning auctions in 2018. This allowed it to prevent a more significant deviation of IBL rates from the key rate due to liquidity inflows.

As the liquidity surplus stabilised, the spread between market rates and the Bank of Russia key rate narrowed. The Bank of Russia's estimates suggest that, if the liquidity surplus persists and no one-off liquidity inflows occur, the average negative spread between market rates and the key rate will maintain under 25 bp.

The fact that market rates are localised in the lower half of the Bank of Russia interest rate corridor, i.e. with a small negative spread to the key rate, is characteristic of a large-scale liquidity surplus. The Bank of Russia does not have an objective to make interbank rates reach the key rate level at any cost. The existing monetary policy toolkit is constructed, on the one hand, to create conditions for an active interbank market and, on the other hand, to achieve the operational goal of the monetary policy.

The Bank of Russia takes into account the banking sector liquidity surplus in its monetary conditions forecast and, consequently, factors in a small negative spread between market

In an effort to optimise the procedure for Bank of Russia operations,

The Bank of Russia strives to streamline the procedure for its monetary policy operations, making it more convenient and technologically advanced. It concerns both credit and deposit operations of the Bank of Russia.

Simplification of deposit operations[1]

Simplification of technology. Overnight deposits are now performed automatically: banks can transfer funds to their deposit accounts directly, without sending a prior application to the Bank of Russia and waiting for its approval.

Expansion in the number of participants. Currently, any credit institution that has a deposit agreement with the Bank of Russia can participate in deposit operations (access to such operations has previously been restricted for certain groups of banks).

Time extension. Changes in the technology of overnight deposit operations allowed extending the time frames for deposit operations. They are now conducted through the whole operational day (in accordance with the schedule of Bank of Russia payment system operations, from 01:00 AM to 09:00 PM Moscow time) on each business day (previously, from 09:00 AM to 05:00/04:45 PM).

Optimisation of the set of deposit instruments. The change in the deposit operations procedure allowed cancelling such standing facilities as TOM/NEXT, SPOT/NEXT and sight deposits starting from May 2018. These operations were not popular among market participants and discouraged banks from performing money market operations.

Simplification of credit operations

From 1 October 2018, a new unified procedure for the issuance and repayment of Bank of Russia loans secured by non-marketable assets and securities will come into force. This procedure will allow the Bank of Russia to revise terms and conditions of operations promptly and flexibly to satisfy the needs of market participants and adjust to technological developments.

New joint payment area

In July 2018, a new payment system of the Bank of Russia was launched. From now on, banks from different regions can perform transactions with each other within the joint payment area: the system functions from 1:00 AM to 9:00 PM Moscow time. Previously, this option was only available during the operational day of territorial branches or divisions of the Bank of Russia where they or their branches had correspondent accounts.

Liquidity settlement period[2]

Beginning in the second half of 2018, banks can participate in a special liquidity settlement period (from 8:00 to 9:00 PM Moscow time). Only banks and clearing institutions can make payments related to individual transactions during this period. This allows banks to settle their liquidity positions as of the end of the operational day in the interbank market and borrow funds from or place them with the Bank of Russia, after making all client payments. This will help credit institutions better forecast their balances in correspondent accounts with the Bank of Russia and manage them in the end of the operational day.

The introduction of the liquidity settlement period along with the extension of the time frames of the Bank of Russia's standing facilities will help avoid situations when banks had to conduct transactions in the interbank market at interest rates outside of the interest rate corridor because Bank of Russia operations were inaccessible in the evening. This should increase the clarity of transmission of the key rate signal to the economy.

Electronic document workflow and personal accounts

Beginning from 13 November 2017, all credit institutions can directly send deposit auction applications to the Bank of Russia, whereas from 19 February 2018, they can also use electronic document workflow when obtaining secured loans of the Bank of Russia under standard refinancing instruments.

In the course of 2018, the Bank of Russia continued to broaden the functionality of electronic document workflow to conduct deposit and credit operations: Effective from 17 May 2018, the entire electronic document workflow related to deposit operations is implemented in electronic format; effective from 1 October 2018, substantial expansions were made to the list of credit institutions' documents related to credit operations accepted in e-format.

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[1] Effective from 17 May 2018.

[2] As provided by the system of prospective payment services introduced from 2 July 2018.

Before the end of 2018 the Bank of Russia intends to begin a gradual transition to personal accounts to conduct credit and deposit operations. In the medium term, there are plans to introduce personal accounts that banks will use for their Bank of Russia interactions for compliance with mandatory reserve requirements.

rates and the key rate. This was taken into account when key rate decisions were made in 2018.

The Bank of Russia expects the liquidity surplus to hold over a three-year horizon. Moving forward, its value in the baseline scenario will total 3.8 trillion rubles by the end of 2021 and 3.0 trillion rubles in the unchanged oil price scenario. These estimates were calculated based on the key parameters of the Bank of Russia's macroeconomic forecast provided in Section 4 with budget projections of the Ministry of Finance factored in. Exclusively for the purposes of model-based calculations in support of basic macroeconomic forecasts, the Bank of Russia assumes that foreign currency purchases in the domestic market under the fiscal rule, suspended in 2018, will be implemented evenly over the whole forecast horizon of 2019-2021. The decision regarding foreign currency purchases in the domestic market, postponed through the end of 2018, will be made with due regard to the actual state of financial markets. The decision regarding the foreign currency purchases in the domestic market which were postponed in 2018 will be taken after regular purchases are resumed.

The Bank of Russia will continue to absorb excess liquidity using deposit auctions and through coupon OBR placement. This will allow maintaining IBL interest rates near the key rate and creating monetary conditions required to keep annual inflation close to 4%.

By the end of 2018, the Bank of Russia intends to complete the arrangements for a simple and convenient access to its monetary policy instruments. The project involves optimising the set of instruments, simplifying the procedure and increasing the speed of operations, implementing the electronic document workflow and personal accounts of credit institutions (see the Box 'Optimising the procedure of Bank of Russia operations'). The streamlined procedure should allow banks to better manage their funds, and the Bank of Russia to improve its management of short-term money market rates. This should also reduce labour costs of operations of both banks and the Bank of Russia.

Over the forecast horizon, Bank of Russia instruments will retain the emergency liquidity assistance (ELA) mechanism launched in September 2017. The Bank of Russia is committed to the use of ELA in exceptional cases, applying it to banks that experience transitory liquidity issues, with due regard to their financial stability and systemic importance[3]. This mechanism will allow the Bank of Russia to provide support, as may be necessary, to an overall financially stable bank and prevent the emergence of negative trends in financial markets, while ensuring uninterrupted functioning of the monetary policy transmission mechanism. The Bank of Russia does not disclose the details of ELA use by a credit institution given that such disclosure may impair its operations.

The analysis of the monetary policy transmission mechanism at the Bank of Russia

By changing the key rate, the Bank of Russia influences interest rates in the economy, yields of financial assets and the currency exchange rate, thus affecting, through a chain of economic interconnections, demand

[3] *Further details of ILA access criteria for credit institutions, borrowing conditions under the mechanism, the composition of the required collateral, the type of an interest rate and maturity on such operations are available in the Bank of Russia 2017 Report (Page 73, Russian version).*

for goods and services and, finally, inflation. Inflation expectations of businesses, financial market participants and households are also an important driver of price movements in the economy. If the central bank is trusted, these expectations become anchored around the target level of inflation and fluctuate depending on the regulator's forecasts and forward guidance on inflation and monetary policy.

In modern economic theory and practice, the mechanism through which monetary policy influences the economy and inflation is called a 'transmission mechanism'; it comprises a number of channels. For the Russian economy, key channels are the interest rate, credit, foreign exchange and inflation expectations channels[4], with the interest rate channel standing out as the most impactful one.

Besides, inflation and the operation of the monetary policy transmission mechanism are affected by a number of non-monetary factors. These factors are not directly influenced by the central bank and include structural and institutional specifics of the economy and supply factors in certain consumer market segments.

When making its monetary policy decision, the Bank of Russia calculates how its impact will spread through each key transmission mechanism channel based on the available estimates of transmission strength and speed at each stage, factoring in non-monetary factors.

Interest rate and credit channels

The impact of the key rate on interest rates in the economy

As noted above, monetary policy decisions influence the economy through the financial sector. **At the first stage, changes in the Bank of Russia key rate are translated into interest rate changes in all segments of the financial market.** It takes from one day to several quarters, depending on the market segment, and, all other things being equal, the scale of such adjustments is close to the initial key rate change. At the same time, interest rates movements over longer periods are affected not only by actual but also expected monetary policy decisions.

First of all, when the key rate changes, it almost immediately leads to a similar adjustment of overnight IBL interest rates. These rates always remain in the vicinity of the Bank of Russia key rate, which is ensured by banking sector liquidity management operations of the regulator.

Afterwards, changes in the overnight IBL rate are translated into the adjustment of longer IBL interest rates. This requires more time and is not only determined by the actual increase or decrease in the overnight rate but is also affected by changes in market players' expectations regarding its future dynamics. Given that the overnight IBL rate is closely linked to the key rate, these expectations are largely shaped under the influence of statements and forecasts of the Bank of Russia and, primarily, its signals regarding its future monetary policy. IBL interest rates for various terms are also affected by the term premium, which can be higher in case of increased uncertainty in the economy, and by the market structure including the concentration of borrowers and creditors in its individual segments. According to the Bank of Russia's estimates, it takes two weeks for a 1 pp change in the overnight IBL interest rate (-MIACR) to translate into a 0.75-1 pp change in the <1 year IBL rates, a 0.45-0.75 pp change in the IBL rates for 1 to 5 years and a 0.35-0.4 pp change in the IBL rates for over 5 years[5].

[4] *Modern literature also provides other classifications of transmission mechanism channels; however, the specified ones are the most important and enable quite a good insight into how monetary policy impulses are transmitted to the Russian economy.*

[5] *Here and elsewhere, estimated impacts are indicated on condition that all other things are equal – that is, assuming no change occurs in all other factors which may weigh on the final indicator.*

Transfer curve and the shaping of interest rates on bank operations

The transfer curve is an instrument that allows a commercial bank to establish coordinated pricing for operations in different market segments and, if necessary, promptly change the structure of its balance[1] by choosing between various sources of funding and targets for investments. It is a unified set of internal (transfer) bank rates for each term of transactions that serve as the basis for 'calculating' interest rates for all asset-side and liabilities-side operations of the bank.

There is no single transfer curve for the banking sector. Each bank creates its own curve based on IBL interest rates, OFZ yields or its internal estimates taking into account the specifics of its strategy. Besides, using the transfer curve is reasonable mostly for large banks that perform simultaneous operations in multiple market segments. Active IBL and stock market participants they are can respond quickest to expected and actual changes in the key rate. Small specialised banks, e.g. those working only in deposit and credit markets, can simply establish two sets of interest rates – on active and passive operations. Still, large banks that make use of the transfer curve in their pricing contribute to increasing the interconnectedness of financial market segments because the impact of certain major events, including key rate changes, is simultaneously transmitted to all these market segments.

For all types of asset-side operations, the rate must be no less than the transfer rate for the respective term plus costs and risk premiums (both general and specific for that particular type of operations). For all types of liabilities-side operations, on the contrary, the rate must be no more than the transfer rate less costs. As a result, regardless of the assets and liabilities structure, the spread between rates on asset-side and liabilities-side operations will cover all necessary costs and risks and generate profit.

Key costs and risks include operating (transactional) costs, credit risks for certain segments and borrowers and payments into the deposit insurance system and for required reserves (see Appendix 7 to the 2018-2020 Monetary Policy Guidelines, further referred to as the Monetary Guidelines). The existence and scale of factors that banks objectively need to consider when pricing their products explains why the difference between the level of interest rates for corporates and households from the Bank of Russia key rate is larger than that between IBL interest rates and the key rate for comparable terms.

Financial market parameters can exert additional influence on interest rates for the real sector of the economy. Such parameters include market segmentation, the level of competition for depositors' money or for best borrowers, specifics of the strategy of individual participants and of the financial sector regulation in general.

Changes in all of the above factors can contaminate the response of interest rates on deposits, loans and corporate bonds to changes in IBL rates and OFZ yields. Therefore, this response should be assessed excluding the impact of the above factors.

It is possible to provide a number of examples from Russian practice when additional factors made a meaningful impact on the dynamics of credit and deposit rates in the economy in general or on the specifics of transmission mechanism operation.

[1] Changes in the balance structure that may influence the specifics of the monetary policy transmission mechanism occur both at the level of individual banks and the banking sector as a whole. For example, in 2016-2017, there was a trend in banks' portfolios towards replacing corporate loans with bonds, including, in part because banks grew more interested in more liquid instruments amid increased uncertainty and credit risks. This could somewhat speed up the transmission of monetary policy signals to financial markets (given that bond rates are more susceptible to influence).

An increase or decrease in IBL rates, in turn, influences the yields of financial assets and interest rates on deposits and loans, feeding through to funding costs of financial market participants. Actual key rate changes are meanwhile more meaningful for the formation of short-term interest rates and yields. Long-term interest rates and yields are impacted by multiple other factors including risk premiums, inflation expectations and expectations as regards the future key rate path, as well as public debt and its projections.

Market participants' expectations as regards the future key rate path and inflation expectations have both a strong impact on interest rates movements and yields of financial instruments. This suggests that, If market participants expect beforehand that the key rate will soon be changed in the future, long-term IBL interest rates may adjust even before the actual changes in the key rate and, respectively, changes in short-term IBL rates. The resulting rise or reduction in long-term interest rates may outstrip changes in short-

term interest rates. The reverse situation is not impossible. A central bank's action to raise its key rate in response to the growing risks of inflation acceleration may signal to market participants that the rise in inflation will be more muted, driven by the prompt monetary policy response, than could have been otherwise, and that in the future the central bank will be able to switch to a rate reduction cycle sooner. As a result, short-term IBL rates will see a more substantial rise in response to key rate changes than long-term ones – which under certain circumstances may remain flat or even drop.

Changes in IBL interest rates translate into adjustments of government bond yields. The Bank of Russia estimates that changes in IBL interest rates lead to similar adjustments of yields of federal government bonds (OFZs) within one month's time.

After that, changes in IBL interest rates and OFZ yields are transmitted to the interest rates of deposits, loans and corporate bonds. This process may take longer, in particular for bank operations; however, the transmission impulse remains strong, just like for previous transmission stages. IBL interest rates and OFZ yields are the basis for pricing key bank products, including through the transfer curve mechanism (see the Box 'Transfer curve and the shaping of interest rates on bank operations'), because banks view them as a funding or investment cost benchmark alternative to credit (deposit) operations.

Corporate bond yields respond to the situation in the interbank market more promptly. All other things being equal, the scale and speed of corporate bond yields adjustment remain comparable to the similar parameters of OFZs.

The adjustment of interest rates on banking products takes somewhat longer than that for corporate bonds. For the most part, this is related to the specifics of decision-making with regard to changing terms and conditions of standard credit and deposit products, which takes different time in different banks. That said, short-term interest rates respond to changes in the IBL market faster than long-term rates, and the adjustment of deposit rates takes longer than that of credit rates. This is related to, among other things, the fact that deposits are standardised products where interest rates change only after the central bank takes a centralised decision to set new terms and conditions. Large banks sometimes keep interest rates at the same level for 2 or 3 quarters, despite changes in the key rate during that period. As a result, a 1 pp change in short-term (up to 1 year) IBL interest rates leads to a 1 pp change in interest rates on short-term loans within 2-4 months, and a similar change in short-term deposits, within 7-9 months. Interest rates on long-term loans experience a 1 pp change within 4-6 months after a similar adjustment of IBL interest rates for comparable terms, while long-term deposits take 7-9 months to produce a similar response.

Banks' decisions regarding interest rates on deposits and loans (including in individual segments) are also affected by inflation expectations of both banks themselves and their clients (corporates and households). This influence will be reviewed in detail in the section dedicated to the inflation expectations channel.

The influence of interest rates on lending, saving, investments, and consumption

Changes in interest rates in various financial market segments influence the propensity of economy participants to borrow, invest, save or consume and, consequently, translate into the dynamics of monetary indicators, consumer and investment demand. All other circumstances being equal, lower interest rates lead to higher lending, consumption and investment, and vice versa.

A reduction or growth of market interest rates impacts the demand of households and business for borrowed funds by

determining their affordability, on the one hand, and attractiveness, on the other. According to the Bank of Russia's estimates, a 1 pp change in the average weighted ruble interest rate leads to a nearly 1.5% correction of the credit to the economy with a lag of one quarter. Afterwards, unless the rate returns to the initial value, the response extends to 2.3% in one year and 3.0% in two years. It takes quite a long time for interest rate changes to affect the servicing cost of total outstanding credit debt. In Russia, for example, short-term borrowings with a maturity of less than one year comprise less than 20% of banks' aggregate credit portfolio.

The speed and strength of the impact of interest rates on credit indicators can depend on certain credit market specifics, including the popularity of floating interest rates on loans (where the changes are linked, e.g., to the dynamics of the key rate or IBL rates), early repayment of obligations and the term structure of the real sector's debt. According to Bank of Russia data, most loans are extended by Russian banks at fixed rates: their average share in the total credit amount totals about 85% (see Appendix 2). If the share of loans issued at floating rates increases, the credit volume response to changes in the key rate may accelerate.

Furthermore, through the credit channel as it is currently understood, changes in both interest rates and credit volumes are reflected in the level of debt burden in the economy as a whole and in its individual segments. The debt burden indicates a share of borrowers' income spent on interest and principal repayments and, consequently, how effective their demand will be for borrowed funds in the economy. Debt burden analysis provides an insight into the dynamics of real possibilities of economic agents as regards spending on consumption and investment, as well as what is their further borrowing potential. The debt burden can be measured using such indicator as the debt service ratio, which is the ratio of the flow of payments under the accumulated debt (includes the repayment of the principal amount and interest) to current income. According to the estimates, changes in credit rates most prominently affect the debt burden in the current quarter. The Bank of Russia's estimates suggest that a 1 pp change in the weighted average[6] interest rate on ruble and foreign currency loans leads to a co-directional adjustment of the debt service ratio of 0.1 pp for households and 0.3 pp for corporates. Taking into account transmission lags and the term structure of lending, it takes almost two years after the interest rate change for it to be fully reflected in the debt burden level. There are also other factors affecting debt burden dynamics, including exchange rate fluctuations that lead to a revaluation of debt denominated in the foreign currency. In certain cases, these drivers' contribution to the debt burden and, consequently, to credit activity can significantly exceed that of changes in interest rates. First, this can significantly affect the monetary policy transmission and, second, become a source of risks to financial stability. Debt burden above critical levels, which Bank of Russia estimates attest, may result in the growing risks of insolvency of households and real sector companies and their subsequent bankruptcy. This may entail impaired financial stability of the banking sector, driven by accumulated non-performing loans and shrinking capital adequacy levels. This, in turn, may drive a sharp and lengthy drop in credit activity, rising risk premiums, undermine the efficacy of monetary policy impact on the economy made through changing interest rates and – in the most adverse scenario – emerge as a source of crisis phenomena in the economy. These effects are also related to the credit channel impact. In view of the above factors, the Bank of Russia, while assessing the impact of credit on the economy, is focused on, beyond core monetary aggregates, loan

[6] *The average rate weighted by the amount of funds provided for all terms.*

The economic equilibrium concept and key macroeconomic variable deviations from such equilibrium (gaps)

In the context of macroeconomic policy, the long-term equilibrium concept is widely used. In the long-term equilibrium, all key economic indicators grow at a constant pace determined by fundamental factors. That is, the long-term equilibrium is not a final point but rather a stable trajectory along which the economy is moving. Monetary policy involving an inflation targeting regime in the long-term equilibrium stipulates that consumer prices grow at a rate equal to an inflation target, while an economic growth rate is equal to its potential level and determined by production factor productivity and a pace of technological development.

The economy can remain in the long-term equilibrium indefinitely in the absence of various shocks entailing short-term deviations. These deviations are called 'gaps'. Gaps can occur due to deviations of economic growth rates, inflation, exchange rate, unemployment and other macroeconomic indicators from their long-term equilibrium values. In macroeconomic literature, output gap is mentioned most often. Positive (proinflationary) or negative (deflationary) output gaps can cause inflation and inflation expectations to deviate from the target. In an open economy, temporary deviations from the equilibrium can be related to changes in both internal and external economic conditions. The reaction of macroeconomic, including monetary, policy to shocks helps minimise their consequences for the economy and ensure its prompt return to the long-term equilibrium.

burdens of borrowers alongside a wide range of indicators measuring the functioning of the banking sector. The Bank of Russia further recognises that credit activity may be impacted by macroprudential measures and changes to banking regulations; it therefore measures the potential implications of such measures for the monetary policy transmission mechanism, taking them into account in forecast building and decision-making.

Changes in lending activity affect the dynamics of economic activity over both a short-term horizon (up to 1 year) and longer terms (up to 2.5 years), due to, among other things, related debt burden adjustments.

Changing attractiveness of borrowing and saving for households under the influence of interest rates changes affects the saving ratio. The higher the saving ratio is, the lesser share of their disposable income households spend on goods and services, i.e. consumer demand shrinks. And vice versa, when the saving ratio declines, the consumption activity of households increases. The saving ratio is calculated on a net basis as the difference between the investments in assets and the growth of lending divided by household disposable income. According to the Bank of Russia's estimates, a 10% change in the weighted average[7] interest rate on household loans in rubles (e.g. from 10 to 11% per annum) leads to a co-directional adjustment of the saving ratio of 0.2 pp within the following quarter. This effect can reach 0.3 pp over a year because the sustained interest rate movement over time attracts more people who take decisions regarding their savings or investments.

At the same time, it should be noted that, over a mid-term horizon, the saving ratio fluctuates around a relatively firm level determined by a number of stable factors. They include cultural and national specifics (e.g., the attitude towards purchasing goods using borrowed funds), the demographic situation, government policy (access to welfare benefits reduces the need to save), taxation of income from savings, and other factors. A declining saving ratio is a global trend. Short-term fluctuations of the saving ratio around the stable level can be caused not only by interest rates movements but also by growing or declining uncertainty, which affects precautionary savings that tend to increase during turbulent times, as it was, for example, in early 2015.

[7] *The impact on saving activity can be assessed using credit interest rates dynamics because usually credit and deposit rates move in the same direction.*

Changes in market interest rates that entail rising or falling corporate demand for new borrowed funds also affect investment demand dynamics. According to the Bank of Russia's estimates, this effect is not pronounced in Russia: a 1 pp change in the IBL interest rate (and the subsequent change in loan interest rates) triggers a 0.2-0.3 pp change in the growth rate of gross capital formation – an increase in the event of a reduced rate and a slowdown in the event of a rate hike. This is largely associated with the prevailing share of own funds used for funding investments in the Russian economy. Despite certain growth during the recent decades, bank loans continue to account only for circa 10% of fixed capital investments (see Appendix 8 to the 2018-2020 Monetary Policy Guidelines). In future, it is possible that the share of borrowed resources used for funding investments (both through bank loans and bond issuance) will slightly grow; however, taking into account the observed sluggishness of investment funding structure adjustments, this process will take quite a long time.

The impact of demand dynamics on consumer prices

Changes in consumer and investment activity observed under the influence of changing interest rates are translated into the adjustment of aggregate demand and consumer prices. This is the final stage of transmission. Aggregate demand fluctuations can increase or decrease inflationary pressure in the economy. At the same time, in line with global experience and economic theory, prices can be affected only by such movements of the aggregate demand that deviate from the equilibrium and outpace the expansion of the economy's production capacity. This deviation is called 'output gap' (see the Box 'The economic equilibrium concept and key macroeconomic variable deviations from such equilibrium (gaps)'). A significant positive output gap, all other things being equal, leads to the risks of inflation steadily deviating above the target (or steadily deviating downwards in the case of of a negative gap).

The Bank of Russia's estimates suggest that a 1 pp output gap leads to the adjustment of annual inflation of 0.3 pp in the next quarter: upwards in the case of a positive and downwards in the case of a negative output gap. Proinflationary (or disinflationary) influence is observed during the whole period when the positive (or negative) output gap persists and not only when it grows or shrinks.

Therefore, in accordance with the logic of the interest rate and credit channels of the monetary policy transmission mechanism, a change in the key rate successively influences the interest rates in the economy, monetary indicators and real sector indicators, translating into the adjustment of growth rates of consumer prices. According to the Bank of Russia's estimates, full transmission of the key rate change impulse on inflation dynamics requires up to 3-6 quarters.

Foreign exchange channel

Interest rate changes impact the attractiveness of ruble-denominated financial instruments, influence cross-border capital flows and, thereafter, the exchange rate, which is, in turn, an important driver for domestic price formation.

The national currency can also weaken or strengthen due to a large number of external and internal drivers beyond the central bank's direct control. These factors are outside the scope of the monetary policy transmission mechanism as such; however, the Bank of Russia considers them in its current analysis, inflation forecasts and key rate decisions (for details see Section 3). The domestic foreign exchange market may also be influenced by the central bank's foreign currency purchase and sale transactions. In a floating foreign currency exchange rate regime, however, they are not intended to fix a certain exchange rate

or a pace of its change. The Bank of Russia views foreign currency transactions in the domestic market under the fiscal rule as an assumption in the forecast based upon which key rate decisions are made.

Exchange rate dynamics exert a meaningful impact on inflation both directly, through prices of imported goods, and indirectly.

According to the Bank of Russia's estimates, it usually takes the exchange rate one week to respond to changes in the key rate and overnight interbank interest rates. A 1 pp change in the overnight interbank interest rate leads to an approximate 0.9% adjustment of the real effective ruble exchange rate[8].

Exchange rate directly affects inflation in the consumer market through both prices of imported goods and services and prices of imported raw materials, supplies and parts. Due to a large share of imports in the Russian market, ruble exchange rate dynamics significantly affect inflation. In the structure of retail trade commodity resources, the average share of imports in 2017-2018 Q1 was 35%.

The indirect impact of exchange rate movements on inflation occurs through the influence on the cost of exports and imports. A weakening national currency entails higher cost of imports, lowering their relative attractiveness for domestic consumers, which creates new opportunities for both import substitution and growth in prices of domestic substitute products. Growing ruble costs of exports are also observed when the domestic currency weakens, creating upward pressure on prices of goods that are both exported and sold domestically. In the case of raw materials, it also produces general pressure on the part of expenses.

The Bank of Russia's estimates suggest that **the effect from ruble exchange rate fluctuations on the dynamics of domestic prices for the most part manifests itself within 6 months of actual exchange rate changes**. A 1% change in the nominal effective ruble exchange rate[9] normally leads to a less than 0.1 pp adjustment in inflation.

The response of domestic prices to the weakening of the ruble exchange rate can be more pronounced than to its strengthening, especially in the short term. This asymmetrical reaction is related to, among other things, the specifics of formation of inflation expectations of both households and businesses that are more sensitive to a weakening of the national currency than to its strengthening (see subsection 'Inflation expectations channel'). At the same time, it is possible that the scale of response of prices of goods and services flattens out over longer terms. In this case, for example, the weakening of the ruble exchange rate leads to a short-term but strong price response whereas its strengthening causes a similar effect in terms of scale but over a longer period. However, in order to obtain more reliable and robust estimates of the sensitivity of Russian inflation to exchange rate dynamics over a long-term, it is necessary to accumulate statistical data for a longer period, during which the Russian economy would not face such heavy structural shifts as in the recent past. In particular, the most important of such shifts include the transition to a floating exchange rate in 2014 and to inflation targeting in early 2015.

Furthermore, prices of different groups of goods and services respond differently to exchange rate movements due to such factors as the competitiveness of Russian products in certain markets, the share of transportation costs, trading and warehousing mark-ups in the final price, and the tax burden level. Prices of goods and services with a short storage or usage period respond to exchange rate changes more promptly and are more sensitive

[8] *The weighted average change in the real exchange rate of the ruble to the currencies of Russia's main trading partners.*

[9] *The weighted average change in the nominal exchange rates of the ruble to the currencies of Russia's main trading partners.*

to its weakening rather than strengthening. This is particularly true for food prices, which can be related to structural specifics of the Russian food market: the share of imports is the highest in the segment of goods with short storage periods (e.g., fruit, certain dairy products). Service prices also demonstrate a strongly asymmetrical response. International tourism and air transportation prices are the most sensitive to exchange rate fluctuations. The response of non-food goods prices is more symmetrical. Long storage time allows retail networks to change prices more gradually, taking into account not only the periods when the national currency experienced weakening but also those when it strengthened.

The advancement of import substitution in the consumer product segment, a gradual decline in inflation expectations, and financial stability create conditions for price sensitivity to exchange rate fluctuations to decrease. During the financial market turbulence in late 2014 – early 2015, the sensitivity of prices was 2 to 3 times higher than it is today. In 2015-2016, the proportion of domestic products, especially certain meat and dairy products, was growing (see Appendix to the Monetary Policy Report, September 2017). The share of domestic production of goods in the domestic market in early 2018 was close to 100% for certain meat products (pork, poultry) with cheese production growing by 20% vs early 2014. Import substitution in non-food consumer goods was less pronounced. That said, in 2017 – early 2018, import substitution was slowing down on the back of market saturation a strengthening of the ruble exchange rate in 2017.

Inflation expectations channel

The inflation expectations channel is a specific transmission mechanism channel that supplements other channels and influences their functionality. Depending on their inflation expectations, economy participants make consumption, saving and investment decisions, set interest rates, salaries and prices. **The central bank can influence inflation expectations dynamics through its forecasts, statements and key rate decisions that are supposed to affect future inflation. More importantly, by setting inflation target and reaching it through monetary policy measures, the central bank creates conditions for anchoring inflation expectations to that target.** The effectiveness of the central bank's influence over inflation expectations depends on the trust in its policy and on the level of financial literacy of economy participants.

The Bank of Russia analyses expectations of all groups of economy participants as each group's expectations have their specifics and affect price formation. In Russia, inflation expectations, in particular those of businesses, significantly influence inflation.

Business inflation expectations play a major role in shaping inflation because firms set salaries and prices of their goods. Enterprises have stronger needs for inflation forecasts. They have better access to information and more resources for its processing.

Household inflation expectations largely determine the dynamics of consumer demand which, in turn, is reflected in prices for products and services. For example, expectations of future price growth can lead to increased household demand and faster and stronger inflation acceleration. It should be noted that household inflation expectations, in both global and Russian practice, can be more adaptive, i.e. they can be based on previous inflation metrics and be influenced by other factors, such as the demographic structure of the population. The Bank of Russia considers this fact when making its monetary policy decisions, paying principal attention to household inflation expectations dynamics, especially their significant fluctuations.

Expectations of professional analysts and experts can affect those of households and businesses as well as inflation expectations of the financial community, thereby leading to respective changes in financial market indicators and interest rates. At the same time, analysts' estimates usually are based on more detailed analysis of large amounts of economic information than household and business expectations and can be closer to actual inflation readings.

Inflation expectations of banks influence long-term credit and deposit interest rates. Decreasing inflation expectations of the financial sector in 2016-2018 largely contributed to the decline in long-term interest rates on loans to historical lows. Furthermore, banks' inflation expectations affect their preferences regarding the maturity structure of their assets and liabilities and, consequently, variations in the speed of response of short-term and long-term interest rates to key rate changes. For example, in 2015-2016, amid relatively high uncertainty with respect to future inflation dynamics, banks raised and lowered credit rates more slowly than deposit ones. Thereby, banks aimed to hedge against unexpected inflation growth and, consequently, key rate hikes when they expected that households would transfer their funds to new deposits at higher rates, while loans issued earlier at relatively lower rates would still remain on their balances.

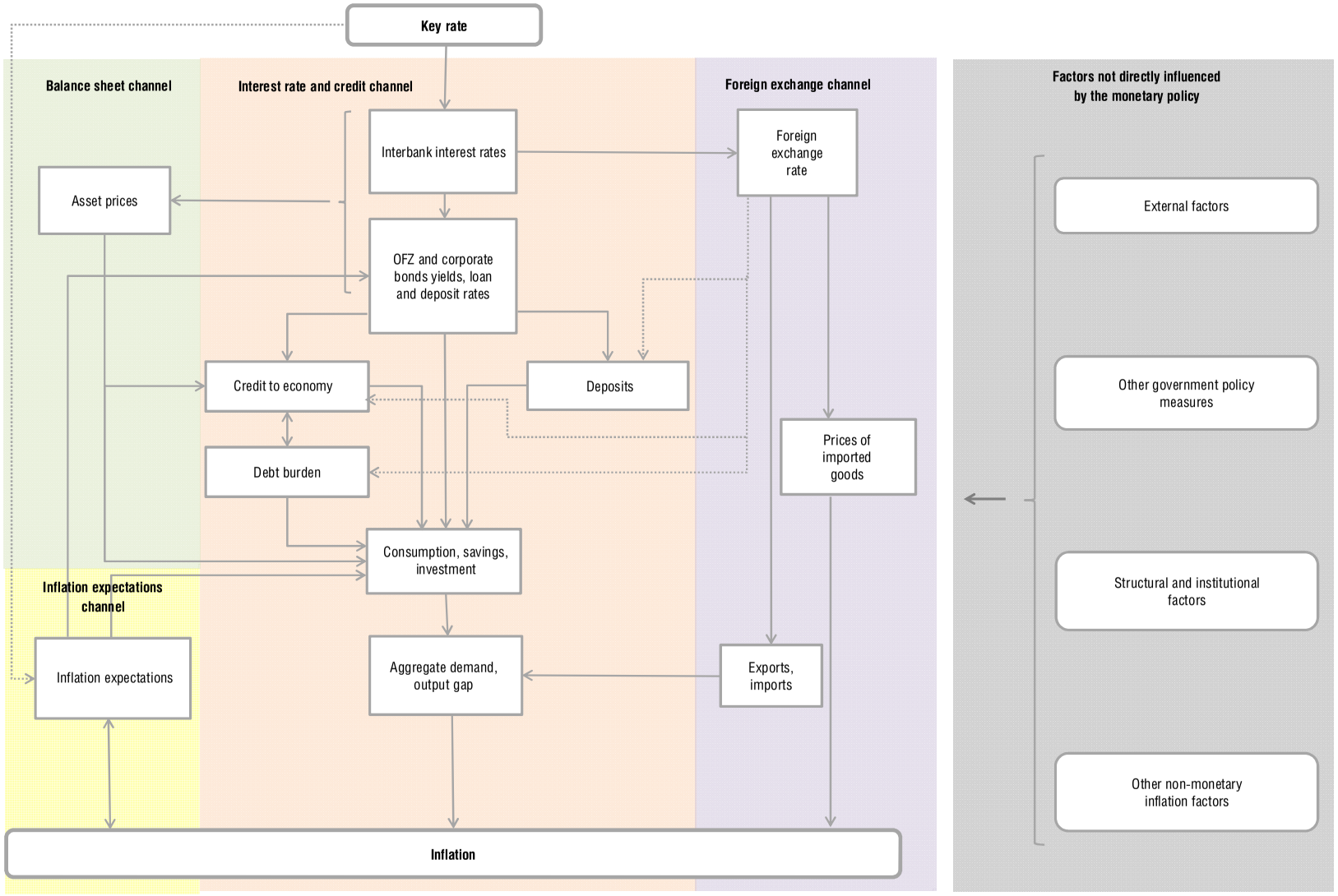
Interest rates on banking operations can also be materially influenced by household and business inflation expectations. Inflation expectations of households and their perceptions of its current level can set the lower bound of deposit rates, below which they will be viewed as unreasonably low and unattractive. When deposit rates approach this bound, they become less sensitive to further decline in the key rate. As a result, the reduction of deposit, and consequently, credit rates slows down. This situation was observed in 2017 and the first half of 2018.

The decline in inflation to its historic lows and consistent monetary policy help build trust in the Bank of Russia's policy and enhance the role of its statements and forecasts in building inflation expectations. Among other things, this helps shape business practices that involve setting salaries and prices of intermediate and final products in relation an inflation target. Increased trust in monetary policy also allows economic entities to pay less attention to short-term price fluctuations caused, among other things, by non-monetary factors when making their decisions. These trends need to be strengthened and developed to reinforce the link between inflation expectations and an inflation target, which is an important condition for successful inflation targeting.

Other channels

Key rate changes also affect asset prices on corporate balances. This influence is called the balance channel (asset price channel) of the monetary policy transmission mechanism. The adjustment of interest rates in the financial market, which occurs after a change in the key rate, lowers or increases the affordability of borrowed funds for purchasing assets and, consequently, demand for such assets. As a result, a reduction of the key rate leads to an increase in the market value of assets while its hike causes their depreciation. Prices in the financial market are the most sensitive in terms of both the speed and the scale of response because transactions here are performed faster than, for instance, in the real estate market. When rates on deposits and new bond issues are growing, market participants will sell shares and bonds in their portfolios, which have become less attractive, and their prices will decline until their yields match the market average. Due to the fact that assets owned by businesses and population can be used as security for loans,

Monetary policy transmission mechanism scheme*



** For a more detailed version of this scheme see A.N. Mogilat 'Review of main monetary policy transmission mechanism channels and instruments for their analysis at the Bank of Russia', Money and Credit, 2017, No. 9.*

their appreciation increases the capabilities of such companies and households to borrow additional funds. This ensures further expansion of lending when the key rate falls, or a decline in credit activity – when the key rate rises. The analysis of balances of a large number of Russian real sector businesses confirms the efficiency of the balance channel of the transmission mechanism in the Russian economy; however, in general, this channel is less important than the others. This can be related to the fact that Russian companies and, in particular, households are still reluctant to use assets, prices of which depend on interest rates, as security.

When analysing the influence of interest rates on prices, economic literature sometimes additionally distinguishes the cost channel. Its mechanism suggests that rising interest rates primarily affect producers' costs (through debt servicing expenses), making them simultaneously reduce production and raise prices of final products (while the logic of the interest rate channel provides that rising key rate should restrict price growth). However, recent research, including that based on Russian data, shows that today the influence of monetary policy on inflation through the interest rate channel prevails (see Appendix 3).

The effectiveness of the monetary policy transmission mechanism

The effectiveness of the monetary policy transmission mechanism in terms of strength and speed of influence of monetary policy on the economy and inflation largely depends on the development of the financial sector, economic agents' trust in financial institutions, the central bank and the national currency, and the scale of influence of non-monetary factors on the economy.

The financial market and the banking system in Russia continue their evolution through the improvement of monetary policy operational procedures, rehabilitation of the banking sector, enhancement of financial literacy of households and businesses, introduction of new technologies, which lowers the costs of market participants and increases the speed of transactions, as well as through expansion of the portfolio and availability of financial services (see Section 1). The Bank of Russia contributes to these processes through various kinds of its activity.

The sustainably shrinking share of foreign currency loans and deposits in 2017-2018 also helps reduce the influence of external factors on the domestic financial sector and increases the role of domestic interest rates for decision-making by households and businesses. If this trend proves sustainable, helped in part by sustainable price and financial stability, it will have positive implications for the effectiveness of the monetary policy transmission mechanism.

Currently, prices in the Russian economy are largely influenced by non-monetary factors, both external (such as energy prices) and internal (such as inadequate competition, an immature logistics infrastructure, scarce availability of locally produced raw materials, parts and equipment, lack of skilled personnel, high wear and tear of manufacturing equipment, and specifics of tariff regulation) (see Appendix 3). A smoothed impact of these factors can reduce price volatility, which will contribute to further reduction in inflation expectations and their sensitivity to one-off events. The activity of government authorities, in which the Bank of Russia takes part at the stage where analysis is performed and measures are developed, will help decrease the influence of non-monetary factors on inflation (see Section 1).

3. MONETARY POLICY IN 2018: KEY PREREQUISITES AND CORE MEASURES

In making key rate decisions throughout 2018, the Bank of Russia was guided by monetary policy goals and principles outlined in the 2018-2020 Monetary Policy Guidelines. **Once inflation declined to 4% in the middle of 2017, the monetary policy focused on efforts to anchor it close to 4%.** With key rate decisions having no immediate effect on price movements but taking time to make a difference, the Bank of Russia assesses the stability of factors which are impactful on inflation and builds a macroeconomic forecast. The latter, as well as risk analysis, forms the basis of Bank of Russia key rate decisions.

Inflation remained low throughout 2018. Low inflationary pressure in the economy was aided by the moderately tight monetary policy stance, which consistently made savings attractive and sustained a moderate propensity to save. As a result, consumer and investment demand growth paces were not outpacing the potential supply expansion. Also, inflation sustainably lower than 2.2-2.4%, that is, below the 4% target, in the first sixmonths of the year was in no small measure attributed to the abundant supply of agricultural produce and, accordingly, low growth paces of food prices. **In recognition of a temporary nature of the impact of this factor and the expected return of inflation to levels close to 4%, the Bank of Russia gradually reduced the key rate early in the year – by 25 bp in February and March to 7.25% per annum. While doing so, the Bank of Russia intended to switch to neutral monetary policy before the end of 2018.**

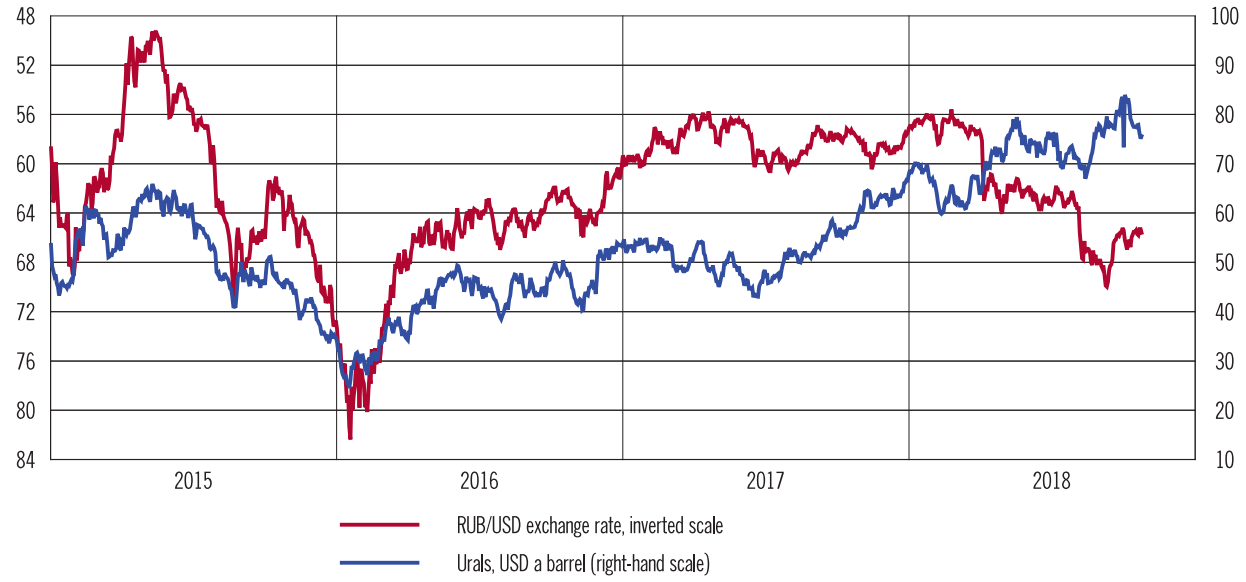
However, the second and third quarters saw the materialisation of a number of risks the Bank of Russia had specified in its previous press releases. **The weakening of the ruble, which occurred in April and August amid tightening external sanctions, strengthening rhetoric over them and a growing country risk premium for Russia combined with the unveiled decision to raise value added tax (VAT) in 2019 to make the Bank of Russia revise its forecast for inflation.** These factors are responsible for inflation rising faster than expected early in the year. The Bank of Russia estimates annual inflation in 2018 to run at 3.8-4.2%. It is expected to accelerate in the course of 2019 to 5-5.5%, subsequently returning to 4% in the first half of 2020. Growing exchange rate volatility meanwhile pushed up household inflation expectations, adding to the uncertainty over their change in the future. Steadily rising inflation expectations may bring about the risks of inflation sustainably deviating above the target. **In this context, the Bank of Russia kept the key rate unchanged at 7.25% per annum between April and July; it was raised to 7.50% per annum in September and left unchanged in October.** With a view to stabilising the financial market, the Bank of Russia decided that foreign exchange purchases in the domestic market, being made as part of the fiscal rule, be suspended through the end of 2018. These decisions will help limit the scale of the impact of proinflationary factors.

The sections which follow present an in-depth study of domestic and external factors the Bank of Russia recognises while building its macroeconomic forecast and making key rate decisions.

External conditions

The impact of external conditions on the economy proved to be mixed. On the one hand, higher oil prices in the global

Ruble exchange rate and Urals



Source: Thomson Reuters.

market underpinned national economic growth. On the other hand, they triggered upward pressure on domestic oil product prices, with the resulting effect on overall consumer price movements. Furthermore, a toughening of external sanctions, strengthened rhetoric over sanctions in April and August and a weaker global risk appetite all led to the country premium for Russia stabilising at a higher level. These developments triggered a weakening of the ruble, which emerged as a key factor for the Bank of Russia to revise in September its inflation forecast for 2018 upwards to 3.8-4.2%.

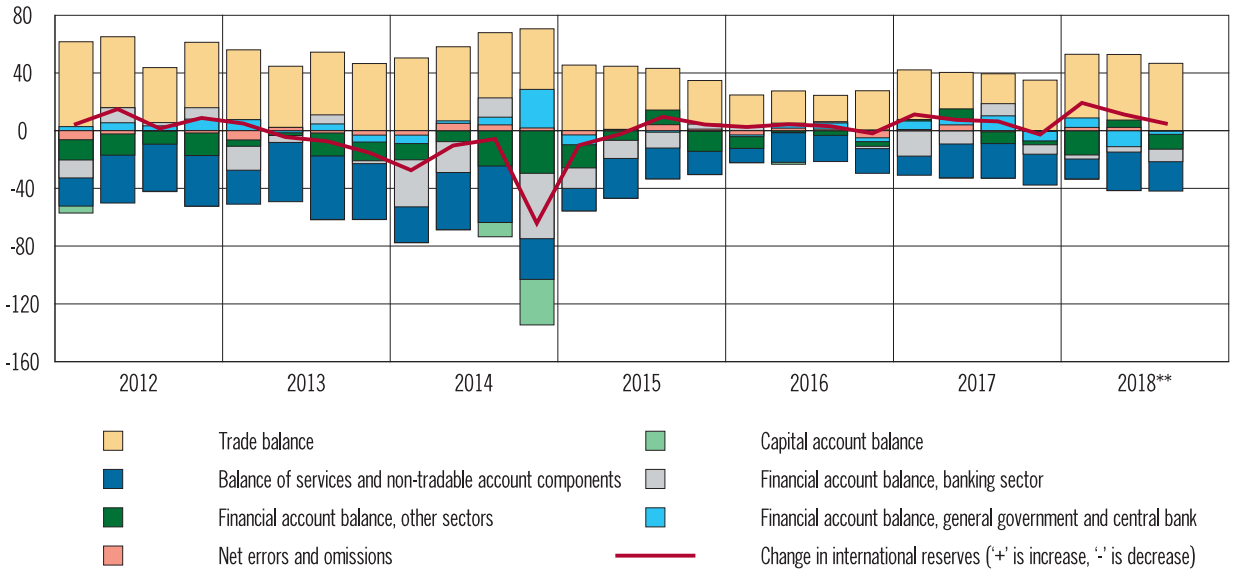
Average oil quotations resided between January and September close to $70 a barrel, well above the price the Bank of Russia based its baseline scenario set forth in the 2018-2020 Monetary Policy Guidelines. One year ago, the regulator expected a gradual slide in Urals to $40 a barrel by mid-2018 – when it presumed that shale output would be rising and there would be fewer incentives to extend the global output cut deal. However, as global demand was growing against the backdrop of shrinking global oil reserves reserves global: oil prices held at a level higher than expected. On the supply side, oil benchmarks gained support from the OPEC+ cut deal extension for 2018, as well as from its overperformance. The temporary contraction of oil supply from a number of regions triggered by local political developments and man-made factors were also relevant. Also, the US decision to resume its Iran sanctions combined with growing geopolitical uncertainty in the Middle East to help sustain high oil prices.

The Bank of Russia looked into oil price developments to review, in the course of the year, the oil price path in its baseline forecast[1]. The regulator built its October forecast based on the assumption of oil prices gradually decreasing to $55 a barrel during the course of 2020 and holding sustainably at this level further on.

Even though the oil cut deal was complied with and worked to constrain output growth, higher crude prices, along with the rise in external demand in 2018, encouraged a marked increase in the value of exports. The Bank of Russia's preliminary estimate suggests that the current account balance for the January to September 2018 period totalled $75.8 billion vs

[1] The baseline forecast is updated ahead of each Bank of Russia Board of Directors key rate-setting meeting. It is released on a quarterly basis as part of the Monetary Policy Report.

Major balance of payments components*
(billions of US dollars)



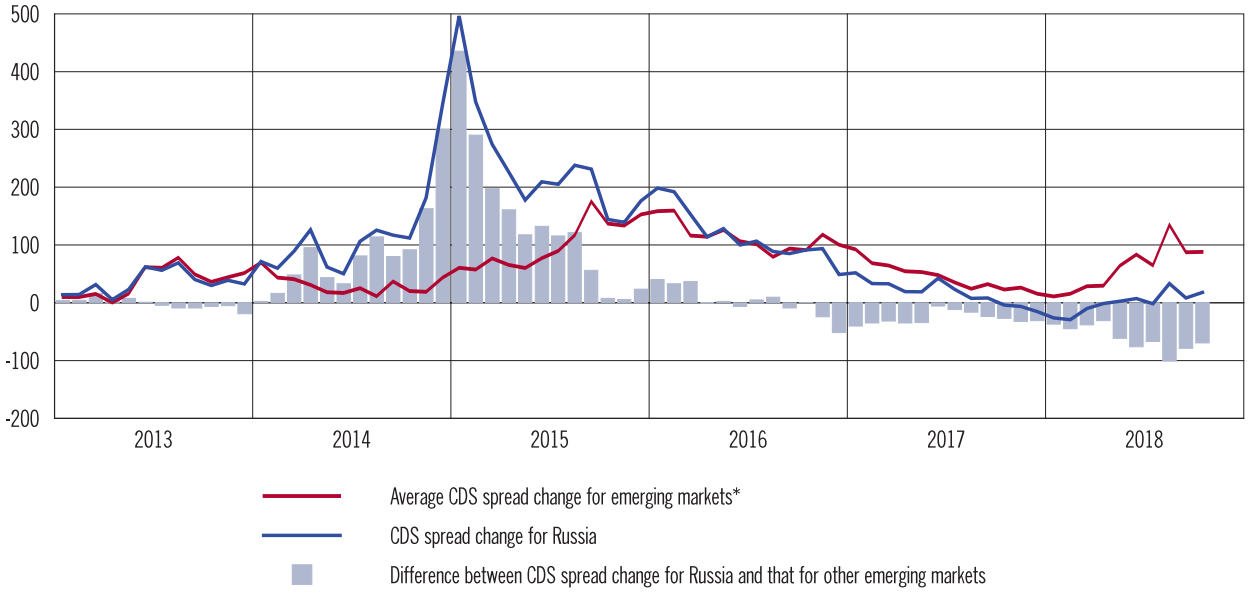
** According to BPM5.*
*** 2018 Q3 – Bank of Russia estimate.*
Source: Bank of Russia.

$19.7 billion in the same period of 2017. The running fiscal rule meanwhile partially offset the effect of high oil prices on the domestic market through additionally accumulated oil revenues entering the National Wealth Fund. This acted to reduce the country's reliance on commodity market movements.

The higher export revenues expanded opportunities for Russian companies investing overseas. This brought about a ramp-up in companies' foreign assets, sending net private capital outflow between January and September to $31.9 billion US dollars. In an environment of operating external sanctions, banks continued to repay their external debt.

In early 2018, Russian assets retained their appeal to external investors, helped by a pickup in the economy alongside a balanced economic policy. Non-residents' demand for Russian assets, government securities in the first place, remained high. It gained support from the February 2018 decision by global rating agency Standard & Poor's to raise Russia's sovereign rating to investment grade. Nevertheless, the situation changed between the second and third quarter. The toughening in US sanctions against Russia combined with strengthened rhetoric over sanctions in April and August to cause a deterioration in market participants' sentiment and expectations, an increase in Russia's risk premium and foreign capital outflow from Russian assets. First, there was a sell-off of non-residents' sovereign securities in the secondary market, as the first quarter's net foreign capital inflow to the general government sector gave way to outflow in the second and third quarters. As a result, growth in volatility was observed in the foreign currency market together with a weakening in the ruble and a fall in the stock market. Beyond the protracted nature of sanctions, mounting risk aversion across global markets led to Russia's risk premium having settled at new highs. The decline in investor appetite for risk assets, including those of emerging market economies, was driven by a deteriorated growth outlook for some emerging market economies, as well as growing uncertainty over state policy measures in major economies. In particular, noted were strengthened tensions in global trade (announcements about mutual trade restrictions, both current and forthcoming) and concerns over the pace of US monetary policy normalisation. As inflation accelerated in the

Change in risk premium in Russia and emerging markets
(bp)



** Average CDS spread for emerging markets is based on data for Brazil, China, Turkey, Mexico, and Malaysia.*
Sources: Thomson Reuters, Bank of Russia calculations.

US over the course of the year and the US Federal Reserve System (US Fed) toughened its rhetoric, investors revised their expectations towards a faster pace of US monetary policy normalisation.

In order to reduce foreign currency market volatility and its influence on price movements, the Bank of Russia in August decided to suspend foreign currency purchases, in the domestic market, being made under the fiscal rule through September. In September, the regulator extended this decision through the end of 2018. The decision regarding foreign currency purchases in the domestic market postponed in 2018 will be made once regular purchases resume and with due regard to the actual state of financial markets. This decision combined with the September key rate increase and a certain stabilisation in the external environment to drive reduced volatility in the financial market between the second half of September and October. At the same time, the high uncertainty over future external conditions and their impact on financial asset prices remained. Moving forward, yield growth in advanced economies will combine with capital outflow from emerging markets alongside geopolitical factors to strengthen volatility in financial markets, weighing on exchange rate and inflation expectations.

A changing country risk premium feeds through to returns on Russian assets, capital inflow, the ruble exchange rate and, ultimately, inflation. Therefore, the risk premium level has major implications for the macroeconomic forecast and key rate decisions. Other things being equal, things being equal, the steady increase in the country risk premium, triggered by changing external conditions, made the Bank of Russia's estimate for the neutral rate tilt closer to the upper bound of the 6-7% range.

The weakening of the ruble in April and August came as a source of proinflationary pressure. Even so, consumer demand, which saw sustained moderate growth helped in part by the current monetary policy, prevented companies from making any substantial price adjustments. In the domestic food market, the impact of exchange rate dynamics on prices was partly offset by the constraining effect of abundant supply of several product groups. At the same time, the weaker ruble combined with climbing energy prices to accelerate price growth between May and June. This

fed through to headline inflation movements through accelerated growth in motor fuel prices in the consumer market, as well as through increased costs of domestic producers. Oil product prices stabilised in July on the back of the decision effective 1 June 2018 to reduce excise duties on petrol and diesel fuel; the arrangements with oil majors to curb price growth were also helpful. The decline in oil prices through the end of the year, assumed in the forecast, will help slow oil product prices.

The exchange rate movements to a greater extent weighed on price growth in Russian regions with higher incomes. The proportion of imports in these regions' consumption is higher than elsewhere. Also, with higher solvency, sellers have better opportunities to raise prices without undermining demand. Price growth rates in these regions therefore remained above the national average – about 3.5% between January and September (Moscow, the Moscow and Nizhny Novgorod Regions). At the same time, inflation edged above 4% in August-September in a number of regions.

The weakening of the ruble in April and August is set to move inflation in 2018 higher than the Bank of Russia's estimate at the beginning of the year. Having said that, the magnitude of consumer price acceleration will in no small way depend on change in economic agents' inflation expectations. **The Bank of Russia estimates the contribution of exchange rate movements to annual inflation to total about 1 pp by the end of 2018. Inflation in 2018 is forecast to total 3.8-4.2%. The Bank of Russia will closely watch movements in inflation expectations considering that the risks of their sustainable rise are still in place.**

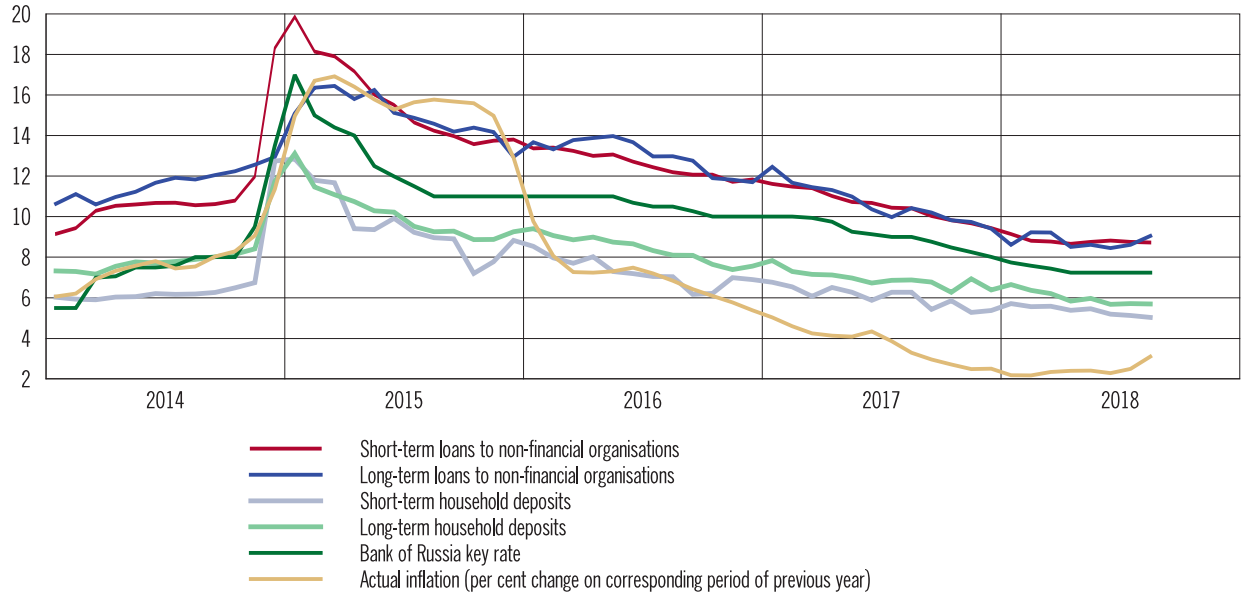
Domestic conditions

Overall domestic economic conditions remained benign. The Russian economy continued to grow at paces the Bank of Russia considers consistent with its long-term potential. Importantly, economic growth was progressing without excessive growth in inflationary pressure, which was aided by the monetary policy stance. The key rate revisions ensured that ruble savings remained attractive, with credit to the economy expanding commensurate with growing incomes. As a result, the expansion in consumer and investment demand was not outpacing the potential supply expansion.

Monetary conditions continued to loosen in early 2018, albeit retaining a slight degree of tightness. The loosening of monetary conditions was predominantly influenced by lower interest rates in the economy. This process was mainly driven by Bank of Russia key rate downgrades implemented between 2017 and early 2018. Sustainably low inflation alongside a continued decline in inflation expectations was also driving down market interest rates. However, monetary conditions have begun to tighten since May, largely under the impact of external factors. In the aftermath of toughened restrictions and strengthened rhetoric over sanctions in April and August, the country risk premium climbed persistently higher, pushing up yields on government and corporate securities. Interest rates in the deposit and credit market edged higher. Interest rates were further shaped by the Bank of Russia's key rate decisions and changes in monetary policy signals between April and October. Non-price lending conditions were virtually unchanged throughout the year. In an effort to enhance the quality of their loan portfolios, banks retained a conservative approach towards borrower solvency assessments.

The established monetary conditions secured an increase in lending in line with growing incomes. Lending gained further support from borrowers' enhanced opportunities to serve their debt in the context of receding debt burdens as interest rates declined. Lending expanded at 10.1% as of 1 October 2018 (adjusted for foreign exchange

Interest rates on banks' ruble transactions and the Bank of Russia key rate
(% p.a., unless indicated otherwise)



Source: Bank of Russia.

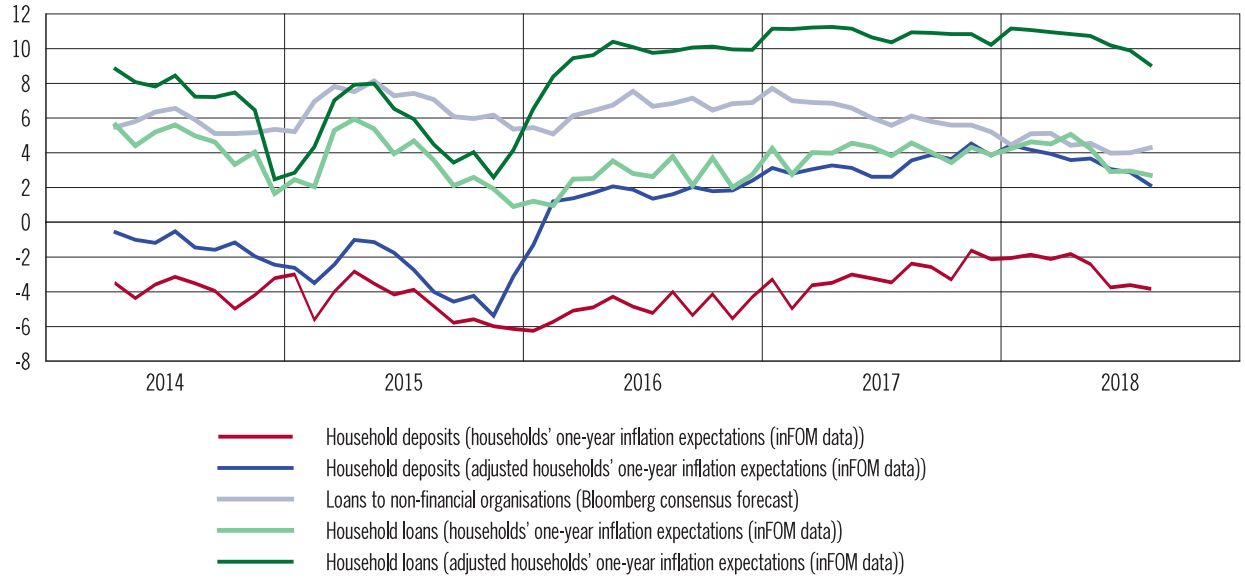
revaluation). Retail lending grew the fastest. Growth in corporate lending remained moderate. The increase in domestic credit was the main driver of money supply growth. As money supply expanded amid stable economic growth and low inflation, monetisation of the Russian economy continued.

The expansion in lending supported consumer demand. At the same time, sustainably positive real interest rates secured the attractiveness of ruble deposits for households. Household ruble deposits continued to grow. Their decline registered in August and September was associated with a local shrinkage of real household incomes caused, among other things, by the decrease in other income (including undisclosed earnings and income from foreign currency sales). Overall, ruble deposits of households grew by 9.9% YoY as of 1 October 2018. At the same time, as of the beginning of October 2018, households' FX deposits (in dollar terms) shrank by 7.3% against the beginning of October 2017. The sustained interest in ruble-denominated assets supported the saving ratio. Having said that, expanding lending was beginning to show a downward trend, which suggests that households are shifting from a saving behaviour model towards growing consumption[2].

Even though retail lending did not obstruct sustained price stability, in an effort to curb excessive risk-taking in the banking sector (as banks sought to step up lending in this segment), the Bank of Russia took a number of macroprudential measures. Effective from early 2018, capital adequacy requirements were tightened on mortgage loans with low down payments; on 1 September, revisions were made to the scale of increased risk ratios for consumer loans used for calculating capital adequacy ratios. Separately, aiming to secure the stability of credit institutions, the Bank of Russia continued its efforts to gradually roll out Basel III regulatory framework. In 2018, regulatory capital buffer and liquidity requirements on credit institutions were increased. These macroprudential and banking regulation measures will foster the emergence of a safety cushion banks will have in case risks materialise. They will also warrant banking

[2] *The strong short-term reduction in the saving ratio in April was largely triggered by slower growth in foreign currency assets as the ruble weakened.*

Real interest rates on long-term bank ruble operations calculated using different inflation expectation indicators
(% p.a.)

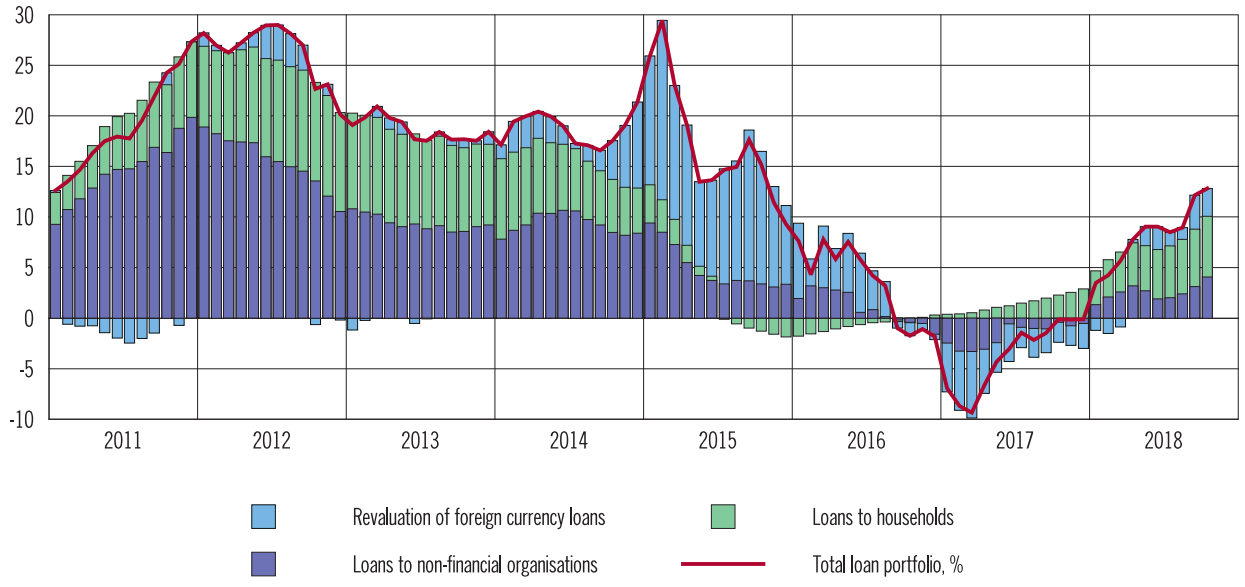


Sources: inFOM, Bloomberg, Bank of Russia calculations.

sector stability, which is pivotal to the normal operation of the monetary policy transmission mechanism. In the conduct of its monetary policy, the Bank of Russia took into account the potential impact of its macroprudential measures on the dynamics of monetary and credit indicators – and this impact is overall viewed as small-scale.

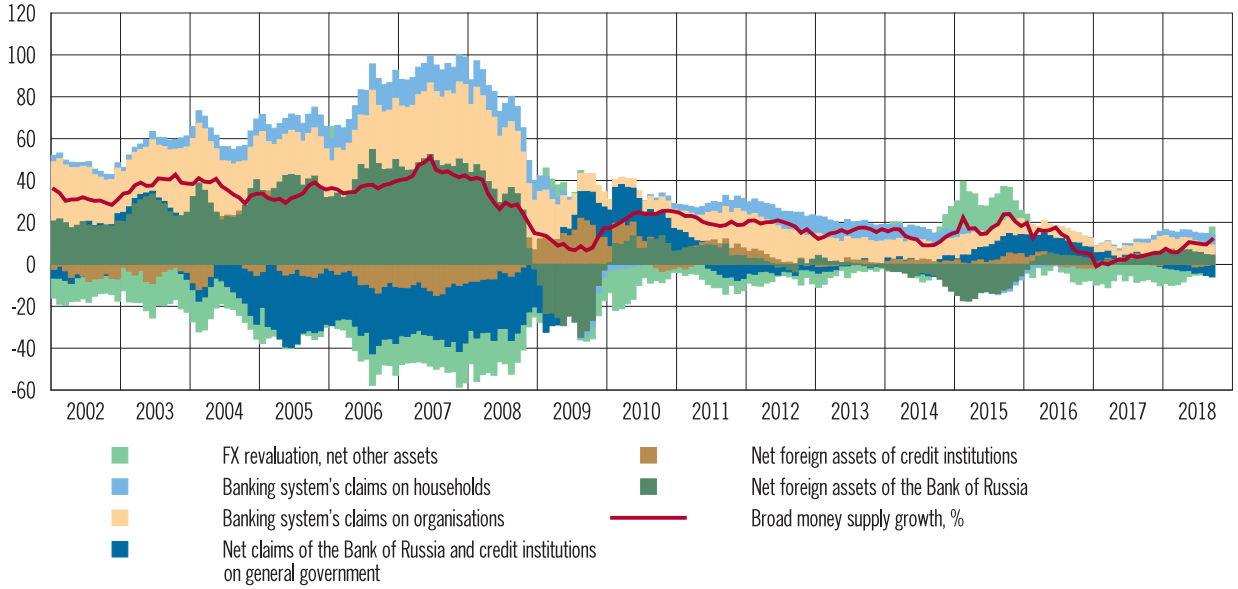
Consumer demand was helped by, beyond growing lending, wage dynamics. Estimates suggest that in September the annual growth rate of nominal wage stood at 10.8%. The Bank of Russia was alarmed about accelerated wage growth early in the year. The emergence of a sustainable trend towards wage growth paces upwards of labour productivity could

Contribution of various components to annual growth of banks' loan portfolio
(pp, unless indicated otherwise)



Source: Bank of Russia.

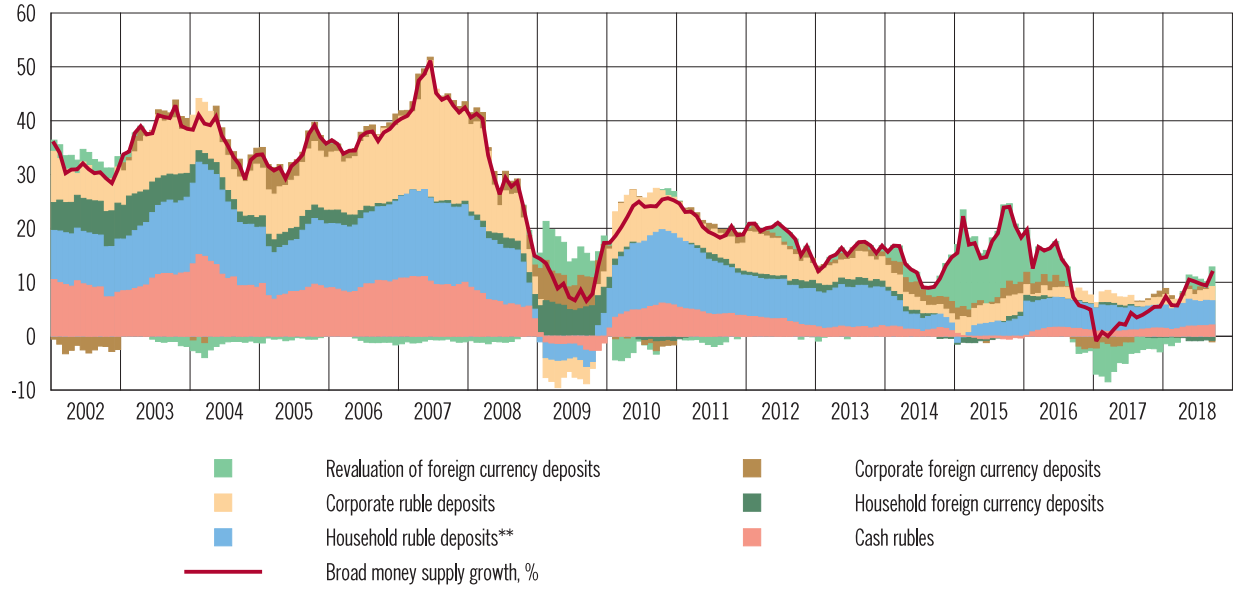
Changes in broad money supply sources*
(contribution to annual broad money supply growth rates, pp, unless indicated otherwise)



** From 01.01.2015, monetary indicators are calculated on the basis on new statistical methodology.*
Source: Bank of Russia.

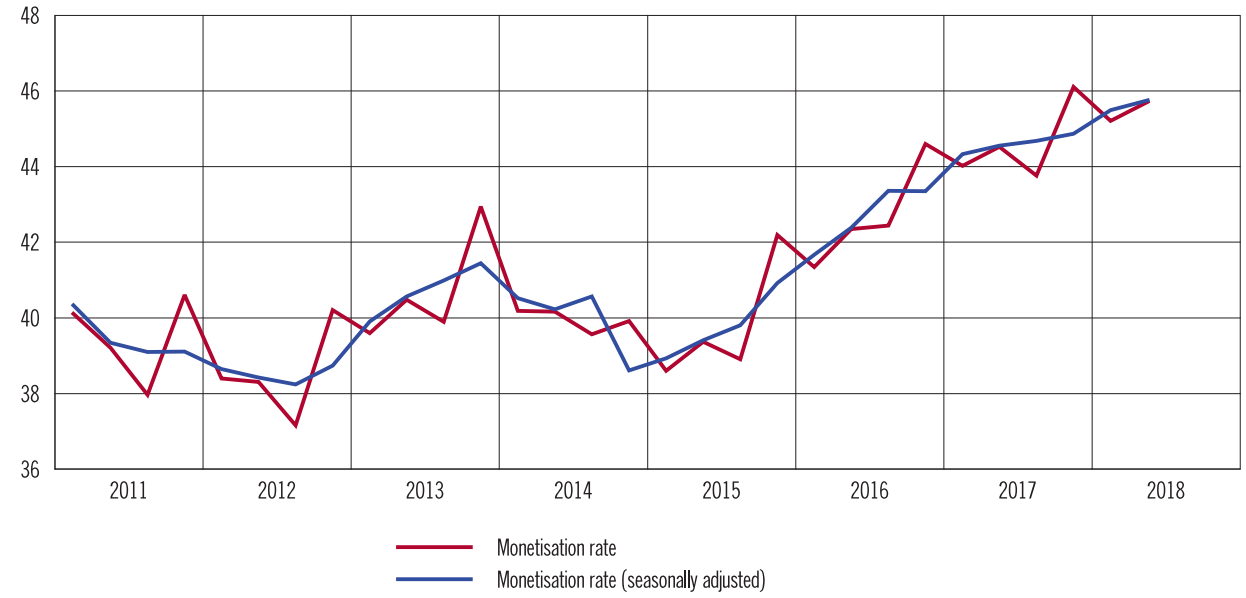
have added to a rise in inflationary pressure. Yet, this marked increase in wages expectedly proved short-lived. This increase came as a result of increased bonus payments in the private sector, as well as substantial gains in the compensation of individual employee categories in the public sector, in line with the Russian President's 7 May 2012 Decree. In April, real wage growth expectedly slowed down to hold close to the average level of approx. 7.3% in the April-September period, compared to 10.1% seen in the first quarter. Also, despite the noticeable increase in labour compensation, growth in real household disposable income was modest.

Changes in broad money supply*
(contribution of various components to annual broad money supply growth rates, pp, unless indicated otherwise)



** From 01.01.2015, monetary indicators are calculated on the basis on new statistical methodology.*
*** Including savings and deposit certificates.*
Source: Bank of Russia.

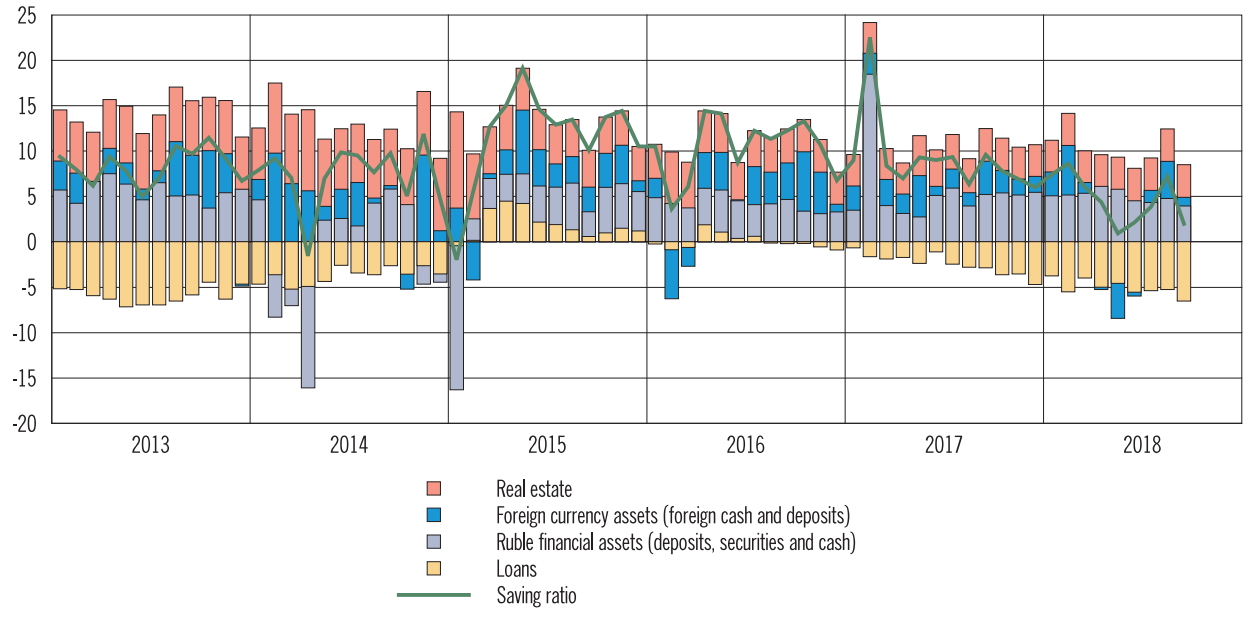
Monetisation of the Russian economy
(quarterly, %)



Source: Bank of Russia calculations.

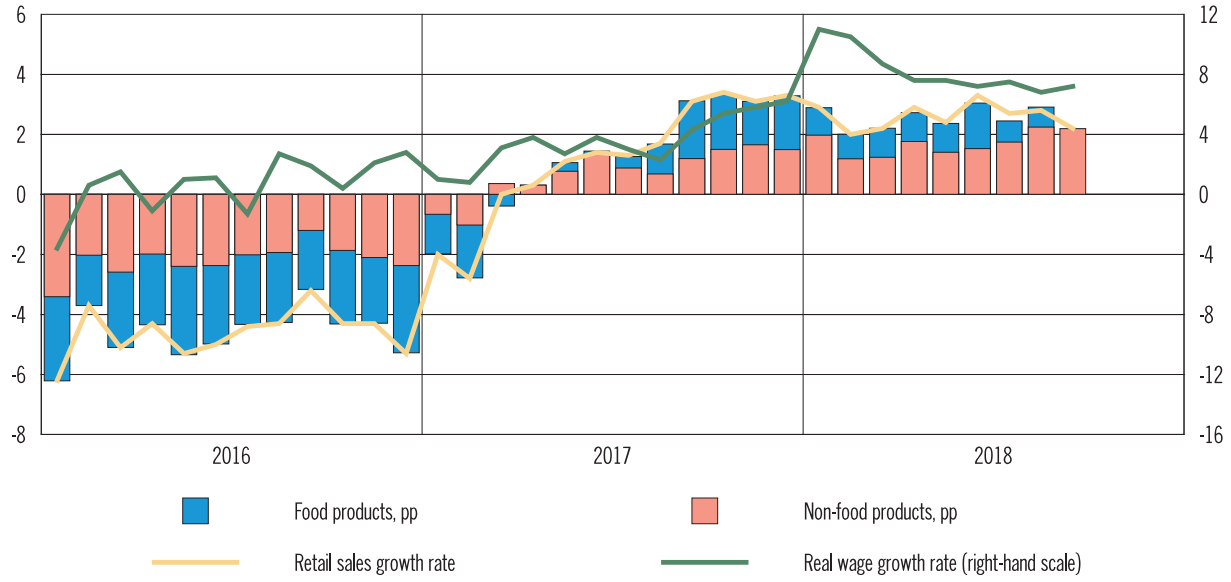
The expansion in consumer demand tracked output expansion, not outrunning it and creating no inflationary pressure. Gradually increasing consumer activity helped raise business confidence, creating incentives for a further increase in output and investment. However, the tightening of US sanctions against Russia and tough sanction rhetoric in April and August resulted in increased uncertainty, with companies giving an increasingly more cautious outlook for future demand and investment expansion plans. Whereas the first quarter saw companies increasing their demand for imported investment goods as the ruble was relatively strong, growth of investment goods imports slowed as early as April as the ruble

Changes in saving ratio components, seasonally adjusted)
(share in income, %)



Sources: Rosstat, Bank of Russia calculations.

Retail sales and real wage changes
(as % on corresponding period of previous year, unless indicated otherwise)

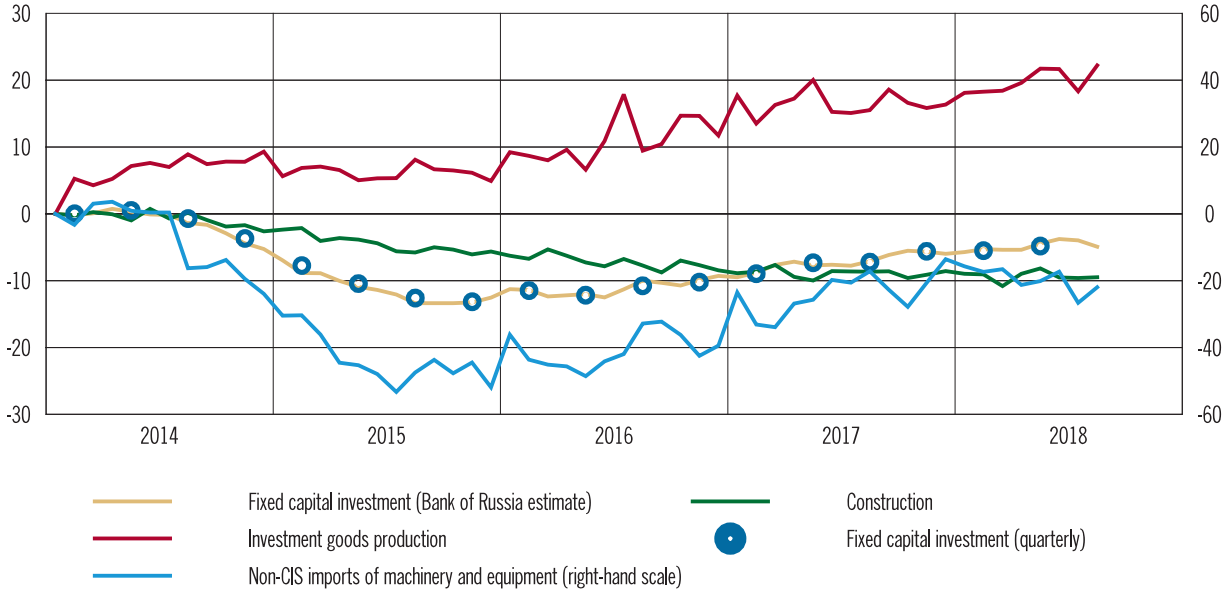


Sources: Rosstat, Bank of Russia calculations.

depreciated. Stagnating construction and lower output of construction materials added to investment activity constraints. According to the Bank of Russia's estimate, gross fixed capital formation will post a 1.5-2.0% increase in 2018.

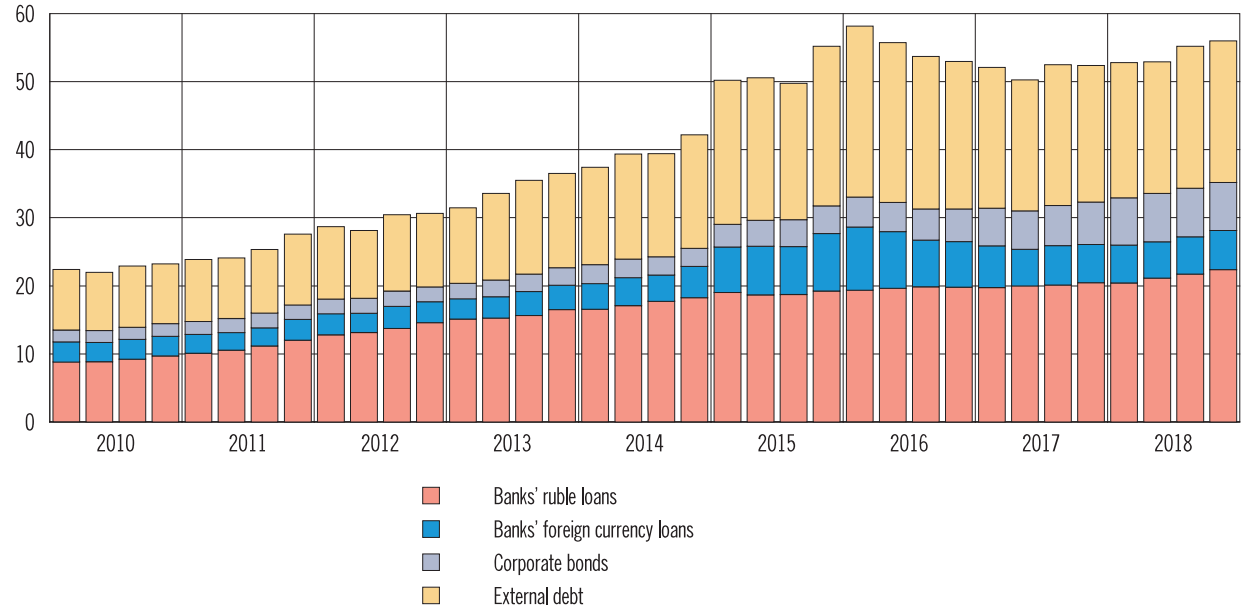
Production and investment activity was supported by the easing of lending conditions at the beginning of the year. Companies also continued to partially meet their needs for investment through bond issuances. This was helped by more favourable financial conditions in the debt market in comparison to those in place in 2018. Companies' capital meanwhile remained the key source of their investment costs.

Investment activity indicators*
(seasonally adjusted, growth as % on January 2014)



** Bank of Russia estimate including revised industrial output data starting from 2017.*
Sources: Rosstat, Federal Customs Service of Russia, Bank of Russia calculations.

Russian corporate sector liabilities
(trillions of rubles)

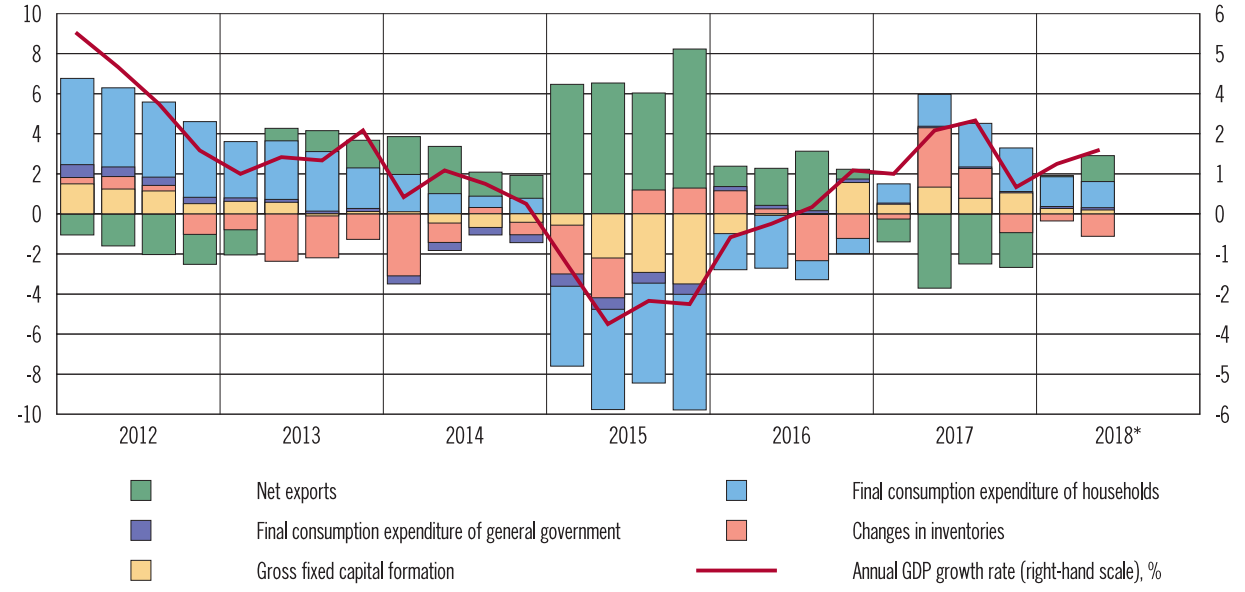


Sources: Bank of Russia, Cbonds.

In the context of the current conservative fiscal policy stance, including the sustainable budget consolidation strategy, government spending remained moderate. It was limited to increased revenue under the fiscal rule. This enabled low inflation risks from the fiscal policy side, which could be triggered by budget expenditure adjustments.

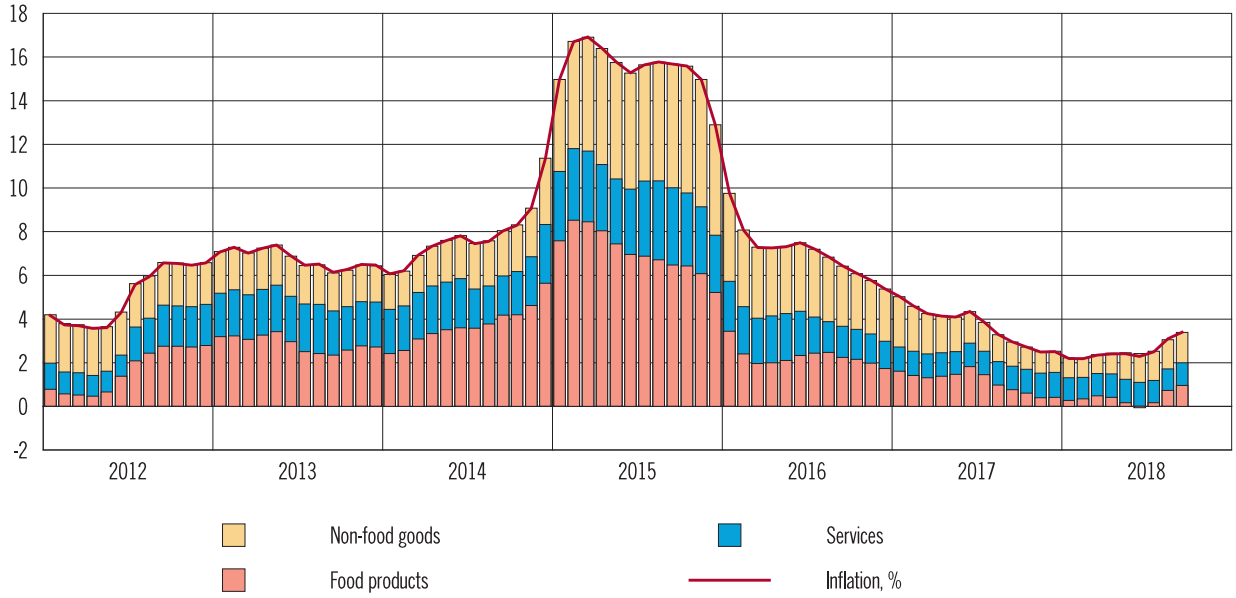
Rising domestic and external demand underpinned economic growth. According to the Bank of Russia's estimates, annual GDP growth in 2018 will stand at 1.5-2.0%. Output in the economy is close to potential, suggested by, among others, the load of production factors – labour and capital. Unemployment remains low (the January-

GDP growth structure by expenditure
(pp on corresponding period of previous year, unless indicated otherwise)



** Bank of Russia estimate including revised industrial output data starting from early 2017.*
Sources: Rosstat, Bank of Russia calculations.

Inflation and its components
(pp on corresponding period of previous year, unless indicated otherwise)



Sources: Rosstat, Bank of Russia calculations.

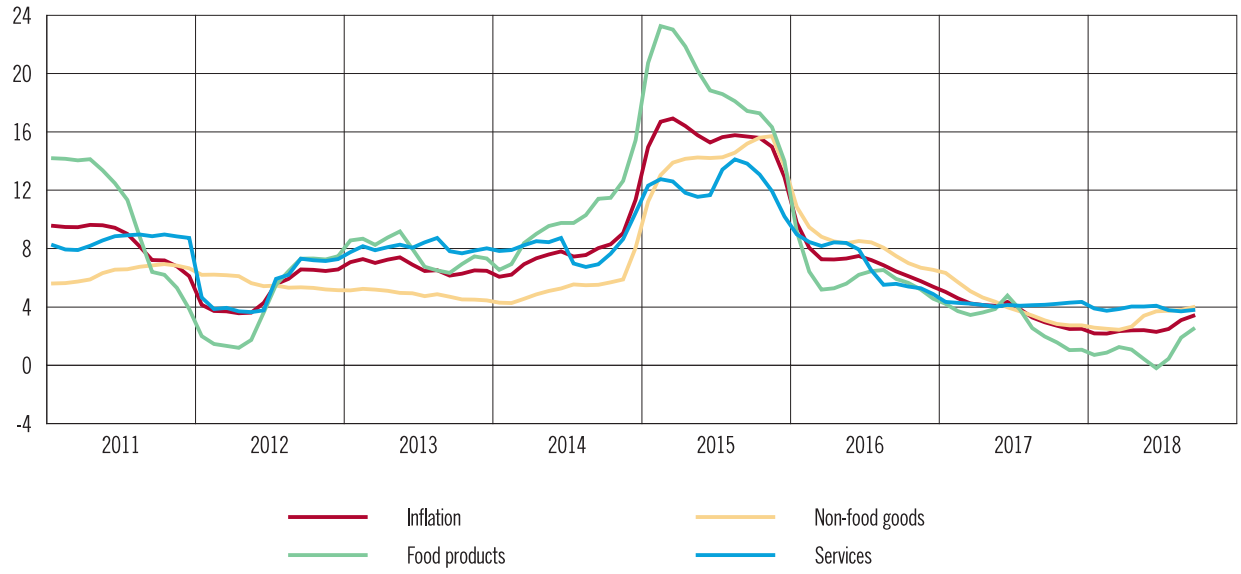
September average is 4.8%) and close to a natural rate. This suggests the economy is operating with full employment. Capacity utilisation remains close to historical highs (evidenced by Rosstat surveys, Russian Economic Barometer (REB) and Bank of Russia's corporate monitoring data. The meaningful rise in output thanks spare capacities looks impossible given the obsoleteness of most of them and limitations on the labour resource side.

Inflation sustainably below 4% (between 2.2% and 2.4%) in the first half of the year came largely as a result of the impact of food supply factors on price changes. The bumper harvest of past years, rising outputs of greenhouse products, the advancement of dairy and cattle farming secured abundant supply of domestic agricultural products in the domestic market. This worked as a factor constraining food price growth paces. More so, the global food market environment proved overall benign, placing no further proinflationary pressure on domestic prices. In this setting, annual growth paces of food prices rates between January and May stayed within 1.3%, whereas in June they declined 0.2%.

The impact of abundant supply of agricultural products was most noticeable in some of Russia's regions where income levels are lower. The level of income influences the consumer basket structure: regions with lower income levels have higher average proportions of food products in their consumption. As a result, average annual growth rates of consumer prices in these regions were below the national average by 1.6% between January and September (the Republic of Dagestan, Kabardino-Balkar Republic, the Republic of Mordovia, Sevastopol).

When analysing movements in food prices and their overall impact on inflation, the Bank of Russia looked into the nature of factors which led to a rate of inflation sustaining below 4% in the first half of 2018. On the one hand, the rich harvest thanks to the favourable weather is nothing more than a short-term factor. Given the available data on how harvesting is progressing, current year yields are on track to be fairly high albeit below the previous two years' record readings. This will lead to gradually rising growth rates of prices for grain products and food overall, from atypically low readings. On the other hand, the long-term

Prices of consumer goods and services
(per cent change on corresponding period of previous year)



Source: Rosstat.

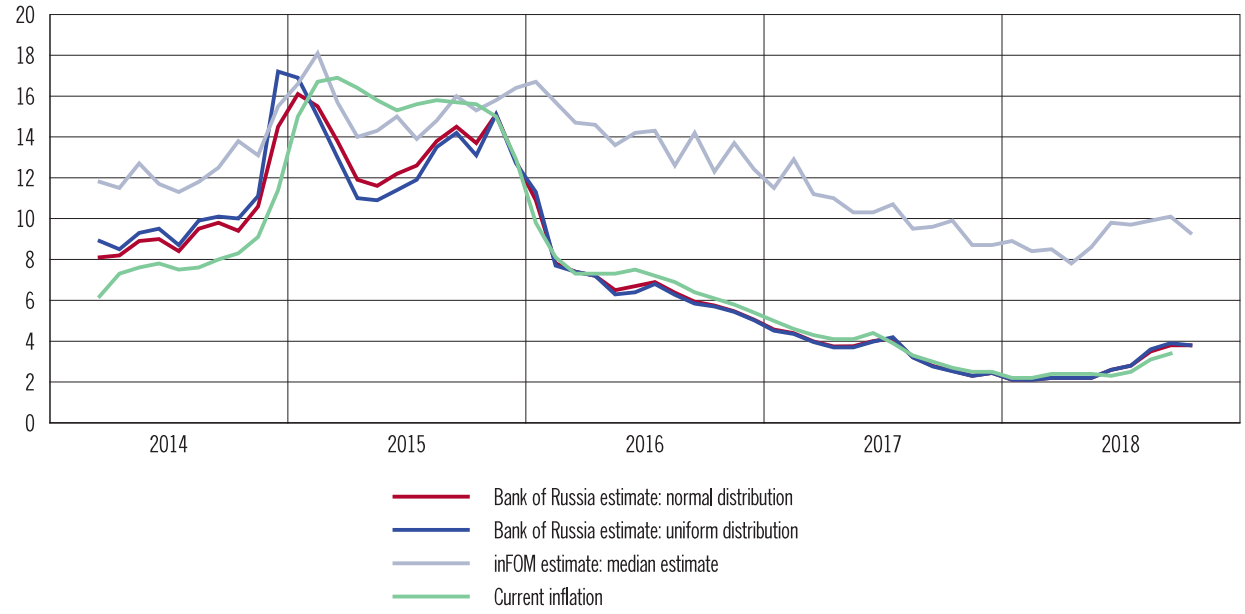
investment fostered growth of the agricultural sector's production capacities. The impact of these changes is set to be extended; they reduce the risk of substantial fluctuations in food prices. Having said this, these processes will take time to further develop and strengthen. **Hence, in the first half of 2018, the impact of one-off factors on the food market proved more substantial, while the 4% inflation deviation they had induced proved short-lived. Between August and September, as the transitory factors run their course, food prices saw accelerated growth paces, with their contribution to inflation growing.**

Early in the year, sustainable price stability was also helped by declining inflation expectations. At the same time, they remained sensitive to the impact of short-term inflation factors. In this way, although having given a measured response to the April rise in ruble exchange rate volatility, household inflation expectations posted a more substantial increase in May on the back of accelerated growth in petrol prices. In response to the two events, companies moved to adjust their inflation expectations upwards. The second ruble weakening episode in August also helped inflation expectations maintain between August and September at a high level.

Beyond exchange rate dynamics, inflation expectations are also likely to come under pressure from a hike in prices driven by the unveiled VAT rise due in early 2019. The strongest effect of this step is likely to manifest itself next year. More so, a certain leading price adjustment this year is also possible. Inflation acceleration on the back of increased VAT and a weaker ruble may bring about a persistent increase in inflation expectations, which may entail inflation settling at an elevated level.

The predicted acceleration in inflation driven by a weaker ruble and the 2019 increase in VAT, together with their potential impact on inflation expectations, emerged as reasons for the key rate to be held at 7.25% per annum from April to August, as well as its hike in September to 7.50% per annum and the subsequent decision to keep it unchanged in October. According to the Bank of Russia's estimates, the envisaged VAT increase, alongside the weakening in

Estimates of household inflation expectations for one year ahead
(%)



Sources: inFOM, Rosstat, Bank of Russia calculations.

the ruble which has occurred since early this year, is expected to accelerate annual growth of consumer prices to 3.8-4.2% by late 2018. Inflation is set to accelerate in the course of 2019 to 5-5.5%, subsequently returning to 4% in the first half of 2020. The Bank of Russia will explore the need for further upgrades to the key rate, taking into account inflation and economic developments against the forecast, as well as the risks of external conditions and the response of financial markets.

4. MACROECONOMIC SCENARIOS AND MONETARY POLICY IN 2019-2021

The Bank of Russia considers two main scenarios for the medium-term economic development forecast: the baseline scenario and a scenario which assumes oil prices are unchanged. They differ primarily in terms of assumptions for external conditions for the Russian economy, with which most uncertainty over the medium-term horizon is associated. In addition, Bank of Russia scenarios include a risk scenario seeing a marked deterioration of external conditions.

The Bank of Russia's forecast scenarios are built on both assumptions about external conditions and those about several domestic conditions. These factors are set to have a marked impact on the economy and inflation in the years ahead and therefore shape objective conditions for the conduct of monetary policy. Most of these conditions are common to all scenarios. However, the strength and specifics of their impact on the economy and inflation may to a certain extent vary depending on the scenario, as detailed below.

Domestic conditions

First, domestic monetary policy conditions include structural factors. Among these are the current structure of the Russian economy and the specifics of evolution of households' expectations and preferences, as well as constrains associated with the dynamics of production resources, especially labour resources, given that they are largely determined by demographic trends. These specifics may change, but it usually takes a considerable time (beyond the medium-term horizon), and monetary policy cannot directly influence their change.

Second, domestic monetary policy conditions are influenced by other economic policies. If implemented, these measures are set to have a significant impact on inflation, current and potential rates of economic growth and its structure, creating additional incentives for a certain behaviour of households and businesses – which monetary policy must take into account.

Over the forecast horizon of three years and through 2024, there are plans to implement an entire range of tax and fiscal policy measures and transformations[1] with a view to mitigating current structural constraints on the development of the Russian economy (the Bank of Russia mentioned these constraints in the 2018-2020 Monetary Policy Guidelines). This is a package of measures to receive extra funding in the amount of 1% of GDP annually throughout the forecast horizon (circa 8 trillion rubles for 2019-2024, to a total of circa 13 trillion rubles inclusive of previously committed funds). In particular, the main areas of additional expenditure include, among others, healthcare, education, demographics and social policy, science and culture, encouraging non-commodity exports and infrastructure investment.

First of all, the effective implementation of these measures can help increase the potential growth rate of the Russian economy. This may happen in the event of an improved investment climate, increased human capital and productivity, better quality of governance at all levels in both the public and private sectors, incentives for investment

[1] *Socio-economic measures to deliver on the Decree of the President of the Russian Federation No. 204, dated 7 May 2018.*

activities, and a transition to an investment-focused economic growth model. **Second, the successful implementation of structural measures may at the same time reduce the sensitivity of inflation to certain external and domestic factors.** In particular, this may occur as a result of reduced dependence of the Russian economy on exports of energy resources, increased competition, and the development of transport and logistics infrastructure. **Third, the planned measures may have some impact on the structure of economic growth.** They will be aimed at, among other things, accelerating the growth of investment and gradually increasing their share in the structure of total output, in particular, through the establishment and use of the Development Fund (in the amount of about 0.5% of GDP per year throughout the forecast horizon).

At the same time, measures in these areas by force of their nature have long-term horizons of delivery: these projects will normally take a long time to become implemented, while what they target – the institutional and structural characteristics of the economy and demographic trends – change slowly. **In this regard, the Bank of Russia assumes that the planned fiscal and structural measures will have a significant impact on the rate and structure of growth in the Russian economy towards the end of the three-year forecast horizon, mainly in 2021.** This impact will then continue to materialise and may become most significant beyond the forecast period. The Bank of Russia assumes that the positive contribution of planned state policy measures to increasing the rate of economic growth will not be accompanied by additional upward pressure on inflation if there is the relevant expansion in the production capacity of the Russian economy. At the same time, any specific quantification of the scale and timing of the impact made by the set of measures on economic growth and inflation is currently associated with high uncertainty, since the parameters of this impact will depend on the speed and efficiency of the implementation of the planned measures. This assessment will be clarified as more details on the cost structure and the set of measures and projects in specific areas become available, as well as in the course of their implementation. In this regard, the Bank of Russia provides a relatively wide range of forecasts for economic growth rates in 2021.

The planned increase of the retirement age may have an impact on the economic growth rate over the forecast horizon, that is, this impact may come earlier and its scale more expressed. The reform should lead to an additional annual increase in the number of employed in the economy and, accordingly, accelerated GDP growth (all other things being equal) – compared to the scenario assuming no rise in the retirement age. At the same time, it will bring no proinflationary effects considering that this increase will be associated with the commensurate production capacity expansion. This additional GDP acceleration will be moderate considering that labour productivity of senior employees is somewhat lower than the average productivity in the economy. The Bank of Russia estimates it to total about 0.1 pp in 2019 and 0.2-0.3 pp in 2020-2021. The rise in the number of soon-to-retire employees is to have a constraining effect on wage growth on the back of growing labour supply, which is set to mitigate the labour shortage problem and set off the consequences of adverse demographic trends. The Russian Government's measures are set to further support employees nearing retirement, boost human capital and labour mobility. This suggests that the increase in the retirement age, supported by the above-mentioned government measures, will put no upward pressure on inflation.

Maintaining the policy of about 4% indexation of administered prices and rates will be critical to maintaining inflation and inflation expectations at the target level as well as to moderating cost pressure on

prices. Also, it is important to implement these principles consistently at both federal and regional levels.

Fiscal policy will remain to be accorded with the fiscal rule over the forecast horizon. This will mitigate the response of fiscal policy parameters, the exchange rate, the economy and inflation to fluctuations in global oil prices: their sensitivity to changes in oil prices will remain at the 2017-2018 low levels. The Bank of Russia considers this when making its medium-term forecast. The decision regarding foreign currency purchases in the domestic market, postponed through the end of 2018, will be made with due regard to the actual state of financial markets. The decision regarding the foreign currency purchases in the domestic market which were postponed in 2018 will be taken after regular purchases are resumed. Exclusively for the purposes of model-based calculations in support of macroeconomic forecast scenarios, the Bank of Russia assumes that foreign currency purchases suspended in 2018 will be implemented evenly over the whole forecast horizon of 2019-2021. At the same time, a significant change in external conditions, in particular, a drop in oil prices below the level specified in the fiscal rule, may somewhat modify the parameters for implementing the above-mentioned fiscal stimulus measures and their sources of financing, which is taken into account for the high-risk scenario.

In its forecast, the Bank of Russia considers, in addition to the direct effects of planned socio-economic measures, their indirect effects. These effects are in part related to the fact that the financing of these transformations involves both the creation of additional incentives to attract private investment and increased public spending in certain areas. The financing of additional budget expenditures (about 8 trillion rubles over six years) will require an increase in public debt and in the revenue base through an increase in the value added tax (see the draft Guidelines for Fiscal, Tax and Customs and Tariff Policy for 2019 and the 2020-2021 Planning Period). **Over the forecast horizon, a 2 pp increase in the standard VAT rate effective 1 January 2019 will have a significant impact on inflation and inflation expectations.** However, the scale of inflation change will be smaller than the expected tax increase. To determine it, the Bank of Russia takes into account, among other things, the weight of VAT in the retail price structure; the number of goods and services in the consumer basket subject to preferential VAT rates, which will not be raised; and the share of enterprises that do not pay VAT under the simplified taxation system. According to the Bank of Russia's estimates based on similar episodes in the experience of Russia and other countries, as well as on the July 2018 survey of Russian enterprises of a broad sample, the price response to the VAT increase will materialise mostly in the first months of 2019.

Initially, the VAT increase will have a one-off impact on prices, that is, it will lead to a non-recurring rise in the price level. In terms of annual inflation, this effect will be reflected throughout the year, but current (monthly, quarterly) rates of inflation will significantly increase only in the short term, including in the first months of 2019, declining thereafter. **At the same time, the ultimate scale of an impact from increased VAT on inflation will depend on the scale of its secondary effects, such as how profound and sustained the increase in inflation expectations will prove, and the extent to which manufacturers and retailers will be ready to absorb some tax increases as costs without passing them on completely to prices.** Moderately rising consumer demand could limit the scale of the VAT increase pass-through to prices, as a higher tax burden on households will have a small negative impact on consumer activity dynamics, primarily in early 2019. Given all these effects, the Bank of Russia estimates that in 2019 the contribution of the VAT increase to annual inflation will be about 1 pp (see Appendix 4 and the Report

on the Estimated Impact of the Increase of the Standard VAT Rate on Inflation, August 2018).

Over the forecast horizon, inflation will come under further upward pressure from the tax manoeuvre in the oil and gas industry. However, its effect will be modest. The tax manoeuvre impact is materialised directly through the immediate contribution to inflation of more expensive petrol and diesel fuel, as well as through the indirect effects of growing production costs of other consumer products and services as a result of rising domestic oil and oil product prices. The magnitude of this indirect effect is estimated to be weaker than the direct one. The aggregate contribution of the tax manoeuvre to inflation will vary depending on the scenario given its dependence on global oil price movements, among other factors. Growing oil prices will take the tax manoeuvre contribution higher, whereas their decline will send it down. The Bank of Russia estimates the contribution of the tax manoeuvre to annual inflation in 2019 to total about 0.1 pp in the baseline scenario and on the order of 0.3 pp in the unchanged oil price scenario. The baseline scenario suggests that in 2020, as global oil price commodity prices decline, it may dip into negative territory, while the unchanged prices scenario assumes it will be moderately positive. Barring meaningful oil price fluctuations in 2021, the contribution to annual inflation in both scenarios will make up about 0.2 pp and will mainly be determined by tax manoeuvre changes whereupon Finance Ministry projections are based. The Bank of Russia estimates the impact of the tax manoeuvre on economic growth paces over the forecast horizon to be negligible.

The Bank of Russia's measures aimed at developing the financial market and effectively transforming household savings into domestic long-term investment will provide additional support to the building of favourable conditions to enable increased investment and economic activity over the forecast horizon. This includes measures to develop incentive-based regulation of the banking sector, develop the 'long money' segment, improve the quality of corporate governance, and develop the insurance sector and the trust management and collective investment sector[2]. The Bank of Russia takes into consideration that these measures are more likely to have a pronounced impact on economic growth rates only in conjunction with measures in other areas of economic policy and that their response time is protracted. Estimated impacts of these measures on monetary policy conditions and the overall economy will become more specific as the package of measures and projects in individual areas, as well as their progress. Bank of Russia efforts towards improved financial inclusion and financial literacy[3] can help increase the share of households actively using financial products and services, thereby contributing to a more effective transformation of domestic savings into domestic investment. Over the forecast horizon, this may improve the effectiveness of the monetary policy transmission mechanism, mitigating to a certain degree the impact of the structural specifics of the Russian economy, e.g. high income differentiation and a relatively small share of the middle class, which limit the impact of interest rates on household behaviour (see the 2018-2020 Monetary Policy Guidelines). The Bank of Russia's measures aimed towards better regulation of the market[4] for derivatives used for hedging are set to foster the stability of Russian institutions in the face of financial market volatility.

As market funding becomes increasingly available, the Bank of Russia plans to continue implementing its strategy for exit from specialised refinancing instruments. This process will be gradual and its progression

[2] *For details see Section III paragraphs 3, 4, 16, 18 and 19 of the draft Guidelines for the Development of the Russian Financial Market in 2019-2021.*

[3] *Guidelines for the Development of the Russian Financial Market in 2019-2021.*

[4] *Guidelines for the Development of the Russian Financial Market in 2019-2021.*

will depend on the subsequent increase in available market sources of financing and overall change in external and domestic conditions which shape credit, investment, and economic activities. An important principle will be the non-deterioration of terms for previously provided loans.

The Bank of Russia assumes that inflation expectations over the forecast horizon will remain sensitive to one-time events with an impact on inflation. This is more relevant to household expectations. They are usually characterised by the greatest inertia – that is, they are persistently tracking their previous readings and continue to be affected by the extended period of higher and more volatile inflation, which preceded the Bank of Russia's transition to 4% inflation targeting. The response of inflation expectations to accelerated inflation episodes may be especially pronounced, while the response to lower inflation may be weaker or have a lengthier time lag. Expectations may change both as a result of overall inflation surges (triggered by such factors as exchange rate movements or regulatory measures) and price dynamics for certain mass consumption products under the influence of local factors affecting only specific markets. In this regard, the Bank of Russia assumes that over the forecast horizon, especially at its beginning, even one-time inflationary events, including those caused by supply-side factors, will generate secondary effects and should therefore be considered in monetary policy. In the medium term, inflation stabilising at a point close to 4%, the Bank of Russia's active information policy and efforts towards improved financial literacy (see Section 1 and the draft Guidelines for the Development of Financial Market of the Russian Federation for 2019-2021), will all bring about gradually consolidated inflation expectations across all economic agent groups at a point close to 4%, as well as their lower sensitivity to one-time price fluctuations.

External conditions

External conditions over the forecast horizon have a rather high degree of uncertainty from the global economic outlook and its growth structure standpoint and from the standpoint of major economies' policies including monetary, fiscal, tax and foreign trade policies. These factors can have an impact on capital flows, international trade volumes and prices in global commodity and financial markets. High uncertainty, making markets more sensitive to changes in their participants' sentiment and expectations, can cause short-term volatility spikes in global financial markets over the forecast horizon.

Subject to a given scenario, the Bank of Russia assumes that mid-term external conditions for the Russian economy will be either constraining or neutral. At the same time, their impact on domestic economic conditions, output growth and inflation will be mitigated by the state macroeconomic policy, including the fiscal rule and Bank of Russia policies as part of the inflation targeting regime. Maintaining macroeconomic and financial stability as well as the sustainability of public finances will make the Russian economy less vulnerable to fluctuations in global financial markets compared to many other emerging economies.

The impact of external factors on monetary policy conditions will unfold through several channels. Inflationary pressures in key trading partner countries, expected to remain low throughout the forecast horizon, will translate into domestic price movements through the value of imports. Global economic growth rates will be a key factor driving expansion in Russian exports. The Bank of Russia's baseline scenarios assume economic growth and inflation projections in Russia's trading partners consistent with those by key international organisations.

The dynamics of external interest rates over the forecast horizon will largely be shaped by monetary policy normalisation in advanced economies. In both the baseline scenario and the unchanged oil price scenario, the Bank of Russia assumes a gradual rise in the US Fed rate to 3.25-3.5% by the end of 2020 and throughout 2021. Changes in external interest rates and the risk premium on Russian assets will have an impact on cross-border capital flows and, accordingly, the ruble exchange rate. While estimating the neutral interest rate level, the Bank of Russia will consider changes in external interest rates and risk premiums which are sustainable in the long term. The risk premium will be affected by factors common to emerging markets including global investors' risk appetite and the economic outlook for emerging markets and advanced economies, as well as by Russia-specific factors including geopolitical ones. The Bank of Russia assumes international sanctions imposed on Russia in 2014-2018 to remain in place over the entire forecast horizon.

Energy commodity market developments will continue to have a significant impact on the Russian economy as energy commodities still constitute a relatively high share of Russian exports. This impact will materialise both directly, through export volumes, and indirectly, through movements in capital flows, since changes in oil prices largely determine how foreign investors assess the Russian economy's growth prospects and, therefore, the attractiveness of investment in Russian assets and their risk premiums.

Energy commodity market developments will be shaped by the balance of factors on the demand side, including growth in major economies and the global economy overall, and factors on the supply side – which are more dependent on key energy exporters' decisions and also influenced by geopolitics. These factors combine to generate high uncertainty in the global oil market.

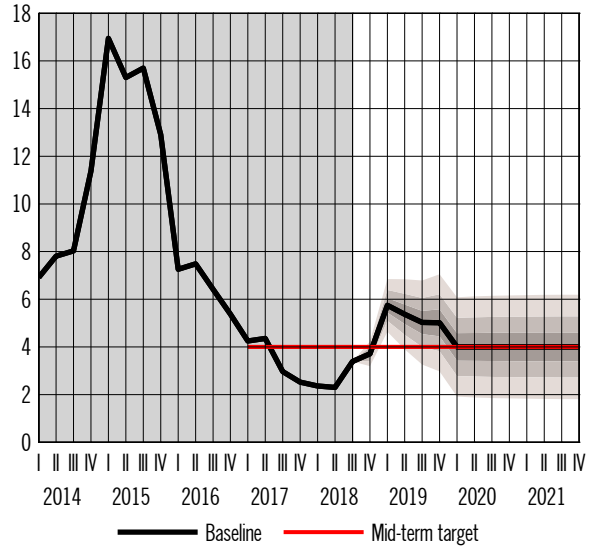
Given persistently high uncertainty with regard to the international economic environment over the forecast horizon as described above, the Bank of Russia considers two main scenarios for the development of external conditions and, furthermore, a risk scenario. They all differ in terms of assumptions about the path of global oil prices.

Baseline scenario

In its baseline scenario, maintaining a conservative approach to prerequisites and based on forecasts for the most likely course of events, the regulator expects sustainable economic growth in Russia's trading partners, a gradual normalisation of monetary policies in advanced economies and gradually declining oil prices from their current highs of more than $70 a barrel to $55 a barrel in 2020-2021. The emergence of this path of oil prices may come as a result of a gradual rollback of the oil output cut deal, with some softening in its terms already noticeable in the middle of this year, alongside steadily growing supply of shale oil. However, with fiscal rule effects in place, the impact on the economy from an oil price downturn is set to be limited.

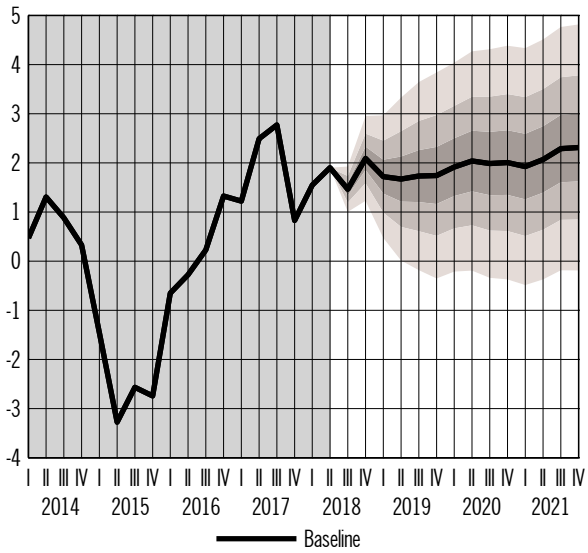
In 2019, the most significant influence on prices will come from the VAT increase. The 2018 weakening of the ruble will also continue to be reflected in the level of annual inflation in the first half of the year. The above-mentioned persistent sensitivity of inflation expectations to one-time factors may amplify the impact of exchange rate movements and the VAT increase on price growth rates. Under the influence of these factors, the annual inflation rate for 2019 will temporarily exceed 4%, peaking in the first quarter. Beginning in 2019 Q2, the impact of these factors on current prices will begin to fade, and quarterly annualised rates of inflation will approach 4% in the second half of the year. **However, annual inflation will**

Inflation
(as % on corresponding period of previous year)



Note: shaded areas on the forecast horizon show the probability of different inflation values. Colour gradation reflects probability intervals.
Confidence intervals are symmetrical and based on historical estimates of uncertainty of inflation.
Source: Bank of Russia calculations.

GDP growth rate
(as % on corresponding period of previous year)



Note: shaded areas on the forecast horizon show the probability of different GDP growth values. Colour gradation reflects probability intervals.
Confidence intervals are symmetrical and based on historical estimates of uncertainty of GDP growth rate.
Source: Bank of Russia calculations.

decrease more slowly in the course of the year due to the VAT increase effect. At the end of 2019, it will be 5.0%-5.5%. To limit the scale and duration of secondary effects of the VAT increase and exchange rate movements and to anchor inflation near 4% in the medium term, the Bank of Russia's monetary policy will need to be tighter than previously estimated.

In 2019, demand changes will put no upward pressure on inflation. During the year, primarily in the first half, a number of factors are set to slightly limit domestic demand expansion. These include the VAT increase and slower rising export revenues following a gradual decline in oil prices, as well as a certain slowdown in lending due to the Bank of Russia's moderately tight monetary policy and revised market expectations regarding the pace of a transition to neutral policy. The Bank of Russia estimates that in this environment the growth of final consumption expenditure of households will slow down to 1.0%-1.5% in 2019. The VAT increase will have a short-term constraining effect on investment activity, which will be offset no later than in 2019 by growing investment demand from the public sector. The Bank of Russia estimates that this results in the annual growth rate of gross fixed capital formation in 2019 being slightly higher than in 2018, totalling 1.8-2.3%[5]. The gradual rollback of the oil output cut deal will provide additional support to export growth in real terms; the Bank of Russia estimates its growth to total 3.2-3.7% by the end of 2019. Overall demand for imported goods will evolve in line with domestic consumer and investment activity, with its growth rate estimated to slow down in 2019 to 2.5-3.0%.

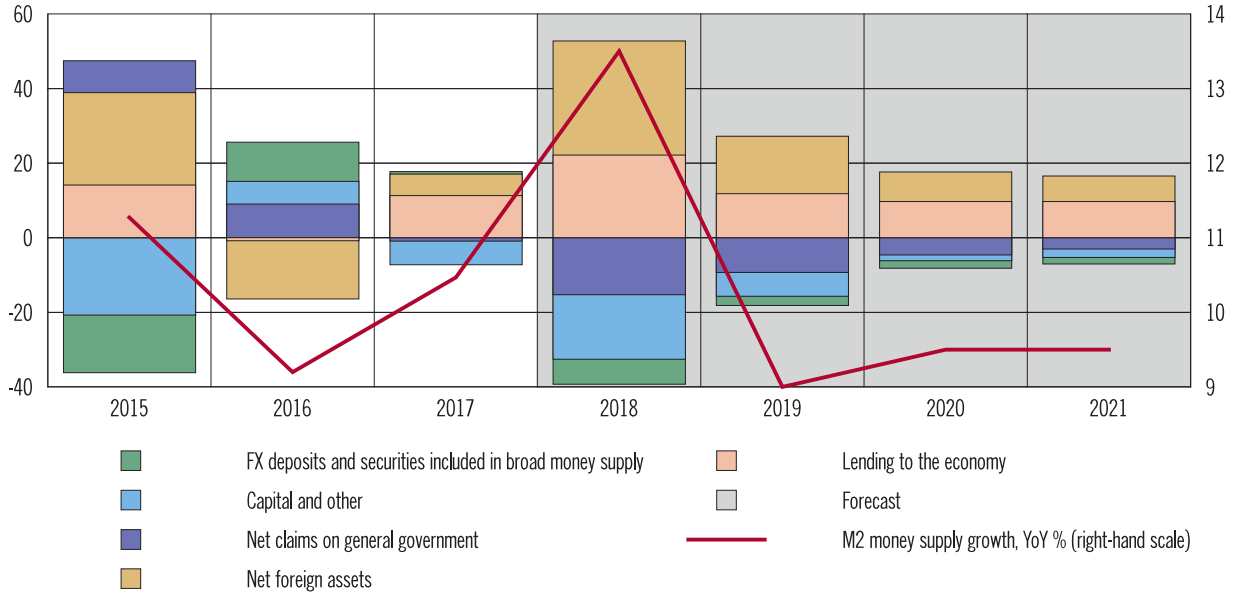
Under the influence of all these factors, economic growth paces in 2019 will be close to their potential readings at 1.2%-1.7%.

In the first half of 2020, as the proinflationary effects of the VAT increase and exchange rate movements that affected inflation and inflation expectations in 2019 are fully exhausted, the growth rate of consumer prices will return to 4% in annual terms. The expected dynamics of inflation and inflation expectations will enable a looser monetary policy stance between late 2019 and early 2020.

Between 2020 and 2021, amid a stabilised external economic environment and continued

[5] *See Footnote 5.*

Decomposition of growth of money supply in national definition
(contribution of components to growth rates of money supply in national definition*, pp)



** In the forecast, decomposition is shown for the growth rate of money supply in the national definition corresponding to the middle of the forecast range.*
Source: Bank of Russia calculations.

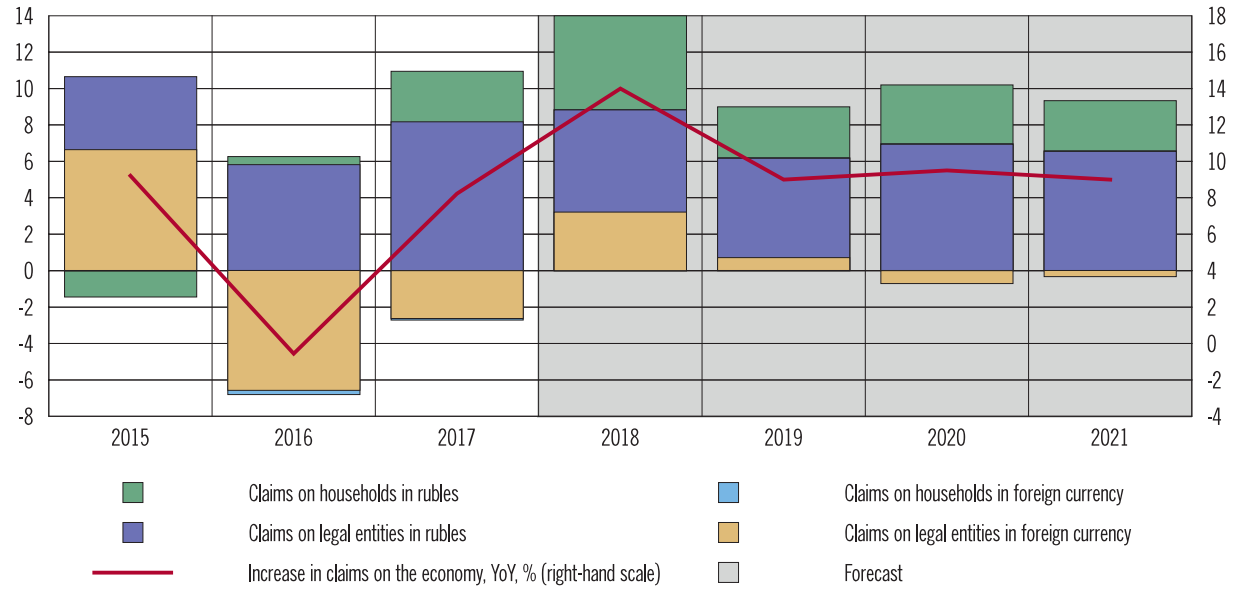
economic growth at a rate close to its potential, which will not generate additional pressure on prices on the demand side, inflation will stay close to 4%.

The gradual easing of monetary policy, the positive impact of the retirement age increase on the dynamics of the number of employed, and the gradual accumulation of the positive effect created by fiscal policy measures will provide additional support to growth in domestic demand, especially investment demand, in 2020-2021. Along with the positive impact of stabilised external conditions on business expectations and sentiment, this will contribute to accelerated growth of investment activity, resulting in a 3.0-3.5% annual growth rate of gross fixed capital formation in 2020 and 3.5-4.5% in 2021. During this period, the annual growth rate of final consumption expenditure of households will also accelerate to 1.5-2.0% in 2020 and 2.5-3.0% in 2021. Steadily growing domestic demand will secure the expansion of imports at a rate of 3.5-4.0% in 2020 and 4.5-5.0% in 2021. Demand for imports of investment goods may further be strengthened by investment stimulus measures. In 2020-2021, a 2.7-3.2% increase in physical exports will continue to lend significant support to economic growth amid sustainably positive growth rates of demand from trading partners. At the same time, the gradual implementation of a fiscal policy package for the period of up to 2024 will also contribute to the development of non-resource exports, including those related to the exports of high-tech products.

As a result, by the end of the forecast horizon total output will post gradually rising paces of 1.8-2.3% in 2020 and 2-3% in 2021. The Bank of Russia expects in its baseline scenario that the effective delivery of the fiscal policy package and structural reforms will provide for growth acceleration to be primarily driven by expanding production capacity of the Russian economy. Therefore, expanding domestic demand will have no additional proinflationary impact and will require no monetary policy adjustments.

At the same time, should developments in 2020-2021 differ from these Bank of Russia assumptions and the upward influence of increased government spending on consumer demand significantly outpaces the impact on production capacity, accelerated economic growth may come with upward pressure on

Decomposition of increase in claims on the economy
(contribution to increase in claims* on the economy, pp)



** In the forecast, decomposition is shown for the growth rate of claims on the economy corresponding to the middle of the forecast range.*
Source: Bank of Russia calculations.

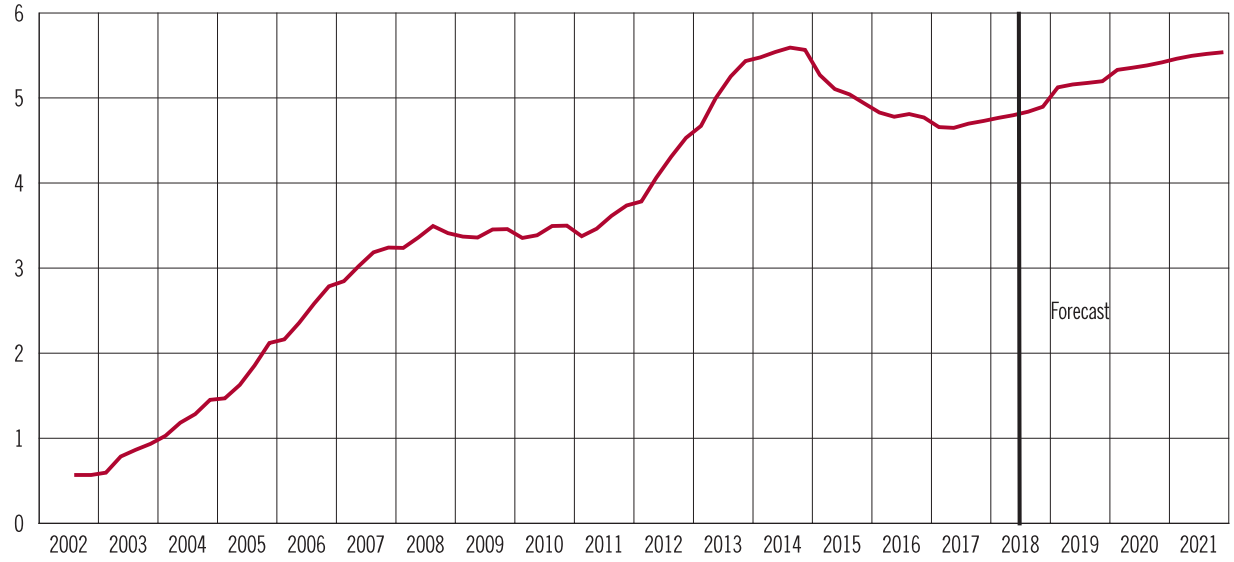
inflation. The Bank of Russia will pay great attention to assessing the short-term and long-term effects of the planned fiscal measures by clarifying the scope and nature of their impact on the economy and inflation as they are implemented and looked into.

The dynamics of monetary and credit aggregates over the forecast horizon will continue to support economic activity without creating additional inflationary pressure in the economy. Lending activity will continue to expand at a pace that is consistent with the increase in effective demand and does not create price or financial stability risks. Non-price lending conditions will soften gradually, reflecting the conservative approach of banks to assessing borrowers and taking risks. Lending will continue to be the main driver of changes in the money supply. In the medium term, the money supply and lending to the economy will see their growth paces converging, helped in part by a lower budget surplus over the forecast horizon amid a downturn in oil prices. In 2019-2021, both claims on the economy and the money supply will increase at an annual rate of 7-12% (for other monetary indicators, see Appendix 6). Monetisation of the economy, measured as the money supply (in the national definition) to nominal GDP ratio, is on a sustainable growth track; it is forecast to total 52-57% by the end of the forecast period (circa 45% for the end of 2018).

In the structure of claims, the main share will continue to be corporate ruble-denominated borrowings. In 2019-2021, the growth rate of claims on organisations will run at 6-10%. Their slowdown over the forecast horizon is caused by the limited potential of monetary policy easing given that monetary conditions are close to neutral levels, as well as by a gradual 'discharge' in corporate balance sheets of accumulated loans and borrowings including in foreign currency. With lending activity posting moderate growth rates over the forecast horizon, the corporate sector's debt burden will stabilise near its relatively sustainable levels of about 16% of GDP without threats to financial stability.

On the contrary, individuals' debt burden will gradually increase, returning to levels corresponding to a steady upward curve in the long term. The growth paces of claims on individuals will gradually slow down to 12-17% in 2019 and 10-15% over the medium-term

Household debt burden*
(debt service ratio, as % of GDP)



** In the forecast, debt burden is calculated for the claims corresponding to the middle of the forecast range.*
Source: Bank of Russia calculations based on bank reporting forms, Rosstat.

Corporate debt burden*
(debt service ratio, as % of GDP)

** In the forecast, debt burden is calculated for the claims corresponding to the middle of the forecast range.*
Source: Bank of Russia calculations based on bank reporting forms, Rosstat.

horizon. The increase in household debt burden will match the growth rate of real incomes and will therefore come without the accumulation of financial stability risks in the economy. By the end of the forecast period, the debt burden of individuals will run at 5.0-5.5% of GDP. Should imbalances occur in certain segments of the credit market, the Bank of Russia will offset them with macroprudential policy measures.

Alongside changes in prices in global commodity markets, the domestic and external demand trends discussed above will be reflected in the corresponding changes in the balance of payments in 2019-2021. The

Key parameters of the Bank of Russia's forecast
(growth as % of previous year, unless indicated otherwise)

	2017 (actual/estimate)	2018		2019		2020		2021	
		Baseline	Unchanged oil price	Baseline	Unchanged oil price	Baseline	Unchanged oil price	Baseline	Unchanged oil price
Urals price, yearly average, US dollars per barrel	53	72	72	63	75	55	75	55	75
Inflation, as % in December YoY	2.5	3.8–4.2	3.8–4.2	5.0–5.5	5.0–5.5	4.0	4.0	4.0	4.0
Inflation, yearly average, as % YoY	3.5	2.9–3.1	2.9–3.1	5.0–5.5	5.0–5.5	4.0	4.0	4.0	4.0
Gross Domestic Product[1]	1.8	1.5–2.0	1.5–2.0	1.2–1.7	1.5–2.0	1.8–2.3	1.8–2.3	2.0–3.0	2.0–3.0
Final consumption expenditure	2.5	2.0–2.5	2.0–2.5	1.0–1.5	1.2–1.7	1.5–2.0	1.8–2.3	2.0–2.5	2.0–2.5
– Households	*3.3*	*2.5–3.0*	*2.5–3.0*	*1.0–1.5*	*1.3–1.8*	*1.5–2.0*	*2.0–2.5*	*2.5–3.0*	*2.5–3.0*
Gross capital formation	9.3	-(1.5–0.5)	-(1.5–0.5)	1.5–2.5	2.0–3.0	2.5–3.5	3.0–4.0	3.5–4.5	3.5–4.5
– Gross fixed capital formation	*4.9*	*1.5–2.0*	*1.5–2.0*	*1.8–2.3*	*2.0–2.5*	*3.0–3.5*	*3.0–3.5*	*3.5–4.5*	*3.5–4.5*
Exports	6.0	5.5–6.0	5.5–6.0	3.2–3.7	3.2–3.7	2.7–3.2	2.7–3.2	2.7–3.2	2.7–3.2
Imports	17.4	4.0–4.5	4.0–4.5	2.5–3.0	3.5–4.0	3.5–4.0	3.5–4.0	4.5–5.0	4.5–5.0
Money supply in national definition	10.5	12–15	12–15	7–11	8–12	7–12	9–13	7–12	9–13
Lending to the economy (organisations and households) in rubles and foreign currency[2]	8.2	13–15	13–15	7–11	8–12	7–12	7–12	7–12	7–12
– Lending to financial and non-financial institutions in rubles and foreign currency, annual per cent increase	*7.1*	*10–12*	*10–12*	*7–10*	*8–11*	*6–10*	*6–10*	*6–10*	*6–10*
– Lending to households in rubles and foreign currency, annual per cent increase	*12*	*21–24*	*21–24*	*12–17*	*13–18*	*10–15*	*11–16*	*10–15*	*10–15*

[1] Data for 2017, as estimated by the Bank of Russia based on data on industrial production revised by Rosstat.
[2] Lending to the economy on the part of the banking sector means all claims of the banking sector on non-bank and financial institutions and households in the currency of the Russian Federation, in foreign currency, and in precious metals, including loans granted (including overdue debt), overdue interest on loans, investments of credit institutions in debt and equity securities and promissory notes, other forms of participation in the equity of non-bank and financial institutions, and other receivables under settlement operations with non-financial and financial institutions and households.

Source: Bank of Russia.

Russia's balance of payments indicators*
(billions of US dollars)

	2017	2018		2019		2020		2021	
		Baseline	Unchanged oil price	Baseline	Unchanged oil price	Baseline	Unchanged oil price	Baseline	Unchanged oil price
Current account	**33**	**111**	**111**	**95**	**131**	**60**	**121**	**53**	**113**
Balance of trade	115	193	193	175	213	143	209	138	205
Exports	*354*	*444*	*445*	*423*	*463*	*403*	*480*	*416*	*497*
Imports	*-238*	*-251*	*-251*	*-249*	*-251*	*-259*	*-271*	*-277*	*-292*
Balance of services	-31	-31	-31	-30	-28	-30	-31	-31	-34
Exports	*58*	*65*	*65*	*65*	*68*	*67*	*71*	*69*	*74*
Imports	*-89*	*-96*	*-96*	*-95*	*-96*	*-96*	*-102*	*-100*	*-108*
Primary and secondary income account	-51	-51	-51	-51	-54	-53	-56	-55	-57
Capital account	0	0	0	0	0	0	0	0	0
Current and capital account balance	**33**	**111**	**111**	**95**	**131**	**60**	**121**	**53**	**113**
Financial account (net of reserve assets)	**-14**	**-72**	**-73**	**-24**	**-41**	**-14**	**-34**	**-11**	**-31**
General government sector and central bank	13	-6	-6	1	3	2	4	3	5
Private sector	-28	-66	-67	-25	-44	-15	-38	-14	-36
Net errors and omissions	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Change in FX reserves ('+' -decrease, '-' - increase)	**-23**	**-38**	**-38**	**-70**	**-90**	**-46**	**-87**	**-41**	**-82**

** According to BPM5.*
Note. Final values may differ from the total of the respective values due to rounding.
Source: Bank of Russia.

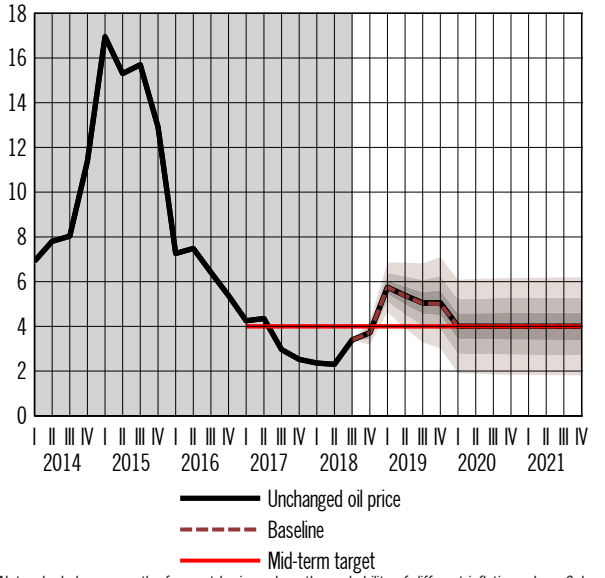
gradual decline in oil prices that the baseline scenario assumes will lead to the current account balance remaining steadily positive over the entire horizon. At the same time, the contraction in the value of exports following a downturn in oil prices is expected to push the current account surplus down to about 2-3% of GDP in 2020-2021 vs 7% of GDP in 2018. The private sector's financial account balance will also decrease from 4% of GDP in 2018 to 1% of GDP in 2020-2021 amid declining external debt payments and somewhat weaker global investment capabilities of Russian companies in the context of lower prices for core Russian exports.

Unchanged oil price scenario

The scenario assuming oil prices will remain unchanged is largely close to the baseline one in part due to the fact that the impact of oil price dynamics on the Russian economy over the forecast horizon will continue to be mitigated by the fiscal rule.

Its main difference from the baseline scenario lies in the factors that will shape the economic landscape in 2019. Constant oil prices will result in a higher ruble exchange rate compared to the baseline scenario. On the one hand, this will put downward pressure on inflation through the exchange rate pass-through effect. On the other hand, it will reduce the cost of imported goods, thereby supporting consumer and investment demand. Domestic demand of both households and businesses expanding faster than the baseline scenario suggests will put some upward pressure on inflation, the scale of which will almost completely offset the downward influence of the exchange rate pass-through effect. **As a consequence, consumer prices in 2019 will grow at paces close to those under the Bank of Russia's baseline scenario. In this environment, the monetary policy stance will also be close to the one suggested by the baseline scenario. In 2019, GDP growth will be slightly higher than under the baseline scenario and will total 1.5-2.0%.**

Inflation
(as % on corresponding period of previous year)

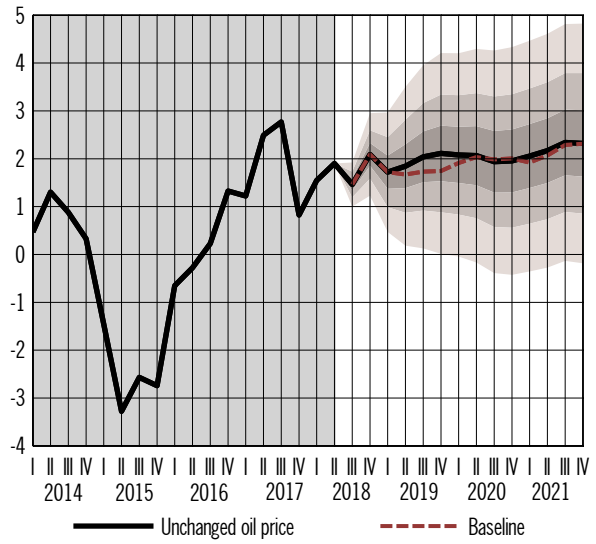


Note: shaded areas on the forecast horizon show the probability of different inflation values. Colour gradation reflects probability intervals.
Confidence intervals are symmetrical and based on historical estimates of uncertainty of inflation.
Source: Bank of Russia calculations.

Moving forward, both inflation and economic activity over the forecast horizon will develop in line with baseline scenario estimates. A more significant expansion of economic activity in the second half of the forecast horizon is possible in the event of structural economic reforms being implemented faster and more effectively against baseline scenario estimates. The effect of the fiscal rule and stable global oil prices upwards of the baseline scenario mark will contribute to the emergence of a budget surplus in 2018 and throughout the forecast horizon.

Lending and monetary aggregates will also move without any significant changes against the baseline scenario. The growth rate of lending to the economy, followed by the money supply, will be close to baseline scenario estimates, amounting to 8-12% in 2019 and 7-12% in the medium term. As the most significant difference, over the forecast horizon claims on households will sustain relatively high growth rates over a more extended period than the baseline estimates suggests. Similar to the

GDP growth rate
(as % on corresponding period of previous year)



Note: shaded areas on the forecast horizon show the probability of different GDP growth values. Colour gradation reflects probability intervals.
Confidence intervals are symmetrical and based on historical estimates of uncertainty of GDP growth rate.
Source: Bank of Russia calculations.

baseline scenario, household lending activity will be primarily supported by income changes. This will help maintain the effective demand for lending and a level of debt burden that does not create financial stability risks. Triggered by a slightly faster rise in net foreign assets of the banking system under the unchanged oil price scenario, money supply growth paces over the forecast horizon may prove more rapid relative to credit supply growth paces. According to the Bank of Russia's estimates, money supply in 2019 will rise 8-12% and 9-13% in 2020-2021. The rise in monetisation under the unchanged oil price scenario is also set to be comparable to that under the baseline scenario.

Global oil prices staying at a higher level than in the baseline scenario will provide additional support to the dynamics of export values, while the dynamics of imports will be close to the baseline scenario. This will take the current account balance over the entire forecast horizon upwards of the baseline scenario estimate to 8% of GDP in 2019 and 5-6% of GPP in 2020-2021. The private sector's financial account balance will also be higher than in the baseline scenario and will amount to about 2-3% of GDP in 2021. This will be facilitated by a slightly greater expansion of foreign assets held by Russian companies and banks amid a more significant increase in export revenues in the context of steadily high oil prices.

Risk scenario

The risk scenario assumes a significant deterioration of external conditions for the Russian economy and a weaker global economic growth and international trade outlook against the baseline scenario. This may be related to a set of adverse events that may occur in a given combination. These include significant expansion of foreign trade restrictions, a deterioration in the macroeconomic situation in emerging markets with increased capital outflows and the risks of further expansion of international sanctions against Russia.

A slowdown in the global economy could lead to structurally weaker global demand for energy commodities than under the baseline scenario. The risk scenario assumes that the oil price will drop to $35 a barrel in 2019 and will subsequently stay at this level. This entails the inability of energy commodity exporting countries to comply with the output cut deal.

The events discussed above may lead to a significant increase in the risk premium on Russian assets and accelerated capital outflow in 2019. Increased capital outflows, combined with pressure on the current account coming from deteriorating terms of trade, may lead to a short-term reduction in domestic demand, the weakening of the ruble, a higher exchange rate and higher inflation expectations. Inflation risks will necessitate a tighter monetary policy to limit the growth of inflation expectations and stabilise financial markets. In addition to changes in the key rate, the Bank of Russia can also use other tools to mitigate the effects of increased capital outflows and stabilise financial markets. Should the risk scenario materialise in 2019,

inflation will likely accelerate more significantly than the baseline scenario assumes, and GDP growth will dip into negative territory. At the same time, the effect of the fiscal rule will mitigate the impact of worsening terms of trade on the economy. Current arrangements provide for a shortfall in oil and gas revenues emerging as a result of lower oil prices than the fiscal rule assumes to be compensated out of the NWF. The Bank of Russia will continue to conduct foreign currency sales in the domestic market under fiscal rule arrangements. In the future, as the economy is adjusted to new macroeconomic conditions over the forecast horizon, output growth is expected to return to positive territory in 2020 and it will, by the end of the forecast horizon in 2021, approach the levels of the baseline scenario. Inflation will meanwhile be near the Bank of Russia target level by the end of 2020.

In terms of fiscal policy in the risk scenario, there is uncertainty regarding the implementation of plans to finance the deficit, including in market sources of financing, due to the limited opportunities for placement of OFZs and Eurobonds in volumes previously planned. Moreover, even despite the stabilising effect of the fiscal rule, fiscal policy will overall have a moderately constraining effect on domestic demand.

Should the risk scenario materialise, the Bank of Russia will closely monitor the level of financial stability risks which may be associated with increased financial market volatility and will be ready to use all the available instruments to keep them in check.

APPENDICES

Appendix 1

Impact of low inflation on people's lives and the business environment

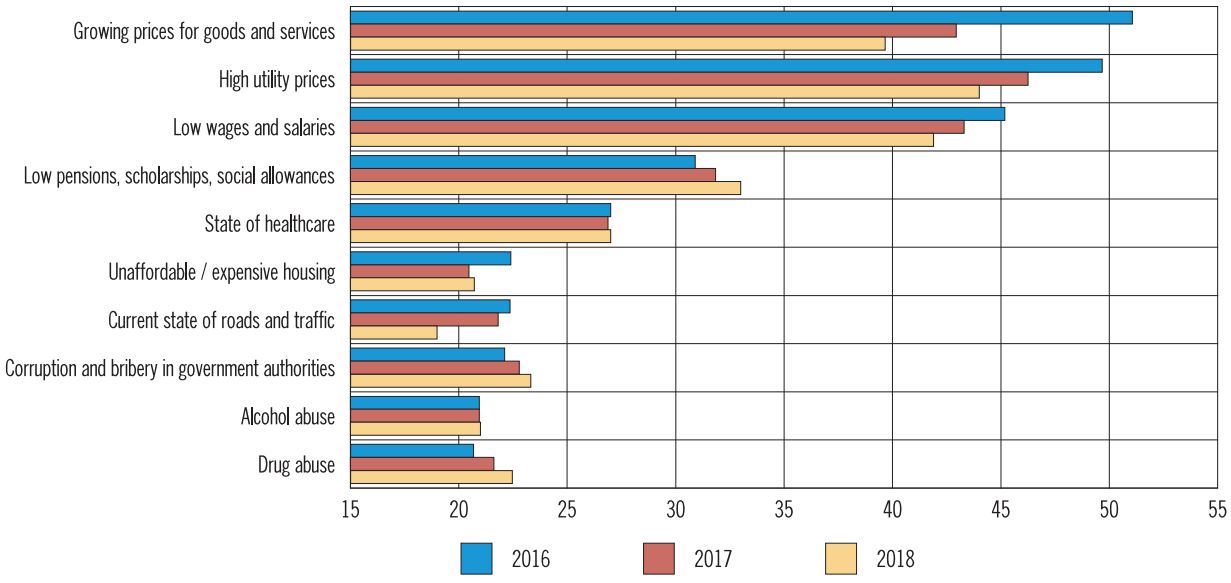
According to surveys, as inflation declines and stabilises at a low level, the issue of rising prices is gradually becoming less severe for households. At the same time, rising prices are still a key issue of concern for Russian people.

- According to a survey conducted by inFOM in 2016-2018, rising prices for goods and services moved from the first to the third place among the problems of concern for households, and the share of those who indicated it in the survey declined from 51% to 40%.
- According to the 2016-2018 survey by the Russian Public Opinion Research Centre, the importance of inflation as a problem for households has declined and it is currently ranked 10th (in 2016, it was ranked 4th).

Low inflation protects household incomes from inflationary devaluation. The high inflation of 2015-2016 aggravated the issue of low wages, pensions and other incomes. According to Russian Public Opinion Research Centre and inFOM surveys, these problems gain in importance in 2016-2017. Stabilising inflation near the level of 4% made it possible to mitigate the problem of low wages, pensions and other incomes. As early as 2018, there was a decrease in the share of respondents who mentioned low wages as one of their problems in Russian Public Opinion Research Centre and inFOM surveys and respondents who mentioned low pensions as one of their problems in a Russian Public Opinion Research Centre survey.

The significant decline of inflation in recent years has also contributed to real wage growth.

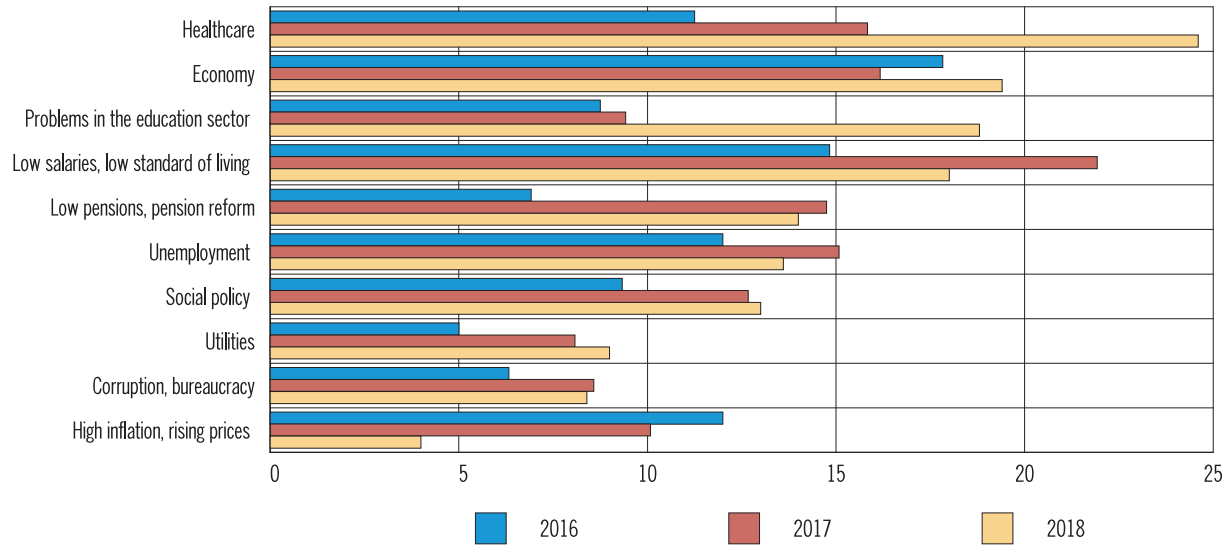
Issues of concern for Russians*
(inFOM surveys, %)



** Surveys are conducted on a monthly basis. Based on year-average shares of respondents citing the issue.*

Source: InFOM.

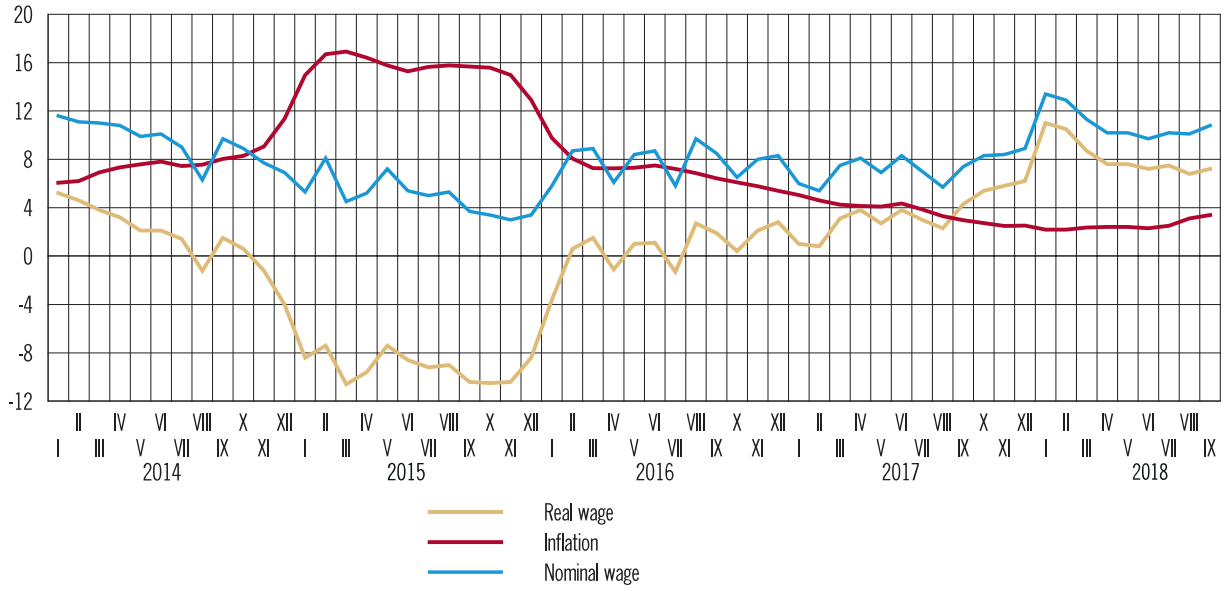
Issues of concern for Russians*
(VCIOM surveys, %)



** Surveys are conducted on a monthly basis. Based on year-average shares of respondents citing the issue. Data are based on household surveys through April 2017; they were substituted with telephone surveys beginning in May 2017.*

Source: Russian Public Opinion Research Centre (VCIOM).

Wage changes
(as % on corresponding period of previous year)



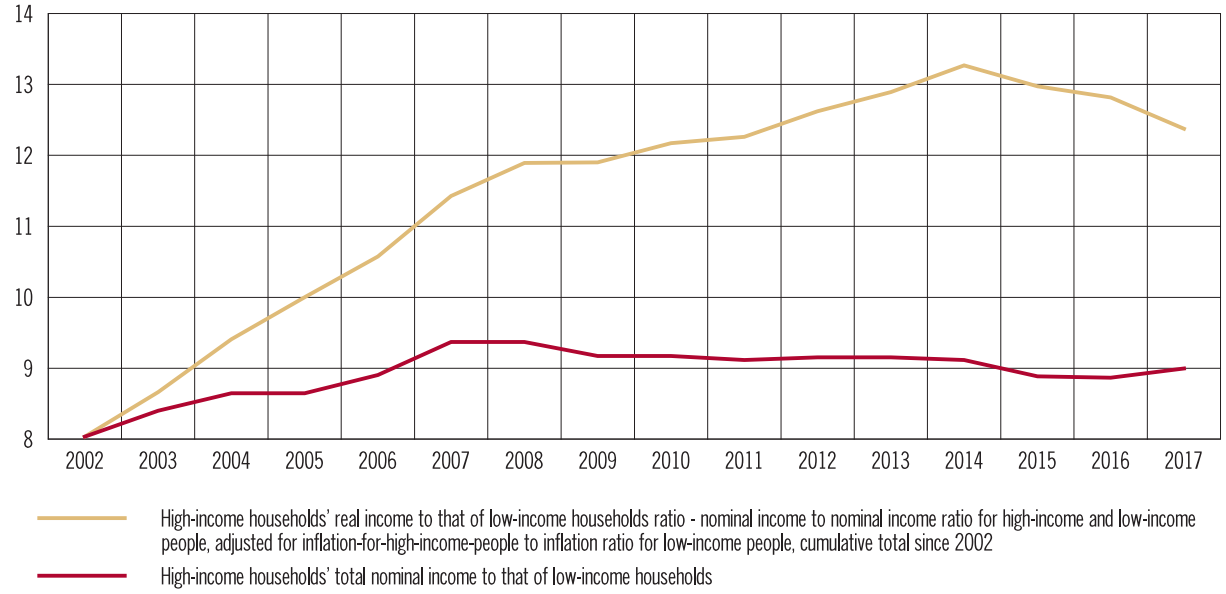
Sources: Rosstat, Bank of Russia calculations.

In this case, low and stable inflation is especially important for the financial well-being of low-income people. In response to rising prices they cannot cut their consumption or switch to cheap analogues of goods because they already consume what is the most necessary and the cheapest. As a result, rising prices lead to a severe deterioration in their living conditions. At the same time, during periods of high inflation, the price of the basket of goods and services consumed by low-income households tends to rise faster than that in high-income households' basket. In this way, in Russia, except for some short periods, amid high inflation in 2003-2015,

Inflation dynamics for low- and high-income households.
(as % on corresponding period of previous year)

Sources: Rosstat, Bank of Russia calculations.

Low-income to high-income households' money income ratio
(%)

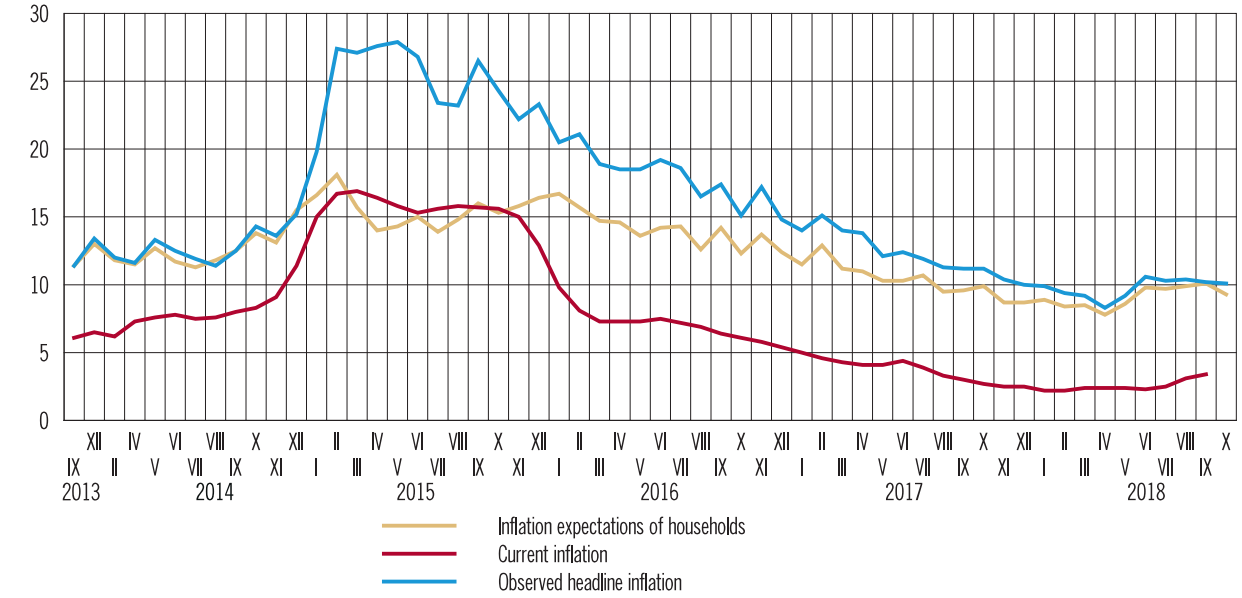


Sources: Rosstat, Bank of Russia calculations.

the rate of price growth for low-income households outpaced that for high-income households[1]. As inflation was declining and consolidating near the level of 4%, the rate of growth of the cost of the basket of goods and services for low-income households has become lower than the rate of growth of the cost of the basket of goods and services for people with high incomes.

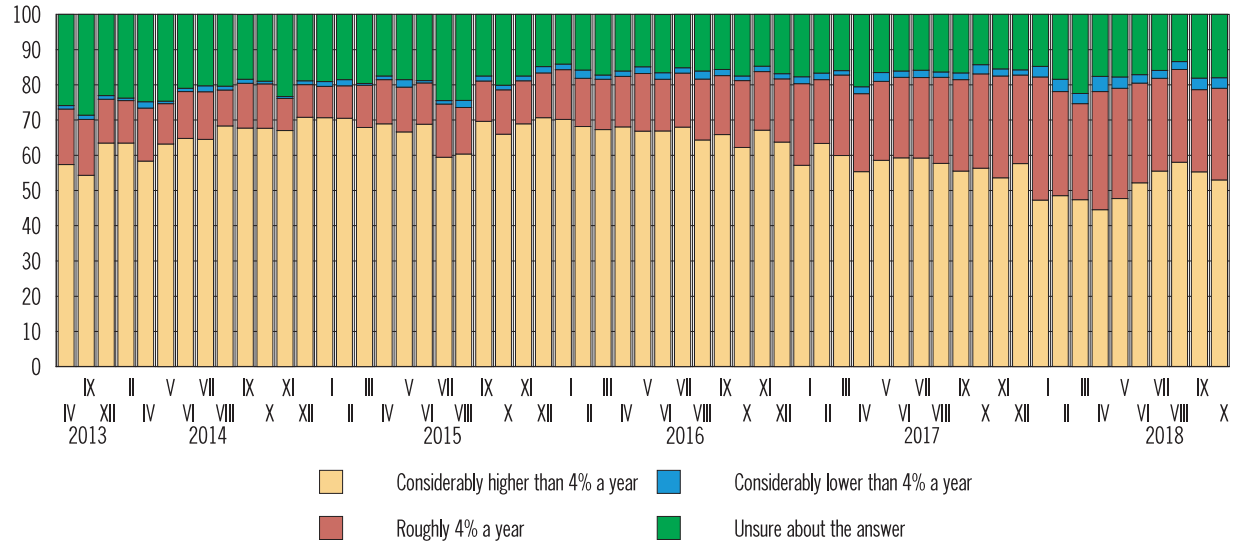
[1] *The consumer basket for low-income households included bread, meat, dairy products, eggs, pasta, vegetables, tea, tobacco, alcohol, utility services and public transport, with the same weights as in the CPI basket used by Rosstat, as well as clothing and footwear with weights twice as little. The weights were then normalised so that their sum totals 100%. The consumer basket for high-income households includes all goods from the CPI basket, while the weights are adjusted so that the weights of the goods in the basket for low-income households are 2.5 times lower, and the weights of other goods are proportionally increased so that the sum of weights is 100%.*

Estimates of inflation expectations estimated for one year ahead
(%)



Source: inFOM, Rosstat, Bank of Russia calculations.

Expectations as regards inflation rate by late 2018*
(share of respondents marking the response, as % of all)

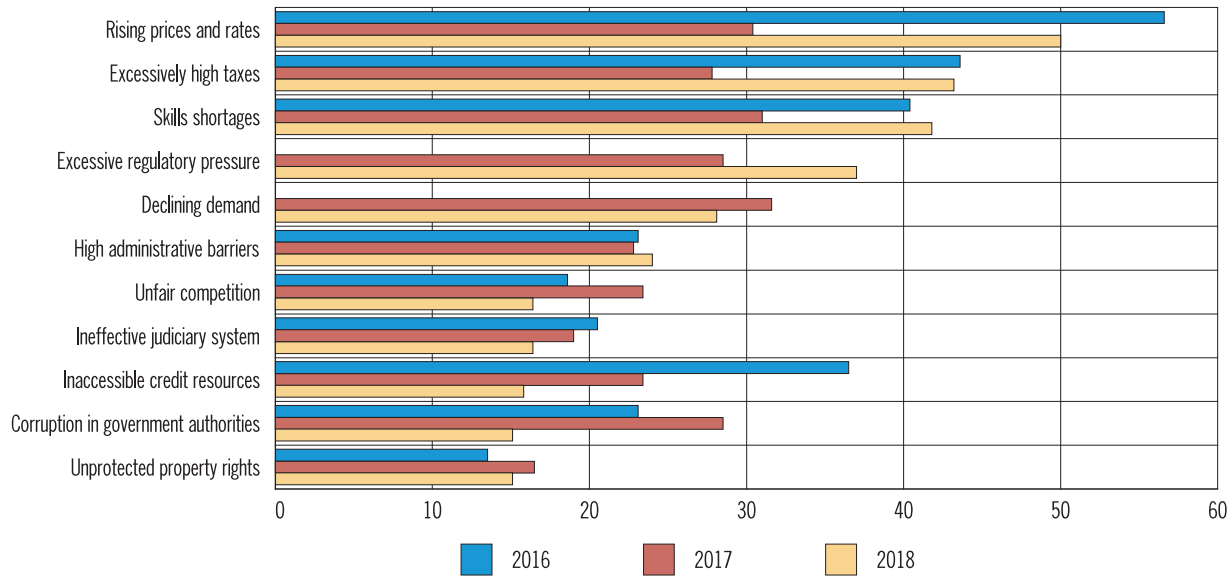


** Questions are updated with each new survey in line with a current definition of the Bank of Russia's inflation target. The question was worded as follows. 'Official data suggest that 2017 price growth in Russia totalled 2.5%. The Bank of Russia intends to work towards ensuring that annual price growth remains within 4% by the end of 2018. Do you think prices will grow by the end of 2018 in line with the Central Bank's plan?' Previously, the question read as follows. 'Official data suggest that 2016 price growth in Russia totalled 5.4%. The Central Bank of the Russian Federation intends to ensure that annual price growth remains within 4% by the end of 2017. Do you think prices will grow by the end of 2017 in line with the Central Bank's plan?' Possible answers: considerably higher than 4% a year; considerably lower than 4% a year; roughly 4% a year; unsure about the answer.*

Source: InFOM.

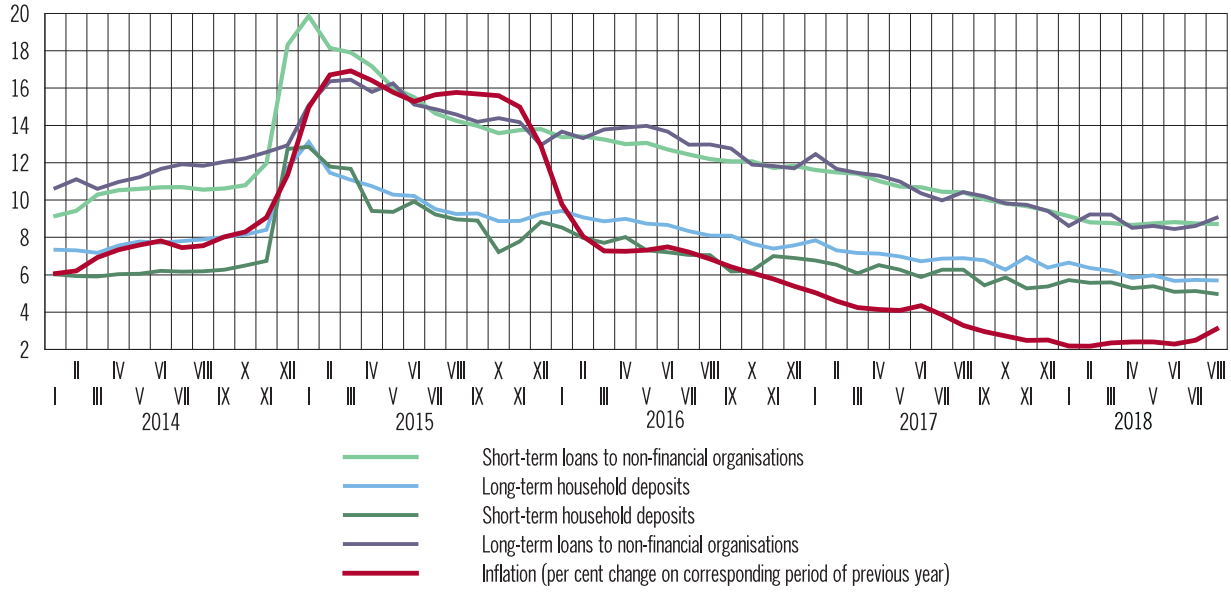
At the same time, since the nominal incomes of low-income households are relatively stable, their real incomes grow more slowly or decline faster in high inflation periods than those of high-income earners. This is indicated by analysis of the ratio of the incomes of the 20% of people with the highest income and the 20% of people with the lowest income. Although the difference in the nominal incomes of these two groups remained stable, the difference in their real incomes increased substantially during the period of high inflation in 2002-2015. As inflation decreased

Issues of concern for Russian business
(RSPP surveys, %)



Source: RSPP business climate report.

Changes in interest rates on core banking transactions and inflation
(% p.a. unless indicated otherwise)



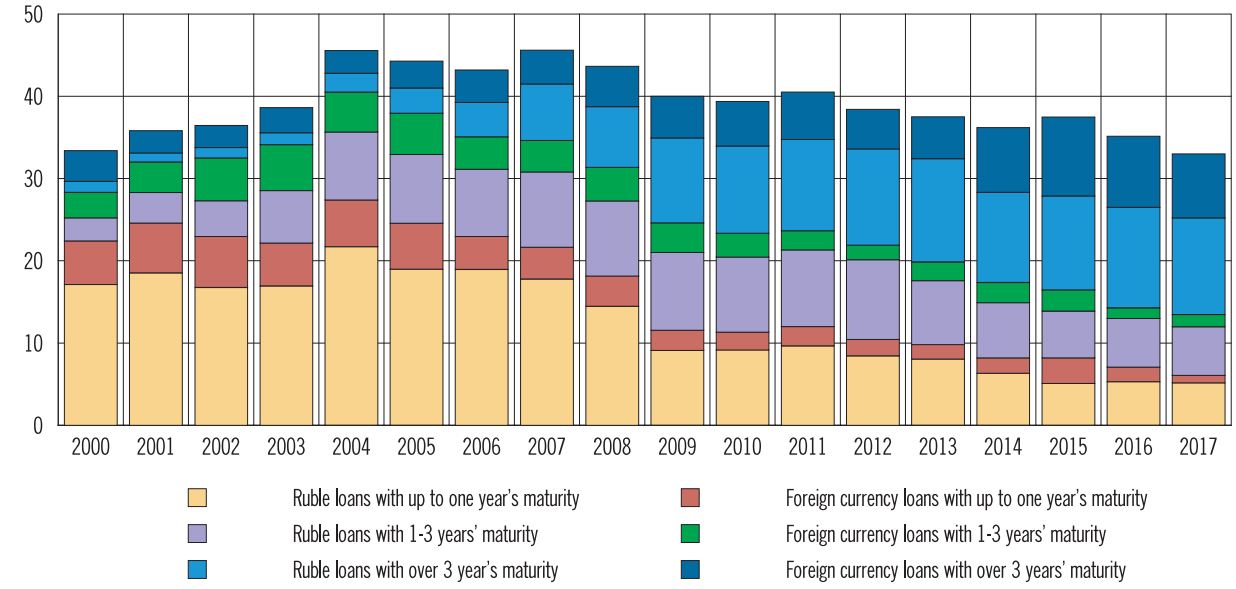
Source: Bank of Russia.

and stabilised near 4%, this difference shrank, which is one of the important conditions for social stability.

Households have already felt the slowdown of inflation, which is indicated by declining inflation expectations to the minimum level since the start of monitoring and by growing share of respondents expecting inflation at about 4%.

For Russian companies, inflation remains the main problem (according to a survey of the Russian Union of Industrialists and Entrepreneurs (RSPP)), which is probably related to growing companies' costs amid rising prices for the products of extractive industries.

Russian banking sector's corporate credit portfolio structure by maturity and currency of funds
(% of net assets)



Source: Bank of Russia calculations per Form 0409101.

Overall, low and stable inflation improves the availability of long-term borrowings to finance projects, which is beneficial for doing business. First, the formation of interest rates on loans is influenced by deposit rates since the income from bank loans must recoup the costs of deposits. In turn, if deposit rates fall below inflation, this will reduce the attractiveness of deposit operations for depositors. To retain depositors, banks set deposit rates adjusted for inflation. Therefore, when inflation is low and stable, all other things being equal, lending rates are lower than when inflation is high. Lower inflation and inflation expectations of the financial market in the recent years have contributed to the decrease of interest rates on loans.

Second, low and stable inflation makes banks more willing to provide long-term ruble loans. High inflation is a source of interest rate risks for banks because, in the event of higher inflation, the value of bank liabilities grows faster than the returns on bank assets. To protect themselves against interest rate risks associated with high inflation, banks prefer to provide short-term loans or issue loans in foreign currency. For example, in the first half of the 2000s, the share of short-term ruble-denominated loans in the portfolio of the banking sector was about 50%, and more than half of all corporate loans for over one year were issued in foreign currency. Since the second half of the 2000s, when inflationary pressure began to weaken, banks have become more willing to provide long-term ruble-denominated loans. In 2017, the share of ruble-denominated loans with maturities of over one year reached about 50% in the banks' credit portfolio.

Appendix 2

Cost channel: analysis of Russian experience

By changing the key rate, the central bank influences price dynamics mainly through internal demand. In practice, this impact may weaken due to the influence of changes in the key rate on the interest costs of companies and partial transfer of these costs by companies to the prices of goods. In academic literature and studies, this influence is called the 'cost channel'. The scale of interest cost transfer to prices depends on many factors, such as the extent to which companies use borrowed funds, their ability to control rising interest costs, the sensitivity of demand for companies' products to changes in their prices and overall competition in the market. Surveys of companies and quantitative studies show that in recent years in Russia the influence of changes in interest rates on prices of goods and services through domestic demand has become more prominent, exceeding the potential influence of changes in interest rates through the cost channel. Therefore, the Bank of Russia is currently making a profound impact on prices through domestic demand by the key rate.

The central bank affects price movements indirectly through the aggregate of macroeconomic relationships – the monetary policy transmission mechanism. By setting the key rate, the Bank of Russia influences interest rates in various segments of the financial market, which is reflected in the availability of borrowed funds and the propensity to save, affecting domestic demand and, ultimately, inflation. At the same time, change in interest rates affects the cost of borrowing for companies and leads to changes in their interest costs. Some manufacturers consider changes in costs when they set their prices, which affects inflation. In academic literature and studies, this mechanism came to be known as the cost channel. Changes in domestic demand and changes in the costs of companies following a cut or hike in the key rate push prices in different directions. For example, when interest rates increase, domestic demand declines, which contributes to slower inflation. Conversely, rising interest costs following a hike in interest rates put upward pressure on prices. The weaker the cost channel is the more opportunities the central bank has to use the key rate to stabilise inflation near the target.

The cost channel-generated effect is limited for a number of reasons:

- Rising interest rates may not fully translate into company costs.
- Changes in costs may not necessarily be reflected in producer prices.
- Cost changes will have a small-scale impact on prices.

First, only part of a company's investment and working capital is financed with borrowed funds. The growth of interest rates is therefore reflected in the costs of companies in proportion to the share of their debt financing rather than to the full extent. Russian companies tend to use their own funds to finance investment. According to a Bank of Russia survey[1], 28% of enterprises do not use loans, while Rosstat data[2] show that large and medium-sized companies' share of bank loans in the sources of investment financing was about 11% in 2017.

Second, companies that partially finance their investment and working capital with borrowed funds attract these funds at fixed rates. According to the Bank of Russia's data, the average share of fixed-rate loans stands at approx. 85% in the total volume of loans. Following an increase in interest rates, banks tend to keep the terms of old agreements. Therefore, higher interest rates

[1] *Hereinafter, this Appendix presents the results of a May 2018 survey conducted among companies by the Bank of Russia together with the Association of Corporate Treasurers.*

[2] *http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/investment/nonfinancial/#.*

on loans are not immediately reflected in the costs of companies. The steadier the company's finances are and the lower its overdue debt, the easier it is for it to obtain long-term loans and reduce the impact of higher interest rates on costs.

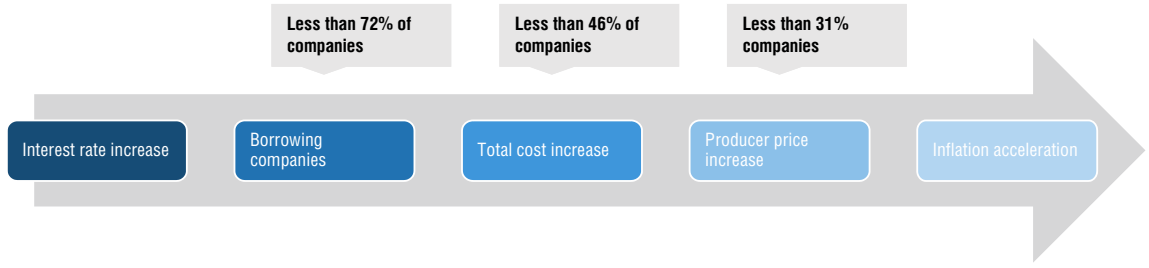
When interest rates rise as previous loans mature and become replaced by new and more expensive loans, corporate interest costs will go up. Yet, companies will have the time and opportunity to limit the increase of total costs. First of all, companies can optimise their marketing and advertising costs, administrative expenses and other costs. According to a Bank of Russia survey, if the interest-related component of costs increases, more than half of companies will explore optimisation options to keep their total costs flat. Companies can also cut interest costs by reducing the use of borrowed funds and focusing more on their own funds to finance projects; they can also obtain funds through other channels (loans from other organisations, budgetary funds, etc.).

Third, rising interest costs may not necessarily lead to higher prices in a highly competitive market and with demand-side constraints in place. This is confirmed by the survey of the Analytical Centre for the Government of the Russian Federation[3]. Price increases lead to a loss of market share: for 60% of companies, a 15% increase in prices will reduce sales by more than 15%; moreover, for 21% of companies, sales will drop to almost zero. In an effort to maintain their market share, businesses may accept lower profits and sell products at old prices. Alternatively, they can cut losses at the expense of sales. A Bank of Russia survey also confirms this finding: faced with rising costs, 54% of companies will leave their prices unchanged due to high competition and demand-side constraints.

Not all companies will raise prices in response to rising interest costs. According to a Bank of Russia survey, such companies make up no more than 31%. These are mainly businesses in industries operating in a low competitive environment where product demand is only slightly sensitive to price changes. They are, for example, a number of enterprises in the fuel and energy sector, the transport engineering sector, and the production and distribution of electricity, gas, and water (according to a survey by the Analytical Centre for the Government of the Russian Federation). At the same time, pricing policies at some of such companies are limited by statutory indexation rates for regulated prices. According to a Bank of Russia survey, a number of respondents from these industries noted that they could change prices only within regulatory limits.

Thus, not all companies will raise prices in response to rising interest rates considering that they may have no loans to repay; or most of their loans were raised at fixed rates for the long term; or they prefer having lower profits to raising prices in the face of high competition and demand-side constraints.

Company survey conducted by the Bank of Russia and the Association of Corporate Treasurers



[3] *See the Competitive Environment Assessment in Russia (2017) report on the website of the Analytical Centre for the Government of the Russian Federation.*

It is difficult to assess the strength of the demand channel and the cost channel separately by using mathematical models at the level of the overall economy as they only allow one to determine the resulting impact of monetary policy on inflation. A view expressed in theoretical papers is that the cost channel can manifest itself in the form of a 'price puzzle', or an increase in prices in response to an increase in interest rates[4]. But this increase is of a short-term nature. However, some authors believe that the discovery of a 'price puzzle' is the effect of using certain research tools rather than a reflection of economic reality[5]. First, central banks could raise interest rates in the face of accelerating inflation. This could be driven by their desire to reduce inflation in the future, if current inflation is rapidly rising as a result of unforeseen factors, or it could be driven by the central bank response to current rather than future inflation. However, it took time for the regulator's measures to take effect and for inflation to begin to decline. The monetary policy measures made no impact on current inflation, and prices seemed to be rising on the back of the central bank's interest rate hike. Second, depending on the central bank's desire for a deeper reduction of inflation or stronger support of the economy, the extent of its response to accelerating inflation could vary over time. In some periods, in response to significantly accelerating inflation, it rose the rate only slightly. In this case, the central bank's measures made a weaker impact on inflation, and it was declining at a slower pace. This also gave the impression of inflation rising in response to the interest rate increase. Later studies, having taken these effects into account, either did not discover a price puzzle or found that it made economic sense and could indicate the operation of the cost channel[6].

A study based on Russian data showed that the 'price puzzle' was evident until the 2010s, but ceased to exist after 2013[7]. In the course of a transition to an inflation targeting regime, the Bank of Russia began to influence demand in the economy through interest rates. The formation of the interest rate corridor, banking sector liquidity management and other measures aimed at bringing the short-term money market rate and the key rate closer all made market participants watch key rate movements. Pricing in the financial market gradually began to be more dependent on key rate changes. This increased attention to Bank of Russia signals. They also began to shape interest rates in the economy[8]. Interest rates, in turn, determined the dynamics of lending and domestic demand and, ultimately, price changes. As a result, this increased the impact of monetary policy on inflation through domestic demand.

International studies also confirm that in an inflation targeting environment the scale of the impact interest rate changes make on prices through the cost channel tends to recede significantly[9].

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[4] *Barth III M. J., Ramey V. A. The cost channel of monetary transmission. NBER macroeconomics annual. 2001.*

[5] *Sims C. A. Interpreting the macroeconomic time series facts: The effects of monetary policy. European economic review. 1992. No. 36.*

[6] *Balke N. S. et al. Understanding the price puzzle. Federal Reserve Bank of Dallas Economic Review, Fourth Quarter. 1994.*

[7] *Шестаков Д. Е. Канал издержек денежно-кредитной трансмиссии в российской экономике (The cost channel of monetary transmission in the Russian economy). Money and Credit. 2017. No. 9.*

[8] *Papadamou et al. (2014) also showed that the transparency of the regulator's measures in inflation targeting increased the effectiveness of the demand channel (Papadamou S. et al. Does central bank transparency affect stock market volatility? Journal of International Financial Markets, Institutions and Money. 2014. No. 31).*

[9] *Florio (2018) showed that for countries that target inflation there was no price puzzle, and the cost channel was therefore not predominant. Barth and Ramey (2001) also found that in the US the price puzzle was most evident between 1959 and 1979, while its effect weakened in 1983-2000 (when the policy focused on delivering price stability through the management of domestic demand) (Florio A. et al. Unmoored expectations and the price puzzle. University of Pavia, Department of Economics and Management. 2018. No. 154).*

The impact on prices achieved through the shaping of domestic demand will further strengthen thanks to the following Bank of Russia practices:

- Increasing confidence in central bank monetary policy by following the principle of transparency.
- Strengthening the influence of the inflation target on economic agents' decision-making and lowering inflation expectations by expanding the outreach of monetary policy and further specifying its target audience, as well as anchoring inflation close to the target.

In addition, the promotion of competition in final product markets will help reduce the impact of interest rate changes on prices through the cost channel. The Bank of Russia's regional branches currently participate in the efforts to develop a technique for monitoring the state of competition in the markets of Russian constituent territories, also working towards crafting measures to encourage competition.

Therefore, business surveys and economic studies suggest that currently the cost channel is overall weak and does not stand in the way of the current monetary policy stance focused on maintaining price stability.

Appendix 3

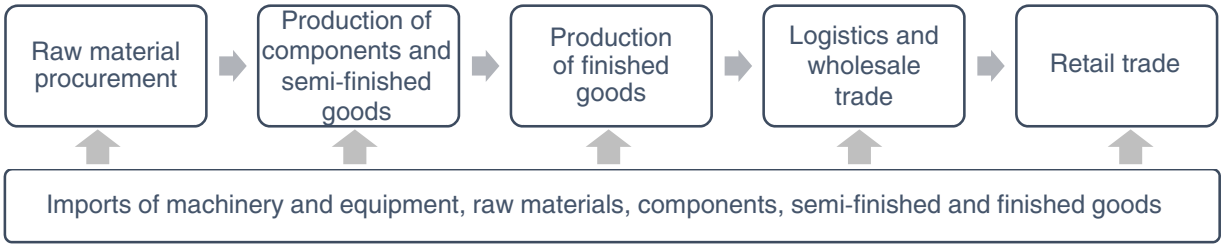
Non-monetary factors causing inflation: regional analysis

Non-monetary factors have a significant impact on inflation both in Russia overall and in its individual regions. Regional analysis shows that key non-monetary factors causing inflation are associated with the shortcomings of the institutional environment and infrastructure, as well as with the structure of individual industries. Although non-monetary factors are outside the scope of monetary policy, if government authorities deliver on Bank of Russia proposals, the impact of non-monetary factors on price dynamics will decline, which will help maintain price stability.

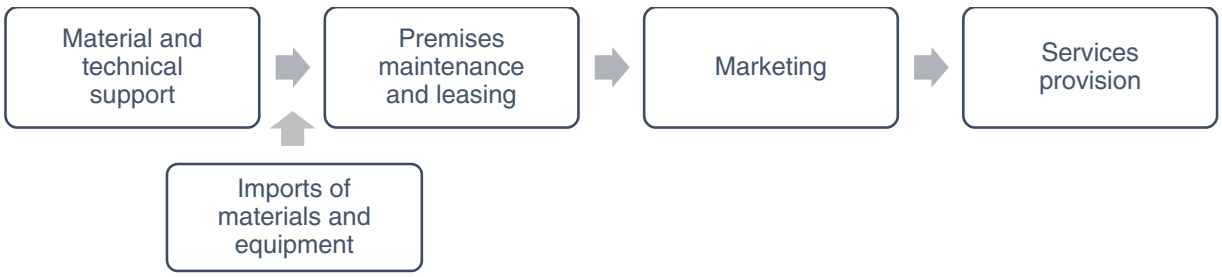
Inflation is determined by multiple factors including those outside the scope of the Bank of Russia's monetary policy. These may be called non-monetary factors causing inflation[1]. The impact of these factors can be seen in the volatility of prices for goods and services, including both regular volatility (associated, for example, with seasonal agricultural cycles and indexation of regulated prices and tariffs) and irregular one-time volatility (related to, for example, administrative decisions such as changes in taxes and regulatory requirements).

Non-monetary factors have various degrees of impact on prices across regions. Regional price differences are exposed through a comparative analysis of price developments across regions and Russia overall. Prices for goods/services in a regional market exceeding the corresponding national average as a result of price deviations may suggest that impactful non-monetary factors are in place. To verify the impact of such factors, the Bank of Russia studied value-chains of goods and services with steadily and significantly deviating price growth rates in Russian regional markets (see the diagrams for a general outline of these chains). The research

Consolidated valued-added chain for consumer goods



Consolidated valued-added chain for services



[1] *The full list of inflation factors and their influence channels is presented in the Bank of Russia's report 'Non-monetary Inflation Factors and Measures to Reduce Its Volatility' (October 2017) published in the 'Economic and Financial Market Outlook' subsection of the Monetary Policy section on the Bank of Russia website.*

included a qualitative study of CPI microcomponents[2] and a summary of detailed interviews with market participants, including manufacturers' associations and regional authorities[3].

The analysis revealed a number of key non-monetary factors affecting inflation processes (see the Table).

Key non-monetary factors

Factor by significance	Factor	Examples of markets where the factor is impactful
1	Imperfect competition, market entry barriers	Motor fuel Individual food products (fruit and vegetables, bread and bakery products, milk and dairy products, beer) Personal services
2	Immature logistics infrastructure	Fruit and vegetables Pasta and cereal products Motor fuel Fish products
3	Underdeveloped transport logistics amid non-uniform regional supply of goods and services and limited transport accessibility of certain areas	Milk and dairy products Fruit and vegetables Meat products Medical goods and services
4	Lack of provision with Russian primary products and components	Passenger cars Alcoholic beverages (beer) Clothing and footwear
5	Suboptimal tariff regulation patterns in some regions	Passenger transport services Utility services
6	Skills shortages	Medical services Education services Clothing and underwear Passenger cars
7	Extensive wear of production equipment, absence or non-competitiveness of Russian equipment	Bread and bakery products Passenger transport services (passenger air transportation) Medical goods Communication services

Below are given non-monetary factors causing inflation along with examples of their regional impacts and proposed action to reduce price volatility and cost-related pressure on inflation. Since non-monetary factors are outside the scope of monetary policy, the proposed steps to minimise their impact involve collaboration with federal and regional authorities.

Imperfect competition, market entry barriers

Markets with imperfect competition are characterised by pricing specifics driven by their participants' market power. A vivid example is the oil and oil product market, including the consumer market. The fact that, on the one hand, it is dominated by vertically integrated oil companies, and, on the other hand, its price movements are closely monitored by competition authorities, has led to the emergence of a special pricing format. Following the rise of producer prices for oil and oil products, which are characterised by high volatility, there was a rather slow and smooth increase in the cost of motor fuel in the consumer market. However, its growth was abrupt in some periods of time. For example, in April-June 2018, there was a spike (9.0%) in motor fuel prices. As overall inflation remained at a low level, this development was quite unexpected and led to increased inflation expectations of households, which had previously demonstrated a downward trend (the median estimate of expected inflation increased from 7.8% in April to 9.8%

[2] Microcomponents include specific goods and services which make up product groups (subcomponents) in the CPI.

[3] Regional authorities and relevant ministries provided information on the availability and quality of logistics infrastructure in the regions, regulated tariffs, and the state of individual markets (food, motor fuel) and retail trade.

in June 2018). To keep rising oil product prices in check and stabilise the market, the authorities reduced excise duties, and arrangements were made between the Russian Government and oil majors, towards stabilising consumer prices. Importantly, motor fuel is the only major category of non-food products which showed an increase in price volatility in recent years. Moreover, since motor fuel is used in the manufacturing and transportation of other goods and services, an increase in its prices triggers volatility in prices for other goods and services. All this testifies to the high relevance of measures to encourage competition in this market.

Regional specifics of price movements in the motor fuel market were also largely determined by this product market structure and the level of competition. Deviations in the growth rates of motor fuel prices above the Russian average were previously observed in regions with the highest level of monopolisation of the gasoline and diesel fuel markets (the Voronezh Region, the Kaliningrad Region and the Perm Territory).

For some regions, increased competition in the transportation and retail of motor fuel can be achieved by bringing new companies into the market. This could be either small independent businesses or entities of major holding companies without regional presence.

Imperfect competition manifests itself, among other things, in barriers to markets, which are associated with the costs of product (service) promotion, limited sales channels and major retailers' policies regarding small and medium suppliers. This factor affects pricing in the markets of individual food products, namely, bakery and dairy products, fruit and vegetables, alcoholic beverages, and some kinds of personal services. For example, beer manufacturers in the Tomsk Region, the Altai Region and the Republic of Khakassia interviewed by the Bank of Russia said that it was impossible to sell their products in major federal chains even in their own regions.

Stabilisation of price dynamics for goods and services which are exposed to imperfect competition, on a nationwide scale, may be achieved through an improved institutional environment, that is, by delivering fair competition and mitigating administrative barriers for business.

Immature logistics infrastructure

The problem of immature logistics infrastructure, particularly, the lack of warehouses and primary processing capacities, manifests itself in short-term and mid-term price fluctuations. For plant products, the lack of storage and processing capacities is caused by the high dependence of the market environment on weather and climatic conditions – which affect crops and their quality. It is one of the significant factors of the retention of high price volatility of food products, which negatively affects the stability of inflation expectations of households and manufacturers in the agroindustrial complex and may complicate the achievement of price stability.

Recent years saw active extension and upgrading of agricultural product storage and processing systems and the development of greenhouse facilities. As reported by the Ministry of Agriculture of Russia, over the last three years, the area of greenhouses grew by one-third and is expected to increase by another 7.9% in 2018. The dispersion of consumer price growth rates, a price volatility indicator, declined significantly in the food market in 2017-2018. The decline in volatility of vegetable and fruit prices was marked. It was favoured by sustainably growing outputs of hothouse vegetables (major hothouse vegetables are cucumbers and tomatoes). As reported by the Ministry of Agriculture of Russia, over the last three years, imports of vegetables declined more than twofold. The launch of newly constructed greenhouses and the introduction of modern technologies made it possible to double the average crop yield of greenhouse vegetables. The production of hothouse vegetables expanded by 13.7% in 2017 and by 20% in the period between

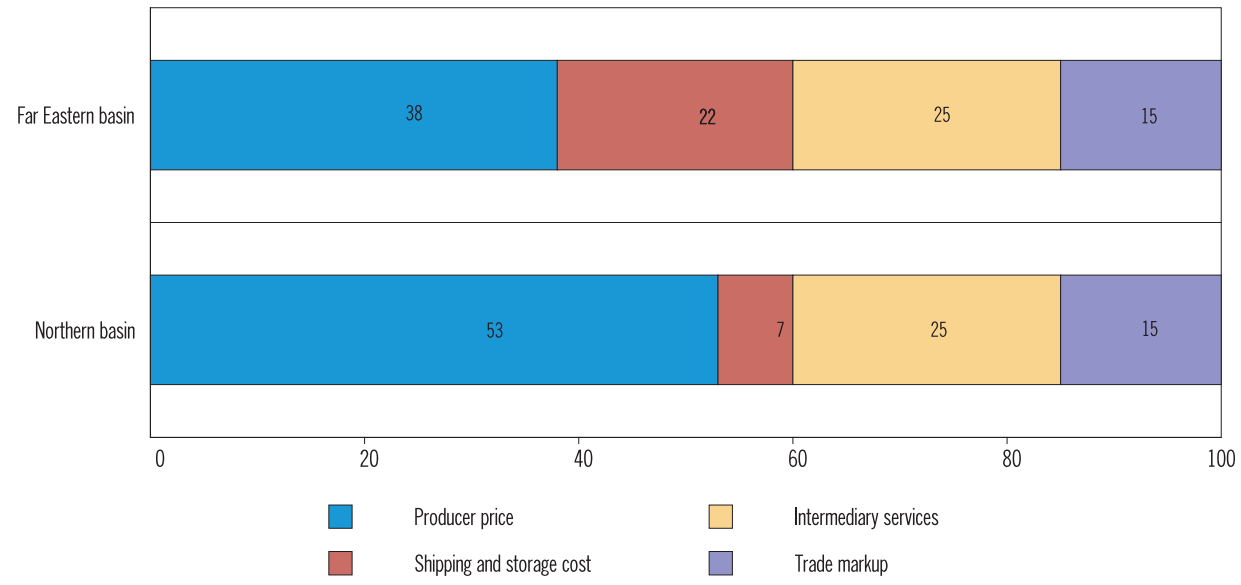
January and August 2018 (vs January-August 2017). This helped reduce the extent of seasonal price fluctuations, particularly in tomatoes and cucumbers.

Nevertheless, the volatility of price trends for fruit and vegetables still remains higher than in other food product groups. In some regions, there are difficulties with the construction of government-supported wholesale distribution centres. For example, among all regions of the Southern and North Caucasian Federal Districts, the construction of wholesale distribution centres (WDCs) in 2018 started only in the Republic of Dagestan. In the Volgograd and Rostov Regions, preparations for construction works have been postponed because of the long process of documenting land plots and obtaining permissions, as well as due to the lack of the necessary utility networks (especially power lines).

For the market of fish products, the quality of warehouses (cooling and refrigerating plants) to a great extent determines the net cost and supply of the products. Furthermore, about 40% of the existing cooling capacities in ports do not meet modern requirements, with most refrigerators having been put into service 30 or more years ago. This poses risks not only for the quality of storage, but also for the overall safety of products, and the loss of goods may affect the price. The significance of logistics infrastructure (both for storage and transportation) for the market of fish products is enhanced by the remoteness of the main production areas (Far Eastern and Northern fishery basins) from the main consumption regions (Central Russia, the Volga Region, the Urals). For this reason, the share of delivery and storage in the structure of the price of fish products may reach more than 20%.

Facilitating upgrades of storage capacities and eliminating the shortage of specialised rail cars will make it possible to reduce price volatility for fish products. The implementation of decisions that have been taken[4] involves the same problems as when implementing the development programme for a network of storehouses for fruit and vegetables. As for the creation of WDCs

Price structure for fish products originating from the Northern and Far Eastern basins
(%)



Source: Ministry of Agriculture of the Russian Federation.

[4] *Order of the Ministry of Agriculture of Russia No. 189, dated 20 April 2017, 'On Approving the Strategy for the Development of Sea Terminals for the Complex Service of Fishery Fleet Vessels with due Regard to Onshore Logistic Infrastructure Designed for Transportation, Storage, and Distribution of Fish Products'.*

and transport logistic facilities (TLFs), this is either at the stage of design documentation (e.g., the WDC in Vladivostok), or implemented projects are underutilised (Seroglazka terminal in Petropavlovsk-Kamchatsky). Therefore, it would be reasonable to carry out inventory reconciliation of the existing WDCs and TLFs and analyse their performance indicators to discover the reasons for poor demand for them and to develop plans for the optimisation of fish product supplies to the domestic market via Russian fishery ports.

The continued decline of volatility in the food market while the amplitude of price fluctuations remains high (as compared with the markets of non-food products and services) indicates the need to continue implementation of measures for the development of the agroindustrial complex.

The availability of oil storage facilities in the regions is also of crucial importance in regional inflation differences. This factor determines price volatility for petrol and diesel fuel in the Kursk region, where there are no large petroleum storage facilities. The construction of motor fuel storage facilities in regions where there are no such facilities or their shortage may have a positive impact on pricing in the retail market of automotive petrol and diesel fuel. The possibility of small-batch shipment of oil products by oil companies to independent business entities and the availability of free tanks for the purpose of reserve formation have a significant impact on the formation of motor fuel prices in the region.

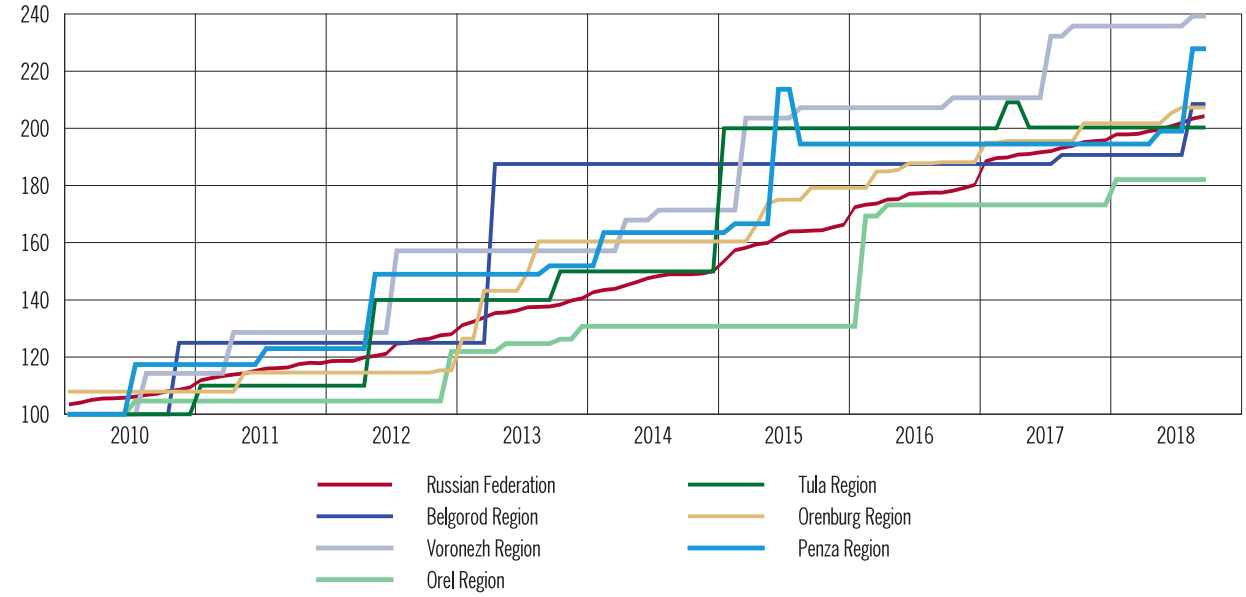
Underdeveloped transport logistics amid non-uniform regional supply of goods and services and limited transport accessibility of certain areas

The factor of poor development of transport infrastructure in the light of regional non-uniformity of goods and service supply and limited transport accessibility of certain areas is the most important for the price trends of food products: when self-sufficiency of fast-moving consumer goods is inadequate, demand for regular, well-established supplies of these products from other regions arises. In this situation, prices in the region start to depend on the cost of transportation and on factors existing in the constituent entities where the imported products are manufactured. Regional deviations here are most significant for goods which are also characterised by low self-sufficiency throughout Russia. Milk is one of them. Over the last three years, persistent deviations in price growth above the nationwide trend were recorded, for example, in the Novgorod, Samara and Chelyabinsk Regions. In these regions, the level of self-sufficiency of milk and dairy products in 2017 was less than 70% vs the Russian average of about 80%. This problem also remains topical for remote regions of the North and Far East, among other things, in terms of consumption of meat, vegetables, fruit, and other food products. The negative value of this factor may be mitigated by the development and maintenance of transport infrastructure and achievement of self-sufficiency with respect to key food products for overall Russia and in individual regions (with due regard to agroclimatic conditions). For remote regions, uninterrupted food supplies and the formation of a storage infrastructure to support the necessary food product stocks and motor fuel reserves will make a positive impact.

Suboptimal tariff regulation patterns in some regions

Price volatility in some regions is caused by abrupt, irregular (once in several years) revisions of regulated prices. This results from the unwillingness to cause increased social tension by raising prices, as well as from the emerging need to optimise budget expenditures associated with the subsidisation of services and regulated prices. This factor is especially evident in the markets of utility services and services of municipal passenger transport. In some cases, abrupt price revisions may lead to a one-time price growth of 30-50%. This was the case, for example,

CPI based on 'Bus Fare' microcomponent
(January 2010 = 100%)



Sources: Rosstat, Bank of Russia calculations.

with municipal passenger transport fares in the Belgorod, Tula, Penza and Orel Regions. In order to prevent such cases in future, it is necessary to implement a country-wide transition to long-term regulation of prices, which involves their regular and predictable adjustment.

Individual changes to the regulatory framework produce one-off impacts on the price environment. For example, the introduction of mandatory electronic certification of livestock products in the Federal State Information System (FSIS) 'Mercury' has a significant influence on livestock prices. Starting 1 July 2018, electronic certification is being introduced for agricultural producers (previously, they prepared such documents on paper). Starting 1 July 2019, it is introduced for manufacturers of final products, distributors, retailers, and food service enterprises (for the latter, veterinary certification is launched for the first time). Therefore, prices for the goods which go through the greatest number of intermediate links on the way from raw materials to the consumer will be the most responsive to the measures being implemented. Such goods include, among other things, meat and dairy products. We can also expect a more significant effect on food service prices: as estimated by this sector's enterprises interviewed by the Bank of Russia, their suppliers increase prices by 10% on average if products are delivered using the Mercury system. In the primary sector, that is, the production of agricultural raw materials, the launch of electronic certification is expected to become the most burdensome for small producers. That is why most affected will be prices for goods of which production structure includes a high share of small enterprises. These are milk and dairy products (almost a half of all dairy production falls on households, farmers, and individual entrepreneurs) and beef (agricultural organisations produce only 34% of these products).

Skills shortages

Skills shortages lead to growing labour costs, which provokes accelerated inflation in the sectors and regions where the shortage is most notable. This factor is significant for price dynamics of medical services, educational services, and the footwear, clothes, and underwear

markets. In some regions, skills shortage emerged as key factor causing CPI deviations from the Russian average, for example, in the Tomsk and Ivanovo Regions, where growing costs of remuneration to the employees of medical institutions was associated with the need to hire skilled personnel. Skills shortages in these constituent entities emerged, among other things, because of migration outflows to regions with a higher income level. To eliminate skills shortages in certain sectors and regions, it is necessary to develop educational and advanced training programmes in respective areas of training.

Some non-monetary factors have no pronounced regional specifics and are typical of individual sectors. Nevertheless, in different periods of time, their influence on price trend volatility may manifest itself in various regions because of the differences in the structure of goods and service consumption and other conditions which may arise from time to time. Factors that may be assigned to this group are given below.

Lack of provision with Russian primary products and components

The level of provision with Russian primary products or components defines the level of reliance of Russian manufacturers on imported supplies. A greater share of imports in the structure of material costs leads to price volatility associated with the influence of external factors. For example, imported spare parts and components make up a significant share of the net cost in the car industry. Automotive manufacturers note that most Russian suppliers of spare parts and components cannot supply products of appropriate quality. As a result, the price of cars manufactured in Russia grows more reliant on the foreign exchange rate and foreign suppliers' policies.

Lack or non-competitiveness of Russian equipment

The lack of competitive factories for certain kinds of equipment and machinery in Russia and the lack of Russian primary products and components are similar problems. Therefore, manufacturers have to use more expensive imported machinery and often incur costs for its maintenance abroad or involving foreign companies. This problem is significant not only for the manufacture of goods but also for the service sector. For example, most Russian airlines operate foreign planes, because Russian analogues are less economical and have poorer fuel efficiency. As a result, some kinds of maintenance of planes and motor repair are performed abroad, which increases airlines' foreign currency costs and affects pricing. The problem may be solved by creating conditions for the provision of all kinds of maintenance of foreign planes in Russia and by developing mechanisms of protection from foreign currency risks.

To reduce the dependence of prices for individual goods and services on external factors, it is necessary to support the development of production of competitive Russian analogues of imported, intermediate and investment, products.

High wear of production equipment

Many sectors are also characterised by the high wear and low efficiency of equipment in use. It is a pressing problem, in particular, for the light industry. The rate of equipment wear in the industry is about 60%, while in some garment manufactures, especially in small ones, the share of obsolete equipment may reach 80%. Low equipment efficiency increases the net cost of products, and high wear and tear creates the risks of breakdowns and production shutdown. All

of the above affect the price. The problem may be solved by supporting fixed capital investment for the purpose of upgrading deteriorated and obsolete production assets.

The Bank of Russia watches pricing factors in the markets of goods and services. Further implementation of the above proposals will mitigate the influence of non-monetary factors and increase the effectiveness of price stability support with monetary policy measures nationwide and in Russian regions.

Appendix 4

Estimated impact of VAT increase on inflation[1]

The increase of the standard VAT rate from 18% to 20% effective from 1 January 2019 will produce a significant impact on inflation in 2019. The Bank of Russia will take this fact into account in developing its mid-term macroeconomic forecast and in making its key rate decisions.

According to the Bank of Russia's estimates, the range of the VAT contribution to inflation is rather wide, ranging from 0.6 pp to over 1.5 pp. According to the baseline estimate, the VAT increase will produce a major impact on inflation immediately after the rate is changed, during the first months of 2019, and its extent will be about 1 pp.

Estimated impact of VAT increase on inflation

According to the Bank of Russia's baseline estimate, the contribution of the VAT increase to annual inflation in Russia will be 0.9 pp to 1.0 pp. This estimate was obtained by adjusting the direct 'technical' passthrough of the VAT increase from 18% to 20% to prices with due regard to the taxation structure in Russia.

Apart from the taxation structure, the extent of VAT passthrough to prices is affected by a number of additional factors which both suppress and intensify the influence of the VAT increase on inflation. The range of the estimated contribution of the VAT increase to inflation, allowing for the taxation structure in Russia and additional factors, is 0.6 pp to 1.5 pp (for the detailed description of the factors affecting the baseline estimate see 'Taxation structure'; additional factors shaping the aforesaid broad interval are described in the subsections on additional factors reducing or intensifying the VAT increase passthrough to prices).

VAT increase contribution to annual inflation, by factor

Factors	Influence on estimated VAT increase contribution to inflation, pp	Notes
The Bank of Russia's baseline estimate: VAT increase contribution to inflation, allowing for taxation structure	**+0.9–1.0**	
VAT increase contribution to inflation, allowing for taxation structure and additional factors	**+0.6–1.5**	
Direct 'technical effect' of increasing VAT from 18% to 20%	+1.7	Contribution of VAT increase to prices of all goods and services, without adjustments
Taxation structure influence		
Goods and services subject to a discounted or zero VAT rate	-0.6	33% of goods and services in the CPI
Simplified taxation system for microenterprises	-(0.1–0.2)	About 15% of gross output
Additional factors		
Factors reducing the VAT increase passthrough to inflation		
Parameters of budget expenditures	-(0.2–0.3)	Slower spending of budget revenue from VAT increase
Indexation of tariffs for goods and services of natural monopolies	-0.15	No further (above 4%) indexation of tariffs of natural monopolies
Demand sensitivity to price movements	-(0.2–0)	Competition for customers

[1] *A detailed analysis is provided in the Report on the Estimated Impact of the Increase of the Standard VAT Rate on Inflation published on the Bank of Russia website in the section Monetary Policy/Economic and Financial Market Outlook.*

Factors increasing the VAT increase passthrough to inflation		
Inflation expectations	+ (0–0.2)	Assessment of economic situation and economic policy by enterprises and households
Specific features of price policy of manufacturers and sellers/competitive environment in markets of individual goods and in regional markets	+(0.15–0.85)	Assessment of market situation by enterprises

Source: Bank of Russia calculations.

Taxation structure

Raising the standard VAT rate will only affect two thirds of goods and services in the consumer basket based on which inflation is calculated. Other categories will be subject to a discounted (10%) or zero VAT rate[2]. These include, among other things, fast-moving food products (meat and fish products, dairy products, eggs, cereals, bread, salt, and vegetables), medical and children's goods, and socially important services (education, healthcare, passenger transport, etc.). Accounting for discounted taxation decreases the estimated VAT impact by 0.6 pp. Besides this, some transactions not related to preferential goods and services will be exempt from VAT if such goods and services are sold by microenterprises[3]. Therefore, they will not necessarily lead to an increase in prices in response to VAT changes. This factor may decrease the contribution of the VAT increase by 0.1-0.2 pp.

Additional factors decreasing the VAT increase passthrough to prices

Parameters of budget expenditures. The baseline estimate assumes that due to the fiscal rule additional proceeds from VAT will transform into budget expenditures of the same period. This will provide some support to internal demand and increase its payment capacity. However, if the proceeds are utilised more slowly (e.g., due to a traditional seasonal shift of expenses to the end of the year or due to the dispersed nature of implementation of mid-term governmental programmes), the aggregate final demand will be more moderate, which will reduce the pace of price increases by 0.2-0.3 pp.

Indexation of tariffs of natural monopolies. Utility services are taxed at the standard VAT rate, and therefore their prices may also respond to the tax increase. The baseline estimate assumes that tariffs may be raised for the amount of VAT increase in excess of their regulatory annual indexation in line with the inflation target of 4%. If this does not happen, the final VAT passthrough to the CPI will be 0.15 pp less.

Demand sensitivity to price movements. Price response to the increase in indirect tax will be less pronounced in the markets of goods and services where the demand is more sensitive to price change. In this situation, companies wishing to maintain their market volumes and retain consumers in new conditions may partially accept the additional expenses associated with the increase of tax rates without carrying them over to the final prices. The decrease in the VAT passthrough to inflation due to this factor may reach 0.2 pp.

Additional factors intensifying the VAT increase passthrough to prices

Inflation expectations. The final scale, speed, and sustainability of inflation movements in response to the VAT increase also depend significantly on the response of inflation expectations

[2] *In accordance with Clauses 1 and 2, Article 164 of Chapter 21 'Value added tax' of the Tax Code of the Russian Federation.*

[3] *In accordance with Clause 2, Articles 346.11 and 346.12 of Chapter 26.2 'Simplified taxation system'of the Tax Code of the Russian Federation.*

of households and businesses. Growth of inflation expectations may cause the materialisation of secondary proinflationary effects and lead to more significant inflation growth.

For now, the response of inflation expectations to the announced change is restrained, but the situation requires detailed regular monitoring. The main response of expectations may appear in the end of 2018-2019 Q1, considering that the expectations of households are adaptive, and the population usually responds to the actual price increase. During the first half of 2019, household inflation expectations are expected to decline gradually.

Price policy of manufacturers and sellers in individual markets. A more significant VAT increase passthrough to end prices may be caused by the monopolistic behaviour of manufacturers and sellers, especially in sectors with low price elasticity of demand, as well as by the marketing policy of companies aimed at retention of a proportional product line (e.g., linking prices to specific anchor levels, including by making 'pretty' price tags or proportionally increasing prices of interchangeable and interrelated goods with different price levels). The effect of these factors may be significant but non-uniform in terms of market segments and geographic regions.

This is partially confirmed by the results of the survey of enterprises conducted by the Bank of Russia in July 2018[4]. A significant variance in the planned response of enterprises to the VAT increase is observed: some of them do not plan to raise prices at all; others, in contrast, are prepared to increase prices by an amount considerably greater than 2%. In general, the results of the survey show that if manufacturers and trade enterprises implement their currently existing plans regarding price increases, inflation may additionally grow due to the VAT increase by 1.5 pp.

Trajectory of the impact of the VAT increase on inflation

According to the Bank of Russia's estimates, the main price increase in response to VAT growth will take place immediately after the rate is changed, that is, in the first months of 2019. At the same time, as the tax increase was announced in advance, a small adjustment by manufacturers and sellers, including those wishing to implement a gradual adjustment of prices, is possible as soon as 2018 Q4. The Bank of Russia estimates its extent at 0.1-0.2 pp.

Taking into account the VAT passthrough, annual inflation may peak in 2019 Q1 and temporarily exceed 4%. The quarterly price growth rate will slow down significantly as soon as 2019 Q2 fluctuating around 4% in the second half of 2019. However, annual inflation will decline during the year more slowly, due to the low base effect in the first half of 2018, among other things. In 2020 Q1, annual inflation is expected to return to 4%.

Estimated VAT contribution to CPI change (pp)

	YoY	QoQ
Q4 2018	0.1	0.1
Q1 2019	1.1	1.1
Q2 2019	1.0	0.0
Q3 2019	0.9	-0.1
Q4 2019	0.9	0.0

Source: Bank of Russia calculations.

[4] *Detailed information is available in the Report on the Estimated Impact of the Increase of the Standard VAT Rate on Inflation.*

The Bank of Russia will monitor inflation expectations dynamics and the influence of other factors listed above on prices and will adjust the estimated effect of the VAT increase in its forecasts, if necessary.

VAT increase experience in other countries

Many countries have increased VAT in the recent years. 23 cases of VAT increases in 16 countries in the period of 2005-2016 were reviewed[5]. The extent of the VAT rate change in those cases varied from 1 pp to 5 pp. In all countries, a considerable acceleration of price growth in response to tax changes was observed. In the selected sample of countries, a 1 pp VAT increase led to an average increase in inflation of 0.4-0.6 pp.

Influence of the economic situation and fiscal policy on the passthrough of VAT to prices

Depending on the economic conditions and fiscal policy parameters, the estimated annual inflation response varies from 0.3 pp to 1.1 pp per each 1 pp of rate increase.

In particular, when the indirect tax rate was increased to reduce the budget deficit and budget expenditures were not increased in the current period or in the near future (fiscal tightening was observed), demand declined considerably. Furthermore, the economy was often already in decline; therefore, the passthrough of tax changes to prices was quite limited, close to the lower bound of the indicated range (e.g., in Greece in 2011 and in Hungary in 2009). In contrast, if additional tax proceeds immediately or gradually transformed into additional budget expenditure, it supported demand and increased the influence of the tax hike on inflation.

Response of central banks to VAT increases

It is important to note that in many countries, despite the significant price response to VAT growth, central banks did not tighten their monetary policy any further (e.g., in Hungary in 2009, in the Czech Republic in 2013, in South Africa in 2018, etc.). This is associated with the fact that the effect of tax measures on annual inflation is actually short-lived and exhausted over a one-year horizon.

Furthermore, the response of monetary authorities largely depended on how much the VAT increase dampened demand. The change in demand also depends a lot on the economic conditions in the country. Japan is a good example. By the time of the VAT increase in 2014, the central bank had been implementing an accommodative monetary policy to raise inflation to the target level, and the 3 pp VAT increase by the government was an additional measure aimed at achieving this target. However, in response to the VAT increase, which was almost fully carried over to prices, consumer demand and investment contracted greatly, and, after a short-term surge, inflation fell below the target of the Bank of Japan. This was one of the factors of maintaining a loose monetary policy to this day.

When the VAT is increased, most central banks keep a close eye on the response of the economy and financial markets to identify potential secondary inflation effects. They are more likely to occur in economies where inflation expectations remain sensitive to price fluctuations. If the risks of increased inflation expectations and persistent acceleration of inflation materialise, a change in the monetary policy stance becomes justified and necessary (such a situation was observed, for example, in Poland).

[5] *Detailed information is available in the Report on the Estimated Impact of the Increase of the Standard VAT Rate on Inflation.*

Appendix 5

Influence of the liquidity surplus on deposit and credit operations

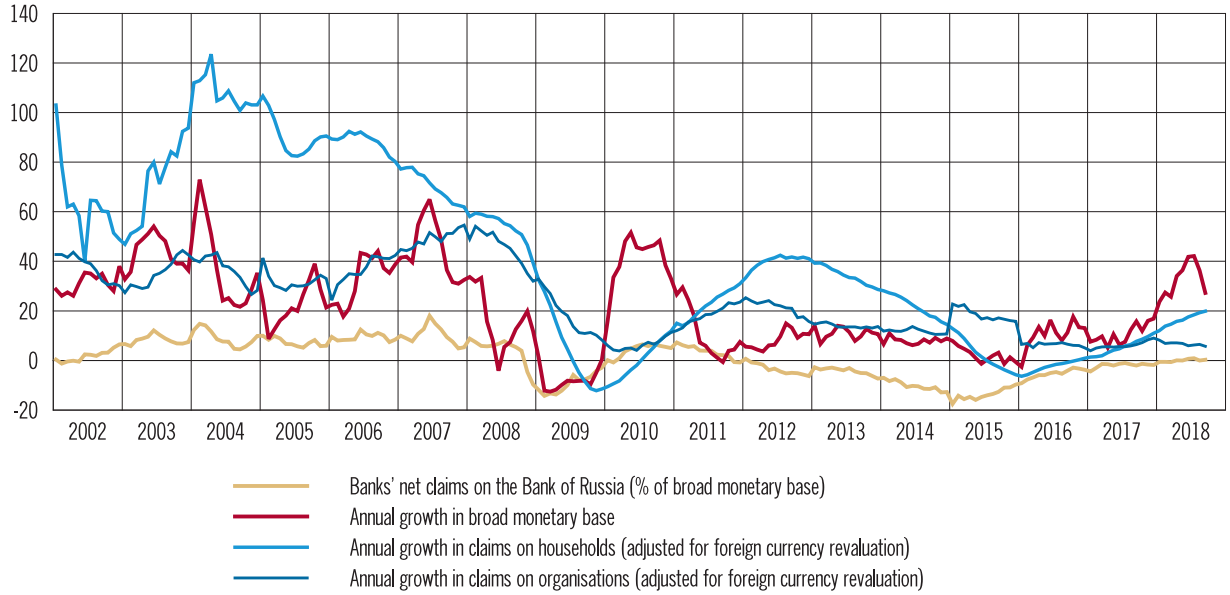
When there is a significant banking sector liquidity surplus, the issue of its influence on the credit and deposit activity of banks will occasionally arise. When developing and implementing monetary policy, the Bank of Russia proceeds from the fact that when there is an effective mechanism for managing bank liquidity, the influence of its fluctuations, including transition from a structural liquidity deficit to a structural liquidity surplus, on bank operations is insignificant. This is confirmed by the results of empirical analysis and econometric estimates of banking sector liquidity and bank activity in the credit and deposit markets in Russia in 2002-2018.

In recent years, a significant liquidity surplus has formed in the banking sector[1]. In 2017 Q3-2018 Q3, it grew by about 3 trillion rubles. In these conditions, the interest in the possible influence of such extensive growth of bank liquidity on the whole banking sector and on the volumes and parameters of credit and deposit operations of banks with the real sector naturally grew.

When developing and implementing its monetary policy, the Bank of Russia proceeds from the realities of modern financial systems[2]. In modern conditions, banking sector liquidity and credit and deposit operations of the banking sector are interlinked as follows.

- Banks' operations aimed at lending to the real economy and attraction of deposits are weakly associated with the bank liquidity level and can be performed both in structural surplus and structural deficit conditions.
- When there is an efficient bank liquidity management mechanism, the influence of liquidity fluctuations on bank operations, including the transition from a structural liquidity deficit to a structural liquidity surplus, will be insignificant. Banks, regardless of their liquidity, are

Bank liquidity to bank lending activity ratio
(%, unless indicated otherwise)

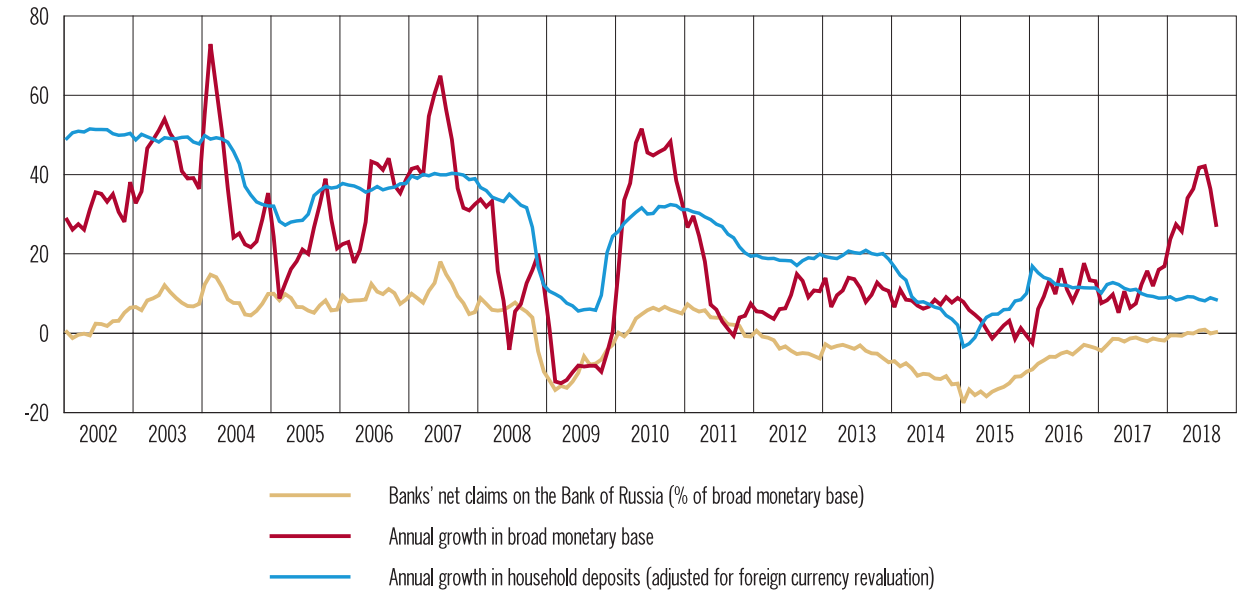


Source: Bank of Russia.

[1] *See Section 2 for details.*

[2] *In particular, they are set forth in Appendix 10 to the Monetary Policy Guidelines for 2018-2020.*

Bank liquidity to bank deposit-sourcing activity ratio
(%, unless indicated otherwise)



Source: Bank of Russia.

confident that they can raise funds from or place excessive funds with the central bank and can shape their policy in the credit and deposit markets based on their strategic priorities and long-term expectations, instead of short-term liquidity flows.

The results of empirical analysis and econometric estimates of the banking sector liquidity and bank activity in the credit and deposit markets in Russia in 2002-2018 support the aforesaid interrelations.

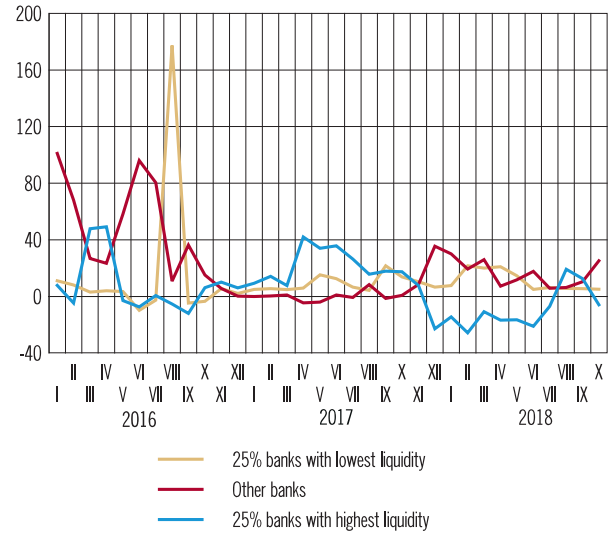
Analysis shows that, in practice, the Russian banking sector generally does not show signs of the influence of bank liquidity on banks' operations in the credit and deposit markets. For example, in 2011-2012, when banks' net claims on the Bank of Russia[3] were decreasing and growth of the monetary base was slowing down, the credit activity of banks was increasing and the deposit growth rate went down. On the contrary, in 2007, banks' claims on the Bank of Russia were increasing and growth of the broad monetary base was accelerating simultaneously with the slowdown in retail lending and peak growth rates of retail deposits.

The analysis of individual banks'[4] performance also supports these findings. Banks with a lower liquidity level do not demonstrate higher rates, lower activity in the credit market or higher activity in the deposit market, and vice versa.

[3] *Net claims of banks on the Bank of Russia include not only claims and liabilities related to bank liquidity management but also other claims and liabilities (including subordinated loans, funds granted under special instruments, etc.). However, most other claims and liabilities are fairly inert, and changes in this indicator adequately reflect bank liquidity trends.*

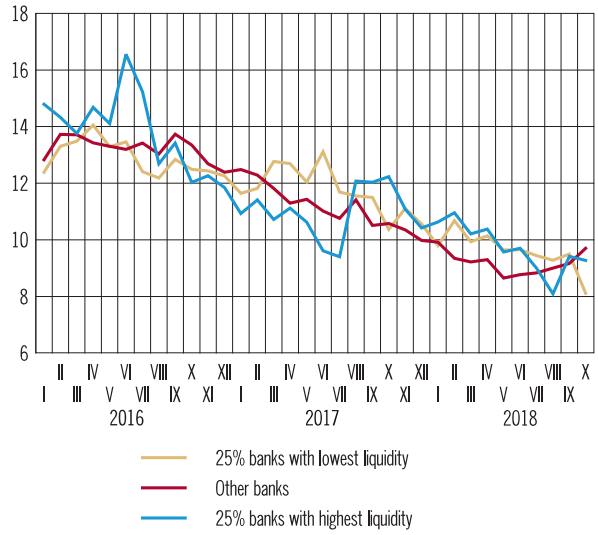
[4] *For the purpose of analysis, 32 banks comprising the largest money market participants were taken, for which liquidity indicators were calculated on a daily basis. Eight banks specialising in money market operations or in settlement services were excluded from the calculation (banks whose broad liquidity position in 2016-2018 exceeded 50% of their aggregate assets at least once). The 24 remaining banks comprise 75% of assets of the Russian banking sector, 86% of placed corporate loans, and 79% of raised household deposits.*
Since from the point of view of an individual bank there is no major difference between funds placed on a deposit with the Bank of Russia or with a large commercial bank, the analysis of the behaviour of individual banks used a broad liquidity indicator which took into account bank liquidity redistribution mechanisms and included net claims on the Bank of Russia, other banks, and general government. Since bank liquidity may fluctuate within a short period of time due to single large transactions, the average monthly indicators smoothing daily volatility of indicators are used as the liquidity indicator.

Average growth in lending to non-financial organisations by individual bank groups
(%)



Source: Bank of Russia.

Changes in rates on corporate long-term ruble loans, individual bank groups
(%)



Source: Bank of Russia.

For example, the analysis of the ratio of bank's liquidity position to its operations in the credit market does not make it possible to identify sustained and economically justified influence of liquidity on lending volumes or on credit rates[5]. No more than 4% of changes in interest rates and loan portfolio dynamics can be explained by changes in bank liquidity. Even at 90% confidence level the hypothesis that the analysed indicators are not interconnected cannot be completely refuted.

The absence of a pronounced relationship between liquidity and credit activity might be explained by the general noisiness of indicators in individual banks due to specific features of the business model of individual banks or due to single large transactions. However, switching to groups of banks does not provide any reliable evidence of a relationship between higher liquidity of banks and their propensity for increasing their lending either. On the contrary, banks with higher liquidity during most of the analysed period are characterised by lower lending growth rates, and their credit rates systematically exceed those offered by other banks.

The analysis of data on the interrelation of bank liquidity and bank activity in the deposit market also confirms the absence of the influence of the former on the latter.

When analysing bank liquidity and deposit activity, one may get the impression that these indicators are interrelated. The econometric analysis indicates this as well: the liquidity level may explain up to 8% of deposit portfolio dynamics, and the hypothesis that there is no link between these indicators cannot be refuted.

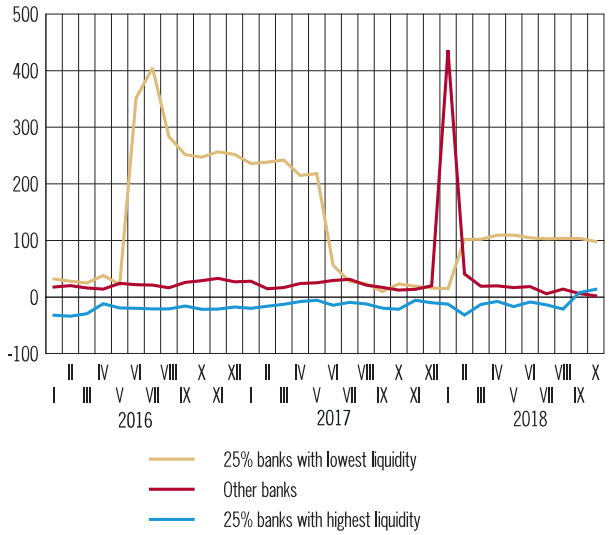
This is especially noticeable when analysing deposit operations dynamics in banks with different liquidity levels. However, this particular analysis reveals the real reason for such a ratio: specific features of individual banks affecting both their liquidity and operations in the deposit market. For example, the outperforming growth of deposits in banks with the lowest liquidity level is associated with the restructuring of the portfolio of retail operations within banking groups. In the same way, the decline of household deposits in banks with high liquidity is associated with

[5] *The indicators were normalised to eliminate the effect of structural shifts. Since the loan portfolio growth rates and the liquidity position during the analysed period show considerable variance and a single outlying observation may shift the average indicator, the median value was used to normalise the indicators.*

the fact that this group of banks included banks undergoing resolution, which faced an outflow of depositors' funds, as well as a number of subsidiary credit institutions of non-resident banks that reduced their operations in the Russian retail market. The dynamics of deposit rates may serve as an additional argument for assuming that banks' liquidity does not influence their policy in the deposit market. The rates in banks with the highest and the lowest liquidity levels differed insignificantly.

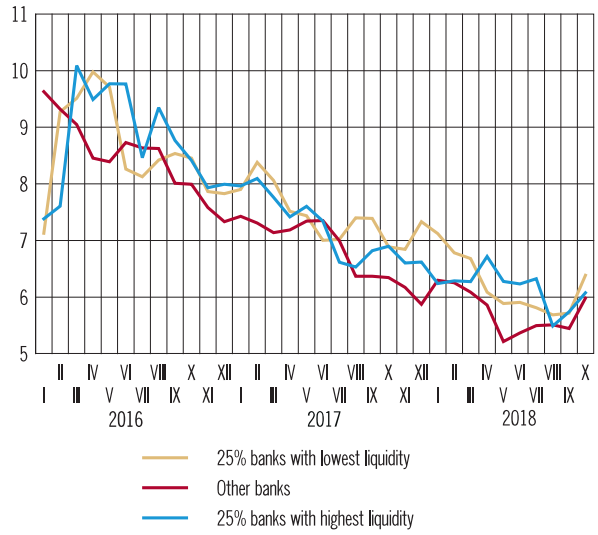
The analysis of the ratio of bank liquidity to the rates on bank operations in the deposit market also shows that there is most likely no relation between these indicators.

Average growth in household deposits, individual bank groups
(%)



Source: Bank of Russia.

Changes in rates on long-term ruble deposits of households, individual bank groups
(%)



Source: Bank of Russia.

Appendix 6

Monetary programme

The main objective of monetary policy under the Bank of Russia's inflation targeting strategy is to keep inflation at around 4%, while its operational goal is to bring overnight money market rates closer to the Bank of Russia key rate. This strategy does not provide for setting and delivery on quantitative benchmarks for any economic indicators, including monetary ones. In addition to the banking sector liquidity forecast, the Bank of Russia calculates monetary programme indicators. They supplement the forecast indicators, which the Bank of Russia takes into account when elaborating and implementing its monetary policy.

Entry 1 'Monetary base (narrow definition)'

Growth of the monetary base over the forecast horizon is mainly determined by the increase in the volume of cash in circulation due to the expected growth of economic activity. Meanwhile, a wider use of cashless payments will still curb movements of this indicator. The Bank of Russia's scenario with unchanged oil prices provides for somewhat higher growth of the volume of cash in circulation than the baseline scenario.

The amount of required reserves for ruble-denominated liabilities which is held in special accounts with the Bank of Russia will not change considerably during the period under review. The calculation of this indicator assumes that the required reserve averaging ratio will remain at 0.8. Entry 3.3 'Other net non-classified assets' reflects growth of required reserves under credit institutions' FX liabilities as a result of the Bank of Russia's decision to increase required reserve ratios effective from 1 August 2018.

Entry 2 'Net international reserves'

The implementation of fiscal policy has a considerable impact on monetary programme indicators. The estimated utilisation of funds of the NWF and the purchase of foreign currency for its replenishment under the fiscal rule take into account the budgetary projections of the Russian Ministry of Finance.

Growth in Entry 2 'Net international reserves' will be supported mainly by the operations for the purchase of foreign currency by the Russian Ministry of Finance under the fiscal rule. The forecast for 2018 takes into account the Bank of Russia's decision to suspend purchases of foreign currency in the domestic FX market until the end of the year under the fiscal rule. The decision regarding foreign currency purchases in the domestic market, postponed through the end of 2018, will be made with due regard to the actual state of financial markets. The decision regarding the foreign currency purchases in the domestic market which were postponed in 2018 will be taken after regular purchases are resumed. Exclusively for the purposes of model-based calculations in support of basic macroeconomic forecasts, the Bank of Russia assumes that foreign currency purchases in the domestic market under the fiscal rule, suspended in 2018, will progress evenly over the whole forecast horizon of 2019-2021. Also, the increase in international reserves will be driven by the Bank of Russia's purchases of monetary gold.

Allowing for various assumptions regarding oil prices in the Bank of Russia's scenarios, net international reserves may reach 37-43 trillion rubles by the end of 2021.

Entry 3 'Net domestic assets'

Entry 3.1 'Net credit to general government'

Entry 3.1 'Net credit to general government' factors in the recourse to NWF funds to finance deficit of the federal budget, and extra oil and gas revenue. The decline in the net credit to general government amid foreign currency purchases under the fiscal rule translates into growth of net international reserves.

Entry 3.2 'Net credit to banks'

The value in Entry 3.2 'Net credit to banks' during the period under review will remain negative due to the continued significant liquidity surplus in the banking sector. In 2018, net credit to banks increased somewhat as the Bank of Russia suspended foreign currency purchases in the domestic market under the fiscal rule.

Entry 3.2.1.1 'Bank of Russia claims on refinancing operations' includes banks' operations to raise funds for longer terms through the use of specialised refinancing instruments, among other things. When calculating the monetary programme for 2019-2021, current values of the Bank of Russia's claims on banks under these operations are used.

The average correspondent account balances of credit institutions with the Bank of Russia in January-September totalled roughly 2.1 trillion rubles in 2018. By the end of 2018, a seasonal increase in the value of Entry 3.2.2 'Correspondent accounts of credit institutions with the Bank of Russia' to 2.4 trillion rubles and its modest growth in forthcoming years are expected.

Entry 3.2.3 'Bank deposits with the Bank of Russia and coupon OBR' is a balancing component of the monetary programme in the context of liquidity surplus. As a result of changes in other items of the monetary programme, the amount of deposits and coupon OBR issuance can reach 3.3-4.1 trillion rubles by the end of 2021.

Entry 3.3 'Other net non-classified assets'

The change in Entry 3.3 'Other net non-classified assets' was associated, among other things, with operations with the funds of the Banking Sector Consolidation Fund. During the forecast horizon, changes in this item are associated with the repayment of interest by the Bank of Russia on standard liquidity absorption operations and with the partial repayment of funds provided by the Bank of Russia earlier for the financial rehabilitation of individual banks.

Estimated key indicators for accounts of monetary authorities (monetary programme indicators)*

(trillion rubles, unless specified otherwise)

	1.01.2018 (actual)	1.01.2019		1.01.2020		1.01.2021		1.01.2022	
		Baseline	Unchanged oil price	Baseline	Unchanged oil price	Baseline	Unchanged oil price	Baseline	Unchanged oil price
1. Monetary base (narrow definition)	**9.9**	**10.6**	**10.6**	**11.2**	**11.3**	**11.7**	**11.9**	**12.2**	**12.5**
1.1. Cash in circulation (outside the Bank of Russia)	9.5	10.3	10.3	10.9	11.0	11.4	11.6	11.9	12.2
1.2. Required reserves**	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2. Net international reserves	**24.5**	**27.4**	**27.4**	**31.6**	**32.7**	**34.5**	**38.0**	**37.1**	**42.9**
– USD billion***	426	475	475	549	569	599	659	644	745
3. Net domestic assets	**-14.7**	**-16.7**	**-16.7**	**-20.4**	**-21.4**	**-22.8**	**-26.1**	**-24.9**	**-30.4**
3.1. Net credit to general government	-5.6	-8.4	-8.4	-11.9	-13.0	-13.8	-17.3	-15.6	-21.3
3.2. Net credit to banks	-3.9	-3.6	-3.6	-4.2	-3.9	-4.9	-4.4	-5.6	-4.9
3.2.1. Gross credit to banks	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3.2.1.1. Claims on refinancing operations****	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
3.2.2. Correspondent accounts of credit institutions with the Bank of Russia	-1.9	-2.4	-2.4	-2.4	-2.4	-2.5	-2.5	-2.5	-2.5
3.2.3. Bank deposits with the Bank of Russia and coupon OBR	-3.0	-2.2	-2.2	-2.8	-2.5	-3.4	-2.9	-4.1	-3.3
3.3. Other net non-classified assets*****	-5.2	-4.7	-4.7	-4.4	-4.5	-4.1	-4.4	-3.7	-4.2

** Monetary programme indicators calculated at a fixed exchange rate are based on the official exchange rate of the ruble as of the beginning of 2018.*

*** Credit institutions' required reserves deposited with the Bank of Russia under ruble-denominated liabilities (do not include funds in correspondent accounts of credit institutions with the Bank of Russia taken into account in the required reserve averaging procedure).*

**** The forecast of change in net international reserves takes into account Ministry of Finance operations to buy or sell foreign currency in the domestic FX market, operations of the Bank of Russia to buy monetary gold, and settlements under sell/buy USD/RUB FX swaps.*

***** Include claims on refinancing operations in rubles, including secured loans, repos, and the Bank of Russia's USD/RUB and EUR/RUB buy/sell FX swaps.*

****** Include operations with the use of funds of the Deposit Insurance Agency and the Banking Sector Consolidation Fund, the Bank of Russia's net interest expenses, and FX revaluation of assets.*

Source: Bank of Russia.

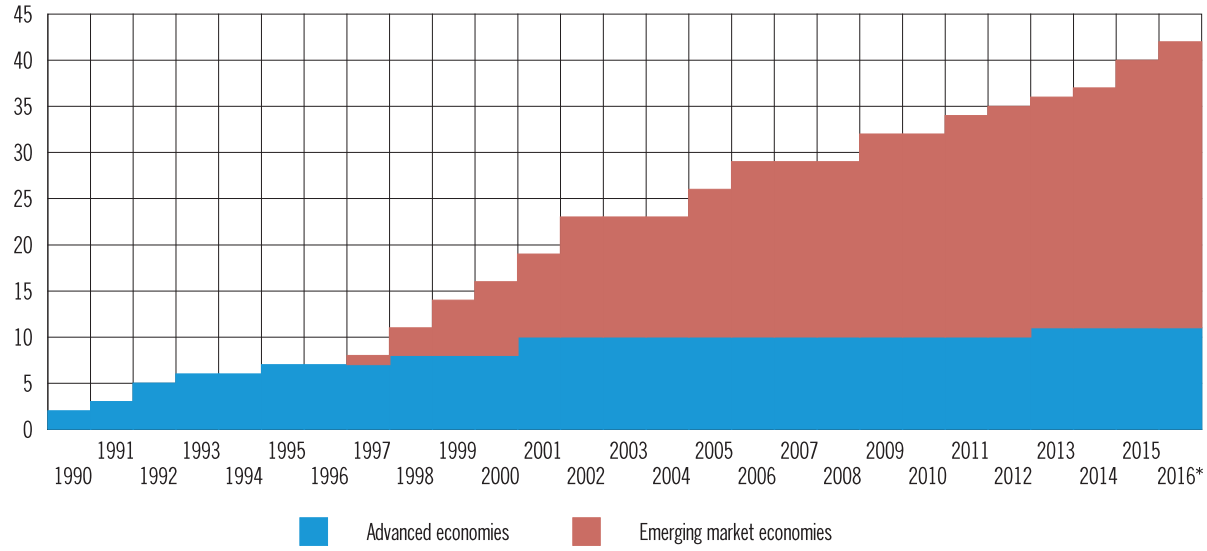
Appendix 7

Experience of inflation targeting countries

The place of inflation targeting countries in the world economy

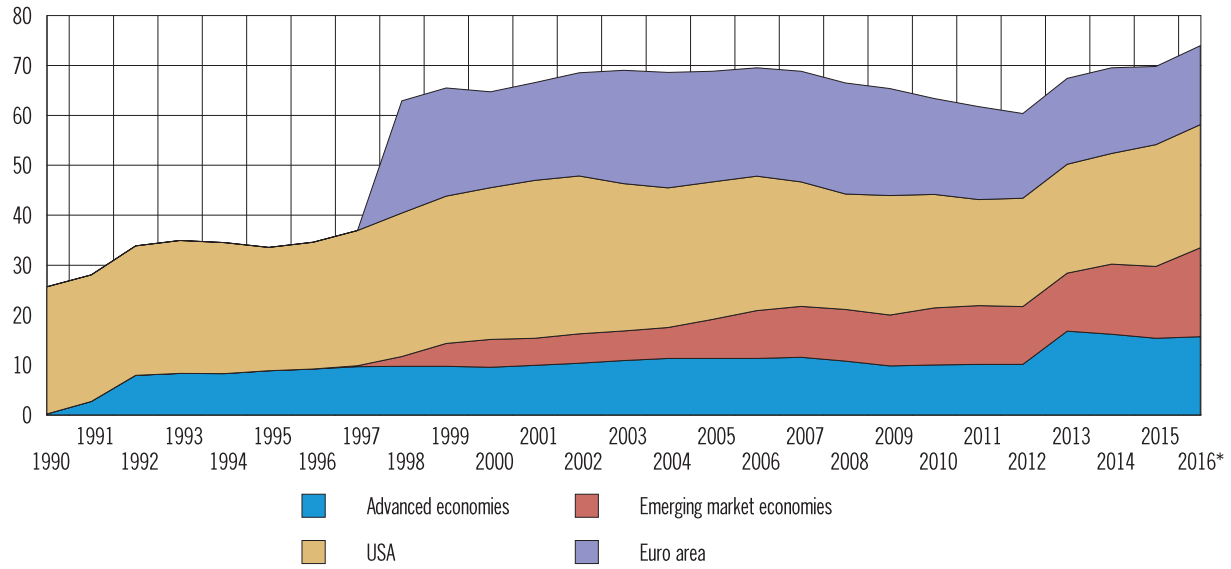
Since 1989, when New Zealand became the first country to adopt the inflation targeting regime, the practice has become widespread. According to IMF data, 40 countries have adopted this policy to date. They account for over one third of world GDP. Furthermore, although the USA and the euro area do not officially state that they implement inflation targeting, they still strive to achieve

More and more countries implement inflation targeting...
(number of countries)



** The latest classification is provided as of 2016 in IMF Annual Report on Exchange Arrangements and Exchange Restrictions.*
Source: IMF.

... while their share in the global GDP is growing
(share in the global GDP, %)



** The latest classification is provided as of 2016 in IMF Annual Report on Exchange Arrangements and Exchange Restrictions.*
Sources: IMF, Bank of Russia calculations.

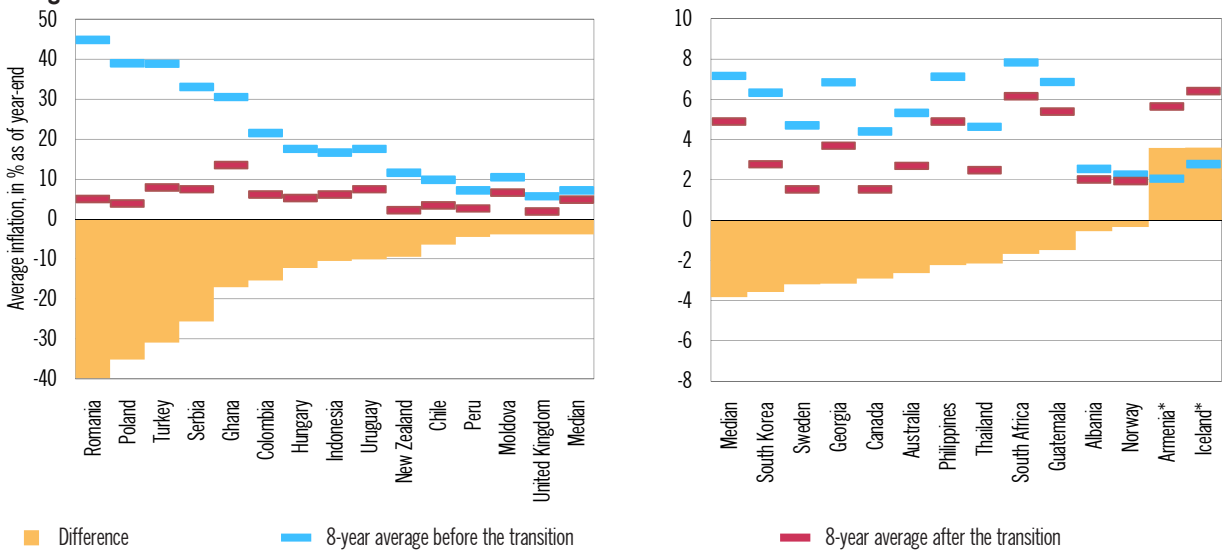
sustainably low inflation with a publicly known quantitative target. Taking these economies into account, the share of inflation-targeting countries in world GDP becomes almost 3/4.

Inflation targeting regime practice

Research results demonstrate that the transition to inflation targeting leads to lower inflation level[1] and volatility[2], lower sensitivity of prices to exchange rate movements[3], lower risk premiums[4] and real interest rates. Recent data also show that the inflation targeting regime positively affects long-term economic growth[5]. Furthermore, declining inflation expectations on the back of falling inflation and increasing public trust in inflation target allow the regulator to conduct more active countercyclical monetary policy and to smooth the impact of negative external factors on the economy[6].

The consumer price growth rate falls as a result of a consistent monetary policy which requires such important prerequisites as the independence and accountability of the central bank. As inflation slows down, so does its volatility. This leads to financial stability, protecting incomes and savings of businesses and households from unpredicted devaluation. In these circumstances, the confidence in the national currency grows and the share of FX deposits in the economy decreases.

After transition to inflation targeting, inflation went down to 1-digit values falling below 6% in 2/3 of countries...



** In Iceland and Armenia, inflation was low even before the official transition to inflation targeting in 2001 and 2006 respectively, however, during the global financial crisis these countries faced increased price growth rates.*

*** In Brazil and Israel (not shown on the chart), the 8-year inflation average before the transition was 628% and 92% respectively while the 8-year inflation average after the transition was close to 7% for both countries..*

Sources: IMF, Bank of Russia calculations.

[1] *See Neuman, von Hagen 2002; Hu 2003; Sheridan, Ball 2005; Goncalvez, Salles 2008; Willard 2006; Lin, Ye 2007; Lin, Ye 2009; Картаев 2016; Aguir 2017; Fratzscher et al. 2017.*

[2] *See Wilson 2006; Neanidis, Savva 2013; Bhar, Mallik 2010.*

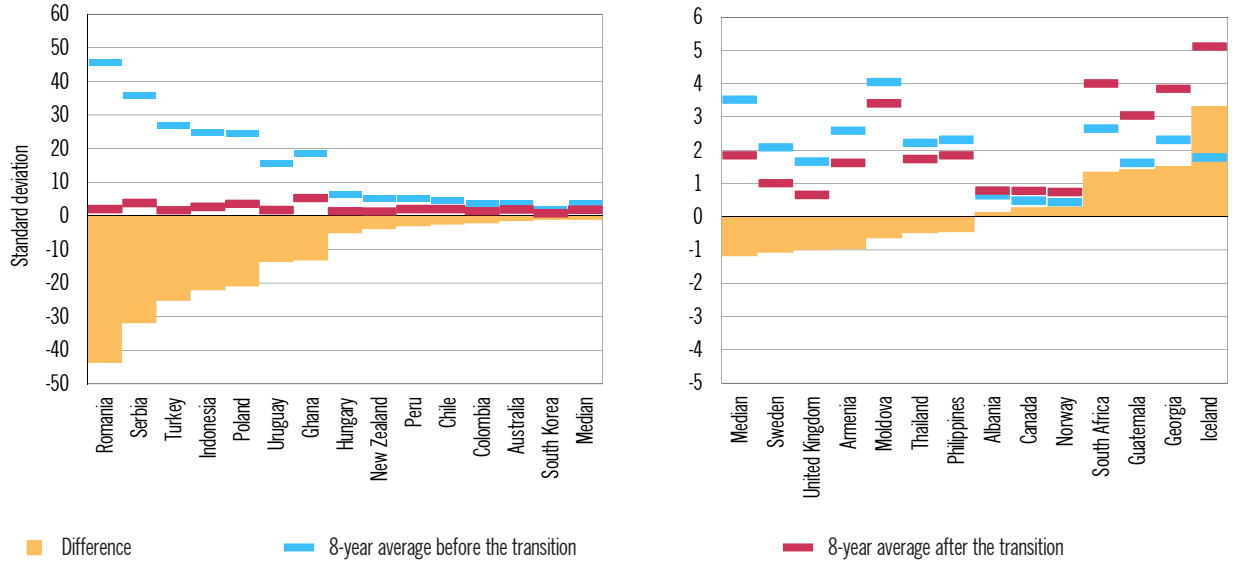
[3] *See Edwards 2006; Nogueira Junior 2007; Prasertnukul et al. 2010; Oladipo 2017.*

[4] *According to Borio et al. (2017), the consistent monetary policy (including the inflation targeting regime) is the key reason behind the long-term downward trend in real interest rates. Fouejieu, Roger 2013 and Kruškovic´ 2014 conclude that inflation targeting leads to lower risk premiums.*

[5] *The 'first generation' works suggest that the transition to the inflation targeting regime does not materially affect long-term growth. See Sheridan, Ball 2005; Walsh 2009; Fang et al. 2009; Brito, Bystedt 2010. However, in recent studies, the point of view that there is a positive influence prevails. See Hu 2003; Mollick et al 2011; Kurihara 2013; Ayres et al 2014; Hale, Philippov 2015; Kartaev et al 2016; De Gimaraes e Souza et al. 2016; Aguir 2017; Fratzscher et al. 2017; Kiladze 2017; Iyke, Ho 2018; Kartaev 2018.*

[6] *See Fisher (2011), IMF World Economic Outlook (2018).*

...while the volatility range shrank in 3/4 of countries

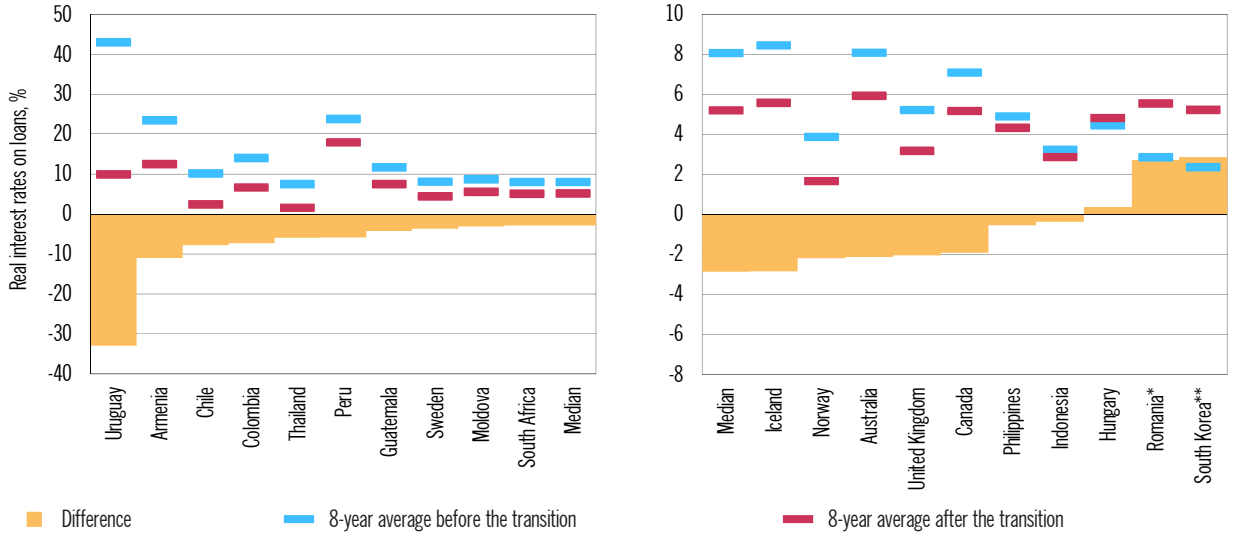


** In Brazil and Israel (not shown on the chart), the 8-year average standard deviation of inflation before the transition was around 60 for both countries while the 8-year average standard deviation after the transition was 3 for Brazil and 2 for Israel.*
Sources: IMF, Bank of Russia calculations.

Sustainably low inflation leads to lower uncertainty in the economy, inflation expectations and risk premiums. Real interest rates (especially, long-term) also fall and the range of their fluctuations shrinks. As a result, a more predictable environment for businesses and households is established, which is important for sustainable investment and economic growth.

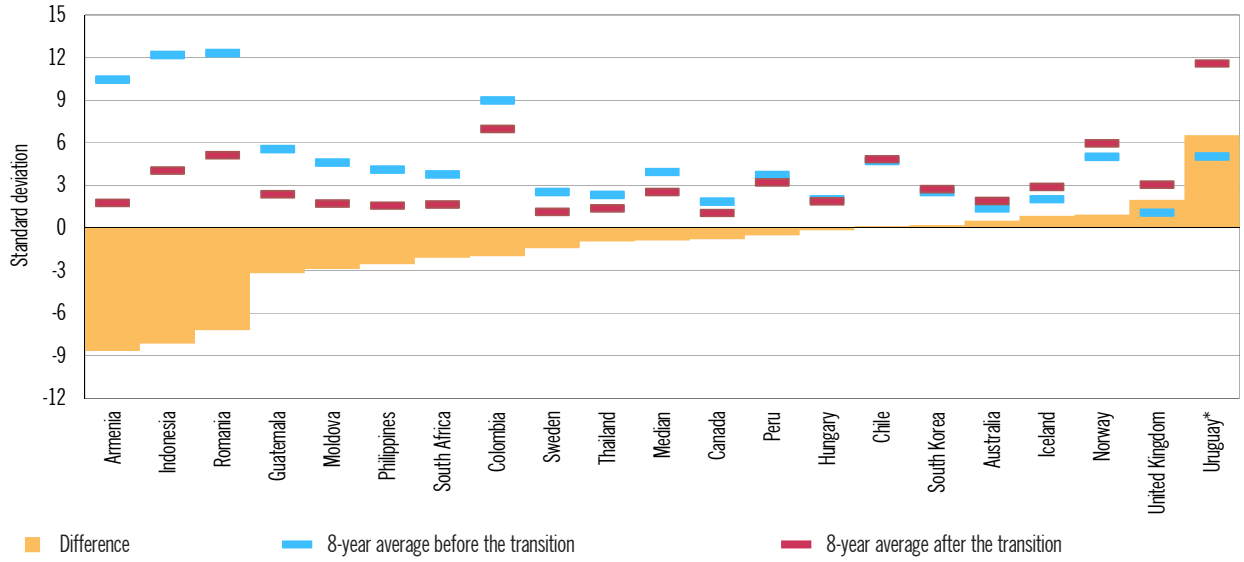
When the inflation targeting regime is implemented, central banks stick to a relatively tight monetary policy to bring inflation down to the target, which, usually, is significantly lower than historic values of consumer price growth rates. During this transition period, GDP growth may slow down, however, as price movements stabilise, positive effects of inflation targeting start to come to the fore.

After transition to inflation targeting, average real interest rates fell from 10 to 6%*...



** The number of countries was brought down to 20 due to lack of data.*
*** In South Korea and Romania, real interest rates before the transition to inflation targeting were low (2.4 and 2.8% respectively). After the transition, in order to maintain sustainably low inflation, real interest rates went up.*
Sources: World Bank, Bank of Russia calculations.

...while the scale of real interest rate fluctuations shrank in 3/4 of countries

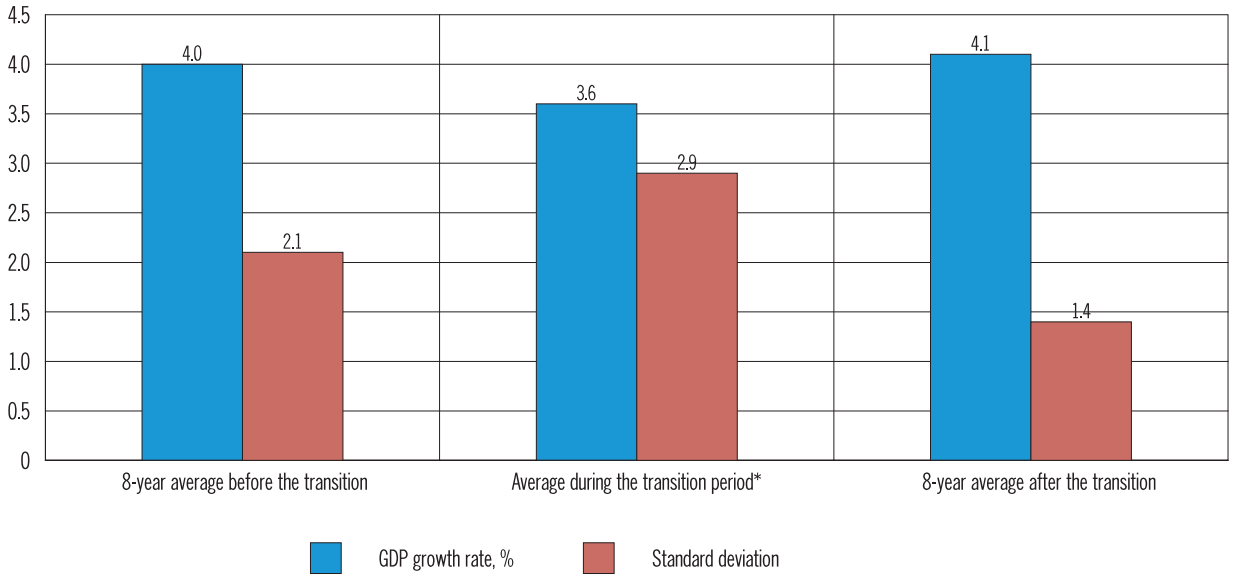


** The increased volatility of real interest rates in Uruguay is related to a surge of nominal interest rates in the year of transition to inflation targeting.*
Sources: World Bank, Bank of Russia calculations.

That said, successful economic development requires both consistent monetary policy of the central bank and balanced fiscal policy coupled with the absence of any significant economic imbalances that may make it susceptible to negative external factors.

The results of the implementation of the inflation targeting regime can be illustrated using the statistical data of countries that have enough relevant experience. We have selected countries that have been implementing inflation targeting for at least eight years, thus letting us speak about its effects with more confidence[7].

After the transition to inflation targeting, economic growth becomes more sustainable although the economy may face a slowdown during the transition period



** Three years, including the transition year, one year before and one year after the transition.*
Sources: IMF, Bank of Russia calculations.

[7] *The list includes 30 countries (see the table Inflation targeting countries). No inflation data is available for the Czech Republic before the inflation targeting regime was adopted. Source: IMF.*

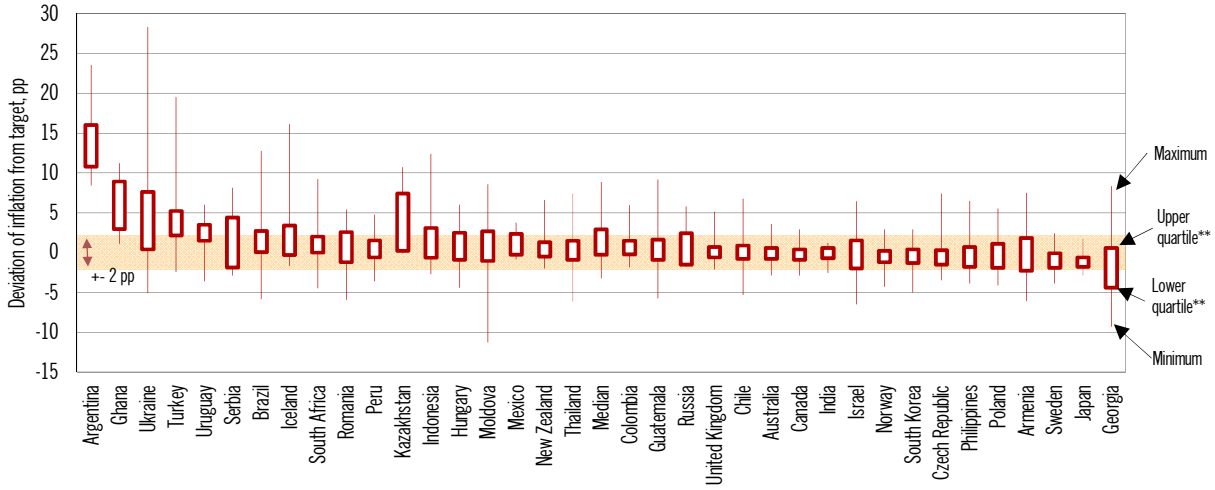
Reaching the inflation target by central banks

When implementing the inflation targeting regime, central banks set the inflation target taking into account the structural and institutional specifics of the economy. Usually, the target level is set in the range of 2% to 2.5% in developed economies, while in emerging markets this figure ranges from 2.5% to 5%. It may take several years to bring high inflation down to the target level, therefore some central banks set intermediate annual targets.

Most central banks that implement inflation targeting successfully reach their goals. For three in four countries, the average deviation of inflation from the target from the date when such a regime was introduced is less than 1 pp and only in four countries this deviation was over 2 pp[8]. Each country faced a situation when inflation temporarily deviated from the target more significantly; however, it is important to note that central banks were successful in bringing it back to the target level. In countries with a long experience in inflation targeting (such as the UK, Canada or Australia), inflation remains on average close to the target, which confirms that their monetary policy has been successful.

The Bank of Russia introduced the inflation targeting regime in early 2015 setting the target at 4% to be reached by the end of 2017. Afterwards, inflation was to be maintained around that level. In 2017 H2 and in 2018, annual inflation remained close to or below 4%. Further on, the main objective of the Bank of Russia will be to keep inflation close to the target level of 4%.

Central banks reach their inflation targets after the official transition to the inflation targeting regime*



** The data are provided for 36 countries. No monthly inflation or historic central banks' targets data are available for Albania, Dominican Republic, Paraguay and Uganda.*
*** Lower quartile is the value with the 25% of data being less than or equal to that value. Upper quartile is the value with the 75% of data being less than or equal to that value.*
Sources: IMF, websites of the countries' central banks, Bank of Russia calculations.

[8] *Calculations were performed for each country from the date when the inflation targeting regime was introduced.*

Information on inflation targeting countries (as of June 2018)

No.	Country	Regime adoption date	Target format as of 2017[1], %	Average annual inflation following the transition, %	Average annual inflation since 2017[2], %	Target achievement horizon
1	New Zealand	1990	2 ± 1	2.1	1.6	Mid-term
2	Canada	1991	2 ± 1	1.9	1.8	Next 6-8 quarters
3	United Kingdom	1992	2	2.1	2.5	Mid-term. Deviations from the target must be eliminated within a 'reasonable time' without destabilising the economy
4	Israel[3]	1992	1-3	3.8	0.3	No more than two years
5	Australia	1993	2-3	2.5	2.0[4]	Mid-term. Current inflation may differ from the target for a short period of time, but the average inflation must correspond to a range of values
6	Sweden	1995	2	1.5	1.8	Several years
7	Czech Republic	1997	2 ± 1	2.8	2.3	12-18 months. Inflation may deviate from the target as a result of strong external shocks
8	Poland	1998	2.5 ± 1	3.1	2.0	Mid-term
9	South Korea	1998	2	2.6	1.8	Mid-term. The target is set every three years for the next three years. The next revision of the target is scheduled for the end of 2018. If inflation deviates from the target by more than 0.5 pp in either direction for six months in a row, the Bank of Korea must explain the reasons for such deviation, provide the inflation forecast and the strategy for returning to the target level
10	Brazil[3]	1999	4.5 ± 1.5	6.6	3.3	The current target is set for 2017-2018.However, the horizon over which the Central Bank of Brazil should bring inflation back to the target in case of a shock-triggered deviation depends on the nature and duration of such shocks
11	Colombia[3]	1999	2-4	5.3	4.0	Long-term
12	Chile	1999	3 ± 1	3.3	2.1	Mid-term (for a period of two years)
13	Thailand[3]	2000	2.5 ± 1.5	2.1	0.7	Mid-term
14	South Africa	2000	3-6	5.8	4.8	On an ongoing basis
15	Hungary	2001	3 ± 1	4.0	2.3	Mid-term (for 1.5-2 years)
16	Iceland	2001	2.5	4.9	2.0	On an ongoing basis since 2001. In the event of a 1.5 pp deviation from the target in either direction, the central bank must submit a public report to the government, explaining reasons for such a deviation and measures for bringing inflation back to the target.
17	Norway	2001	2.5	2.0	2.0	Mid-term. Time horizon depends on the impact of external shocks and state of the real sector
18	Ghana[3]	2002	8 ± 2	13.5	11.6	Mid-term. If inflation is above the target for a long time, the interest rate policy is aimed at bringing inflation back to the target within a reasonable period without creating excessive instability in the economy
19	Peru	2002	2 ± 1	2.8	2.2	On an ongoing basis
20	Uruguay	2002	3-7	8.9	6.5	24 months
21	Philippines	2002	3 ± 1	3.9	3.2	Mid-term (for a period of two years)
22	Guatemala[3]	2005	4 ± 1	5.2	4.3	Mid-term

No.	Country	Regime adoption date	Target format as of 2017[1], %	Average annual inflation following the transition, %	Average annual inflation since 2017[2], %	Target achievement horizon
23	Indonesia	2005	4 ± 1 for 2017 3.5 ± 1 for 2018 and 2019 3 ± 1 for 2020 and 2021	6.5	3.7	Next three years
24	Romania	2005	2.5 ± 1	4.0	2.4	Mid-term
25	Armenia	2006	4.0 ± 1.5	4.3	1.5	Next three years. Interim target is the projected inflation rate (assessment of deviations from the target)
26	Serbia	2006	3 ± 1.5	6.0	2.7	Each month. It means that the progress towards the target is monitored constantly and not only in the end of the year. A short-term deviation from the target is acceptable if measures required to bring it back to the target are detrimental to macroeconomic processes
27	Turkey[3]	2006	5 ± 2	8.5	11.3	2 years
28	Albania	2009	3	2.2	2.0	Mid-term (1 to 3 years)
29	Georgia[3]	2009	4 ± 1.5 for 2017 3 ± 1.5 for 2018	3.6	6.7[4]	Next 3 years
30	Moldova[3]	2009	5 ± 1.5	5.9	6.5	Next 2 years
31	Paraguay	2011	4 ± 2	4.1	3.8	Mid-term
32	Uganda	2011	5 ± 3	7.6	4.2	1-3 years
33	Dominican Republic	2012	4 ± 1	2.9	3.6	24 months
34	Japan[3]	2013	2	1.0	0.6	Approximately two years
35	Russia	2014	4	8.1	3.2	The Bank of Russia abstains from setting a specific date or time period for delivering on the inflation target, but seeks to keep inflation close to 4% permanently
36	Kazakhstan	2015	6-8 for 2017 5-7 for 2018 4-6 for 2019 4 from 2020	9.7	7.1	Next year. The mid-term target is to bring inflation to a level below 4% by 2020
37	Mexico[3]	2015[5]	3 ± 1	4.1	5.7	Mid-term
38	Ukraine[3]	2015	8 ± 2 for 2017 6 ± 2 for 2018 subsequently 5 ± 1	23.1	14.2	Annual, for the period of disinflation, and mid-term, afterwards
39	Argentina[3]	2016	12-17 for 2017 8-12 for 2018 5 ± 1.5 for 2019	24.8	24.8[4]	Next 3 years
40	India	2016	2-6	4.2	3.6	Target is set every five years for the next five years. The next revision of the target is scheduled for spring 2021

[1] Inflation target is usually set for the headline consumer price index. Countries may go by its value in the current month against the corresponding month of the previous year, the end of the year, or the average value during the year.

[2] Average annual inflation is calculated by the month.

[3] As of 2017, 27 of 40 countries have reached their inflation targets. There are several reasons why central banks failed to deliver on the inflation target in 2017.

- *Ghana, Colombia and Brazil are entering the end of disinflation period and posed to reach their target in 2018.*
- *Thailand, Israel and Japan are on track to end deflation caused by recession.*
- *Guatemala, Georgia, Mexico and Moldova held within their target range over the past years; however, for various reasons they deviated from the target for a short term.*
- *Inconsistent monetary policy and financial instability prevent Argentina, Turkey and Ukraine from reaching the target.*

[4] For Australia, Argentina and Georgia, no monthly inflation data is available; therefore, the annual inflation rate is provided for 2017.

[5] Mexico first started inflation targeting in 2001, but currently the IMF takes 2015 as the starting point.

Sources: IMF Annual Report on Exchange Arrangements and Exchange Restrictions, Bank of Russia calculations.

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Appendix 8

Bank of Russia Board of Directors monetary policy meetings in 2019

In 2019, the Bank of Russia is to hold its Board of Directors' monetary policy meetings on the following dates:

8 February;

22 March;

26 April;

14 June;

26 July;

6 September;

25 October;

13 December.

A Monetary Policy Report will be released and a press conference of the Bank of Russia Governor will be held in the follow-up to the Board of Directors' meetings on 22 March, 14 June, 6 September and 13 December.

Press releases on the Board of Directors' monetary policy decisions are to be published at 13:30 Moscow time.

Appendix 9

Statistical tables

Table 1

GDP, inflation and interest rates in BRICS, the USA, and the euro area
(as of 24.10.2018)

Countries	Key (target) interest rate of the central bank, % p.a.	Interest rate on bank loans to non-financial sector for up to 1 year/1 year, % p.a.	Inflation, per cent change on the corresponding month of the previous year[1]	GDP growth rate, % on the corresponding quarter of the previous year[2]	Data source
Russia	7.50	8.72	3.4	1.9	Bank of Russia, Rosstat
Brazil	6.50	38.00	4.5	1.0	Banco Central do Brazil, Instituto Brasileiro e Geografia e Estatistica, IMF
India	6.50	9.45	3.8	8.2	Reserve Bank of India, IMF, Government of India, Central Statistical Office
China	4.35	4.35	2.5	6.5	IMF, Trading Economics, National Bureau of Statistics of China
South Africa	6.50	10.00	4.9	0.4	South African Reserve Bank, Trading Economics, Statistics South Africa
USA	2.00–2.25	5.25	2.3	2.9	Federal Reserve, Bureau of Economic Analysis, Bureau of Labor Statistics
Euro area	0.00	2.42[3]	2.1	2.3	ECB, Eurostat

[1] September 2018.
[2] 2018 Q2, China – 2018 Q3.
[3] On loans from 3 months to 1 year in the amount of up to 0.25 million euros.

Sources: National central banks and statistical offices, ECB, Eurostat, IMF, Trading Economics.

Table 2

Consumer prices by group of goods and services

(per cent change month-on-month)

	Inflation	Core inflation	Food products	Food products[1]	Fruit and vegetables	Non-food goods	Non-food goods, excluding petrol[2]	Services
2015								
January	15.0	14.7	20.7	18.4	40.7	11.2	11.4	12.3
February	16.7	16.8	23.3	20.8	43.5	13.0	13.5	12.8
March	16.9	17.5	23.0	21.1	38.0	13.9	14.6	12.6
April	16.4	17.5	21.9	20.8	30.0	14.2	15.0	11.8
May	15.8	17.1	20.2	19.5	25.7	14.3	15.1	11.6
June	15.3	16.7	18.8	18.4	22.8	14.2	15.0	11.7
July	15.6	16.5	18.6	17.5	27.9	14.3	15.0	13.4
August	15.8	16.6	18.1	17.0	29.1	14.6	15.3	14.1
September	15.7	16.6	17.4	16.4	27.7	15.2	16.0	13.8
October	15.6	16.4	17.3	16.2	27.9	15.6	16.6	13.1
November	15.0	15.9	16.3	15.5	24.3	15.7	16.7	11.9
December	12.9	13.7	14.0	13.6	17.4	13.7	14.5	10.2
2016								
January	9.8	10.7	9.2	10.2	2.0	10.9	11.4	9.0
February	8.1	8.9	6.4	7.8	-2.7	9.5	9.9	8.5
March	7.3	8.0	5.2	6.7	-5.1	8.8	9.1	8.2
April	7.3	7.6	5.3	6.3	-1.6	8.5	8.7	8.4
May	7.3	7.5	5.6	6.4	0.0	8.4	8.5	8.4
June	7.5	7.5	6.2	6.5	4.1	8.5	8.7	7.9
July	7.2	7.4	6.5	6.7	4.2	8.4	8.7	6.5
August	6.9	7.0	6.5	6.7	5.3	8.1	8.4	5.5
September	6.4	6.7	5.9	6.4	1.9	7.5	7.9	5.6
October	6.1	6.4	5.7	6.1	1.5	7.0	7.4	5.4
November	5.8	6.2	5.2	6.0	-1.5	6.7	7.0	5.3
December	5.4	6.0	4.6	6.0	-6.8	6.5	6.8	4.9
2017								
January	5.0	5.5	4.2	5.7	-7.6	6.3	6.4	4.4
February	4.6	5.0	3.7	5.4	-9.0	5.7	5.7	4.3
March	4.3	4.5	3.5	4.9	-7.6	5.1	5.0	4.2
April	4.1	4.1	3.6	4.5	-3.1	4.7	4.6	4.1
May	4.1	3.8	3.9	4.0	2.0	4.4	4.2	4.0
June	4.4	3.5	4.8	3.8	11.6	4.0	3.8	4.1
July	3.9	3.3	3.8	3.4	6.9	3.7	3.5	4.1
August	3.3	3.0	2.6	2.9	-0.8	3.4	3.2	4.1
September	3.0	2.8	2.0	2.5	-2.4	3.1	2.8	4.2
October	2.7	2.5	1.6	2.0	-2.2	2.8	2.5	4.2
November	2.5	2.3	1.1	1.4	-2.5	2.7	2.4	4.3
December	2.5	2.1	1.1	1.0	1.2	2.8	2.3	4.4
2018								
January	2.2	1.9	0.7	0.8	-0.1	2.6	2.1	3.9
February	2.2	1.9	0.9	0.7	2.4	2.5	2.1	3.7
March	2.4	1.8	1.3	0.6	6.4	2.4	2.1	3.9
April	2.4	1.9	1.1	0.7	4.2	2.7	2.3	4.0
May	2.4	2.0	0.4	0.8	-2.8	3.4	2.5	4.0
June	2.3	2.3	-0.2	1.1	-9.8	3.7	2.7	4.1
July	2.5	2.4	0.5	1.4	-6.7	3.8	2.8	3.8
August	3.1	2.6	1.9	1.7	3.3	3.8	2.9	3.7
September	3.4	2.8	2.5	2.5	3.4	4.0	3.1	3.8

[1] Excluding fruit and vegetables.
[2] Bank of Russia estimate.

Sources: Rosstat, Bank of Russia calculations.

Table 3

Macroeconomic indicators

(year-on-year growth, %, unless indicated otherwise)

	GDP[1]	KII[2]	Industrial output	Agriculture	Construc-tion	Freight turnover	Retail trade turnover	Wholesale trade turnover	Household real disposable money income	Real wage	Unemploy-ment rate (% on workforce)
2015											
January		-1.7	0.0	2.2	-4.6	-3.7	-4.4	-3.4	-1.5	-8.4	5.5
February		-3.3	-1.8	2.6	-1.7	-1.2	-7.5	-6.3	-2.3	-7.4	5.8
March	-1.5	-1.4	1.2	3.6	-3.0	0.9	-9.0	-6.9	-2.1	-10.6	5.9
April		-3.5	-1.8	2.7	-3.0	-1.0	-9.9	-8.5	-2.3	-9.6	5.8
May		-4.1	-2.4	2.1	-5.7	-3.6	-9.5	-10.3	-7.4	-7.4	5.6
June	-3.3	-2.8	-0.9	1.0	-5.9	-2.9	-9.7	-6.1	-3.6	-8.6	5.4
July		-3.0	-1.5	-2.6	-6.0	2.3	-9.6	-6.0	-3.2	-9.2	5.3
August		-1.5	0.2	1.9	-7.8	0.9	-9.5	-3.9	-5.0	-9.0	5.3
September	-2.6	-1.5	-0.3	3.1	-6.1	1.4	-10.7	-3.3	-4.7	-10.4	5.2
October		-2.3	-1.6	7.0	-2.3	5.0	-11.3	-4.5	-6.5	-10.5	5.5
November		-1.6	1.0	1.7	-1.5	3.9	-12.2	-6.7	-6.1	-10.4	5.8
December	-2.7	-2.9	-1.9	3.0	-0.3	4.1	-14.1	-1.0	5.0	-8.4	5.8
2016											
January		-1.5	-0.5	3.3	-5.1	1.0	-6.2	-3.0	-6.0	-3.6	5.8
February		1.8	2.2	3.8	-3.7	3.9	-3.7	7.8	-3.7	0.6	5.8
March	-0.5	0.3	-0.3	3.6	-0.4	-0.2	-5.1	8.5	-0.6	1.5	6.0
April		0.0	0.2	3.5	-3.2	0.7	-4.3	7.1	-6.6	-1.1	5.9
May		0.1	0.8	3.4	-4.1	0.7	-5.3	7.7	-5.1	1.0	5.6
June	-0.4	0.5	2.4	2.9	-5.2	1.8	-5.0	4.5	-4.4	1.1	5.4
July		1.7	2.9	7.4	-0.7	1.5	-4.4	1.2	-8.1	-1.3	5.3
August		1.6	1.6	5.7	-0.4	3.0	-4.3	6.0	-10.0	2.7	5.2
September	-0.2	1.1	2.1	4.7	-5.1	4.1	-3.2	1.4	-2.5	1.9	5.2
October		2.8	4.6	4.3	-1.4	-0.7	-4.3	-1.4	-5.9	0.4	5.4
November		4.7	5.6	6.8	0.7	2.6	-4.3	3.9	-6.2	2.1	5.4
December	0.4	1.4	4.1	3.4	-1.1	3.1	-5.3	-5.5	-7.3	2.8	5.3
2017											
January		4.3	5.6	0.9	-2.5	8.2	-2.0	4.3	8.9[3]	1.0	5.6
February		-0.7	-0.3	0.5	-5.0	3.9	-2.8	-3.6	-3.8	0.8	5.6
March	0.6	2.5	3.5	1.5	-5.4	6.4	0.0	3.2	-4.0	3.1	5.4
April		2.7	3.2	1.1	-5.4	7.0	0.3	2.5	-7.8	3.8	5.3
May		6.0	6.9	0.6	-1.9	9.6	1.1	7.4	-0.5	2.7	5.2
June	2.5	3.7	3.4	-1.0	-1.0	8.9	1.4	10.1	-0.1	3.8	5.1
July		1.2	0.2	-2.4	-0.6	6.1	1.3	7.6	-4.0	3.0	5.1
August		4.2	4.0	5.5	0.6	7.7	1.7	6.2	-1.0	2.3	4.9
September	2.2	4.2	3.5	8.8	0.1	2.9	3.1	5.3	-0.9	4.3	5.0
October		1.3	0.2	-2.2	-3.1	6.4	3.4	9.7	-1.4	5.4	5.0
November		0.0	-1.5	1.5	-1.1	-0.3	3.1	8.3	-0.1	5.8	5.1
December	0.9	0.1	-1.7	3.5	1.3	0.2	3.3	6.3	-1.2	6.2	5.1
2018											
January		2.3	2.4	2.5	0.2	1.1	2.9	1.6	-6.8[3]	11.0	5.2
February		2.7	3.2	2.5	-0.2	1.9	2.0	1.9	4.2	10.5	5.0
March	1.3	1.9	2.8	2.6	-9.7	4.4	2.2	0.5	4.6	8.7	5.0
April		3.7	3.9	2.5	1.4	4.9	2.9	5.1	5.6	7.6	4.9
May		3.8	3.7	2.3	5.6	3.1	2.6	6.1	0.2	7.6	4.7
June	1.9	1.6	2.2	0.9	-1.3	2.1	3.3	1.4	0.5	7.2	4.7
July		2.8	3.9	0.8	-0.7	4.1	2.7	2.5	2.4	7.5	4.7
August		1.1	2.7	-11.3	-0.8	2.6	2.8	1.6	-0.9	6.8	4.6
September			2.1	-6.0	0.1	1.9	2.2		-1.5	7.2	4.5

[1] Quarterly data.
[2] Key industry index.
[3] Including a one-time payment in 2017.

Source: Rosstat.

Table 4

Monetary indicators[1]

(per cent change on corresponding date of previous year)

	Money supply (M2)	Broad money supply[2]	Deposits of the non-bank sector[3] in national currency		Deposits of the non-bank sector[3] in foreign currency[4]		Net foreign assets of the banking system[4]	Lending to the economy[2]	Household loans[2]	Lending to organisations[2]
			Households	Organisations	Households	Organisations				
2016										
1.01.2016	11.3	11.8	19.4	8.0	8.3	13.7	1.3	3.2	-6.4	6.5
1.02.2016	9.5	9.7	18.2	1.5	7.9	10.8	5.9	3.8	-5.7	6.9
1.03.2016	9.9	10.0	16.9	2.8	5.7	11.4	8.8	2.7	-4.8	5.2
1.04.2016	11.8	11.4	16.4	7.5	5.4	12.4	9.6	4.5	-3.7	7.2
1.05.2016	10.8	10.1	15.7	4.6	2.0	10.8	8.3	4.2	-2.8	6.6
1.06.2016	12.0	11.2	16.3	7.2	-0.2	14.7	7.7	4.6	-2.2	6.8
1.07.2016	12.3	10.2	16.2	8.0	0.0	6.9	5.3	4.8	-1.6	6.8
1.08.2016	12.3	9.2	15.4	9.3	0.4	0.9	4.9	5.2	-1.2	7.2
1.09.2016	11.8	7.9	16.1	7.2	0.5	-2.4	5.3	4.8	-0.8	6.6
1.10.2016	12.8	7.1	15.7	10.6	1.2	-10.6	3.1	4.6	-0.2	6.1
1.11.2016	12.1	6.1	15.6	9.7	0.8	-13.6	1.9	4.7	0.3	6.1
1.12.2016	11.3	5.5	15.8	7.1	0.4	-12.4	1.6	4.1	0.9	5.1
2017										
1.01.2017	9.2	4.0	14.2	4.0	0.4	-13.6	0.1	3.4	1.4	3.9
1.02.2017	11.9	7.1	16.3	8.9	3.2	-6.3	2.4	4.3	1.6	5.0
1.03.2017	12.1	7.2	16.2	10.2	5.0	-8.0	4.8	4.7	1.9	5.5
1.04.2017	11.1	6.0	15.7	7.6	3.4	-11.4	3.7	5.0	3.1	5.5
1.05.2017	10.1	5.5	14.0	6.9	3.8	-11.3	1.6	5.1	4.1	5.4
1.06.2017	10.0	6.1	13.5	7.0	3.6	-7.1	5.7	5.5	4.8	5.7
1.07.2017	10.5	6.5	14.1	7.1	2.6	-7.1	6.1	5.7	5.9	5.6
1.08.2017	9.0	6.5	13.3	3.6	1.0	1.7	8.3	6.0	6.4	5.9
1.09.2017	9.0	6.5	12.7	3.9	0.2	1.6	6.6	6.7	7.7	6.4
1.10.2017	9.5	6.8	13.0	4.5	-1.6	2.2	7.0	7.5	8.6	7.2
1.11.2017	10.0	7.5	12.7	6.1	-2.7	4.7	6.8	8.6	9.7	8.3
1.12.2017	10.1	8.2	12.5	6.3	-1.9	8.5	9.2	9.3	11.0	8.8
2018										
1.01.2018	10.5	8.6	12.6	7.9	-2.2	9.0	13.8	8.9	12.1	8.0
1.02.2018	9.4	7.4	11.3	7.4	-1.3	5.0	13.4	8.3	13.9	6.7
1.03.2018	9.3	6.6	11.8	5.5	-2.0	-0.1	11.9	8.7	14.7	7.0
1.04.2018	9.9	7.6	12.6	5.3	-2.7	4.1	12.7	9.1	15.8	7.2
1.05.2018	11.5	8.5	14.0	7.5	-7.6	5.3	11.7	9.0	16.3	7.0
1.06.2018	10.3	7.7	13.2	4.7	-8.1	6.3	8.1	9.0	17.6	6.5
1.07.2018	11.4	8.3	12.8	8.4	-8.0	5.5	7.9	8.9	18.4	6.2
1.08.2018	11.8	8.1	13.3	8.8	-6.4	1.2	7.0	9.4	19.3	6.5
1.09.2018	12.6	8.2	13.0	11.3	-7.4	-1.6	7.1	8.9	19.9	5.7

[1] Calculated using data from the Banking System Review (see Table 1.16 of the Bank of Russia Statistical Bulletin and the Statistics section of the Bank of Russia website).

[2] Adjusted for foreign currency revaluation.

[3] Resident individuals, resident non-financial and financial institutions (except banking institutions).

[4] Calculations based on data in billions of US dollars.

Source: Bank of Russia.

Table 5

Monetary indicators[1]

(billions of rubles, unless indicated otherwise)

	Money supply (M2)	Broad money supply	Deposits of the non-bank sector[2] in national currency		Deposits of the non-bank sector[2] in foreign currency, USD billion		Net foreign assets of the banking system, USD billion	Lending to the economy	Household loans	Lending to organisations
			Households	Organisations	Households	Organisations				
2016										
1.01.2016	35,180	51,370	16,045	11,896	90.6	123.6	450.8	52,982	11,647	41,335
1.02.2016	33,966	50,832	15,641	11,270	88.4	128.4	464.6	53,297	11,594	41,702
1.03.2016	34,310	51,140	15,885	11,275	87.0	129.2	460.0	53,159	11,570	41,589
1.04.2016	34,689	50,051	16,013	11,534	87.8	130.2	467.7	52,216	11,518	40,697
1.05.2016	35,105	49,674	16,377	11,427	88.9	127.9	481.7	52,059	11,512	40,548
1.06.2016	35,643	50,343	16,562	11,785	88.3	125.1	472.9	52,374	11,524	40,850
1.07.2016	35,857	49,963	16,827	11,657	89.2	121.0	475.6	52,111	11,519	40,592
1.08.2016	36,032	50,192	16,942	11,628	89.7	112.7	467.2	52,743	11,592	41,151
1.09.2016	36,170	49,877	17,077	11,654	90.2	112.1	474.3	52,612	11,639	40,973
1.10.2016	36,149	49,544	17,100	11,636	91.3	111.8	473.7	52,361	11,670	40,690
1.11.2016	36,051	49,167	17,202	11,510	91.5	108.4	469.8	52,560	11,690	40,870
1.12.2016	36,433	49,854	17,427	11,688	90.5	108.4	463.4	52,935	11,738	41,197
2017										
1.01.2017	38,418	50,903	18,328	12,375	91.0	106.8	451.3	52,689	11,756	40,933
1.02.2017	38,017	51,223	18,195	12,278	91.2	120.2	475.8	52,996	11,716	41,280
1.03.2017	38,475	51,142	18,461	12,427	91.4	118.9	481.9	52,778	11,727	41,052
1.04.2017	38,555	50,672	18,529	12,415	90.8	115.4	485.2	52,917	11,836	41,081
1.05.2017	38,664	50,863	18,673	12,215	92.3	113.5	489.7	53,480	11,961	41,520
1.06.2017	39,223	51,420	18,800	12,610	91.4	116.1	500.0	53,616	12,037	41,579
1.07.2017	39,623	52,129	19,192	12,484	91.5	112.4	504.4	54,197	12,177	42,020
1.08.2017	39,276	51,937	19,193	12,048	90.6	114.6	506.2	54,661	12,312	42,349
1.09.2017	39,419	51,860	19,244	12,109	90.4	113.9	505.4	55,148	12,516	42,633
1.10.2017	39,571	51,853	19,317	12,165	89.8	114.2	506.7	55,479	12,658	42,821
1.11.2017	39,667	51,836	19,384	12,212	89.1	113.5	501.6	56,296	12,802	43,494
1.12.2017	40,114	52,586	19,612	12,428	88.7	117.6	505.9	56,820	13,011	43,810
2018										
1.01.2018	42,442	54,667	20,643	13,353	89.0	116.5	513.6	56,946	13,169	43,778
1.02.2018	41,597	54,171	20,252	13,182	90.0	126.3	539.5	56,813	13,330	43,484
1.03.2018	42,045	54,047	20,636	13,109	89.5	118.8	539.4	57,009	13,440	43,569
1.04.2018	42,377	54,727	20,857	13,077	88.3	120.1	546.8	57,874	13,708	44,165
1.05.2018	43,122	56,221	21,279	13,131	85.3	119.5	547.1	59,089	13,921	45,169
1.06.2018	43,257	56,646	21,288	13,198	84.0	123.5	540.7	59,372	14,173	45,199
1.07.2018	44,125	57,207	21,651	13,528	84.1	118.5	544.5	59,588	14,432	45,156
1.08.2018	43,911	56,824	21,751	13,106	84.8	115.9	541.5	60,262	14,693	45,569
1.09.2018	44,369	57,978	21,745	13,474	83.7	112.2	541.1	61,416	15,029	46,387

[1] Calculated using data from the Banking System Review (see Table 1.16 of the Bank of Russia Statistical Bulletin and the Statistics section of the Bank of Russia website).

[2] Resident individuals, resident non-financial and financial institutions (except banking institutions).

Source: Bank of Russia.

Table 6

Required reserve ratios

(%)

Liability type	Effective period		
	1.01.17–30.11.17	1.12.17–31.07.18	С 1.08.18
For banks and non-bank credit institutions			
To households in rubles	5.00	x	x
Other liabilities in rubles			
To non-resident legal entities in rubles			
To households in foreign currency	6.00	x	x
To non-resident legal entities in foreign currency	7.00	x	x
Other liabilities in foreign currency			
For banks with a universal licence and non-bank credit institutions			
To households in rubles	x	5.00	5.00
Other liabilities in rubles			
To non-resident legal entities in rubles			
To households in foreign currency	x	6.00	7.00
To non-resident legal entities in foreign currency	x	7.00	8.00
Other liabilities in foreign currency			
For banks with a basic licence			
To households in rubles	x	1.00	1.00
Other liabilities in rubles			
To non-resident legal entities in rubles		5.00	5.00
To households in foreign currency	x	6.00	7.00
To non-resident legal entities in foreign currency	x	7.00	8.00
Other liabilities in foreign currency			

Source: Bank of Russia.

Table 7

Interest rates on Bank of Russia operations to provide and absorb ruble liquidity

(% p.a.)

Purpose	Type of instrument	Instrument	Term	Frequency	As of 1.01.2018	From 12.02.2018	From 26.03.2018	From 4.06.2018[1]	From 17.09.2018
Liquidity provision	Standing facilities	Overnight loans; lombard loans; loans secured by non-marketable assets; FX swaps (ruble leg)[2]; repos	1 day	Daily	8.75	8.50	8.25	Key rate + 1.00	Key rate + 1.00
		Loans secured by non-marketable assets[3]	2 to 549 days		9.50	9.25	9.00	Key rate + 1.75	Key rate + 1.75
	Open market operations (minimum interest rates)	Auctions to provide loans secured by non-marketable assets[3]	3 months	Monthly[4]	8.00	7.75	7.50	Key rate + 0.25	Key rate + 0.25
		Repo auctions	1 week	Weekly[5]	7.75 (key rate)	7.50 (key rate)	7.25 (key rate)	7.25 (key rate)	7.50 (key rate)
			1 to 6 days	Occasionally[6]					
		FX swap auctions (ruble leg)[2]	1 to 2 days						
Liquidity absorption	Open market operations (maximum interest rates)	Deposit auctions	1 to 6 days						
			1 week	weekly[5]					
		Auctions for the placement and additional placement of OBRs[3]	3 months	Occasionally					
	Standing facilities	Deposit operations	1 day[7]	Daily	6.75	6.50	6.25	Key rate – 1.00	Key rate – 1.00

[1] From 4 June 2018, interest rates on Bank of Russia operations with credit institutions are set as key rate spreads.

[2] From 23 December 2016, interest rates on the foreign currency leg equal LIBOR on overnight loans in US dollars or euros (depending on the currency of the transaction).

[3] Operations conducted at a floating interest rate linked to the Bank of Russia key rate.

[4] Operations have been discontinued since April 2016.

[5] Either a repo or a deposit auction is held depending on the situation with liquidity. See press release http://www.cbr.ru/press/PR.aspx?file=19012015_154523if2015-01-19T15_41_11.htm.

[6] Fine-tuning operations.

[7] Before 16 May 2018, also call operations. From 17 May 2018, the Bank of Russia only conducts overnight deposit operations with credit institutions.

Memo item: from 1 January 2016, the value of the Bank of Russia refinancing rate equals its key rate as of the respective date.

Source: Bank of Russia.

Table 8

Bank of Russia operations to provide and absorb ruble liquidity

Purpose	Type of instrument	Instrument	Term	Frequency	Bank of Russia claims under liquidity provision instruments and obligations under liquidity absorption instruments, billions of rubles					
					As of 1.01.17	As of 1.01.18	As of 1.04.18	As of 1.07.18	As of 1.09.18	As of 1.10.18
Liquidity provision	Standing facilities	Overnight loans	1 day	Daily	0.0	0.0	0.8	14.6	14.4	0.4
		Lombard loans			0.6	0.0	0.0	0.0	0.0	0.0
		FX swaps			37.8	0.0	0.0	0.0	0.0	0.0
		Repo operations			593.9	3.6	6.5	2.4	3.3	10.0
		Loans secured by non-marketable assets	1 to 549 days		410.7	5.5	30.1	5.4	9.5	377.8
	Open market operations	Auctions to provide loans secured by non-marketable assets	3 months	Monthly[1]	215.6	0.0	0.0	0.0	0.0	0.0
			18 months	Occasionally[2]						
		Repo auctions	1 week	Monthly[3]	0.0	0.0	0.0	0.0	0.0	0.0
			1 to 6 days	Occasionally[4]						
		FX swap auctions	1 to 2 days		0.0	0.0	0.0	0.0	0.0	0.0
Liquidity absorption	Open market operations	Deposit auctions	1 to 6 days		396.9	2,124.9	2,520.6	2,389.1	2,066.2	1,761.8
			1 week	Monthly[3]						
		Auctions for the placement and additional placement of OBRs[5]	3 months	Occasionally	-	357.0	1,139.1	1,123.0	1,416.2	1,502.1
	Standing facilities	Deposit operations	1 day[6]	Daily	388.3	246.8	264.6	329.1	261.8	499.0

[1] Operations discontinued since April 2016.
[2] Operations have been suspended since 1 July 2016.
[3] Either a repo or a deposit auction is held depending on the situation with liquidity.
[4] Fine-tuning operations.
[5] If the reporting date falls on a weekend or holiday, the indicated amount of outstanding Bank of Russia bonds (OBRs) includes the accrued coupon interest as of the first working day following the reporting date.
[6] Also including sight deposits until 16 May 2018. From 17 May 2018, the Bank of Russia only conducts overnight deposit operations with credit institutions.

Source: Bank of Russia.

Table 9

Bank of Russia specialised refinancing facilities[1]

Purpose of indirect bank lending	Maturity	Collateral	Bank of Russia claims on credit institutions, billion rubles						Limit as of 1.10.2018, billion rubles
			As of 1.01.17	As of 1.01.18	As of 1.04.18	As of 1.07.18	As of 1.09.18	As of 1.10.18	
Non-commodity exports	Up to 3 years	Claims under loan agreements secured by contracts of insurance of JSC EXIAR	43.4	47.4	46.4	48.8	49.5	50.0	75.00
Large-scale investment projects[2]	Up to 3 years	Credit claims under bank loans issued for the implementation of investment projects, whose performance is secured by the Russian Federation state guarantees	112.6	108.3	104.7	105.7	104.2	105.1	150.00
		Bonds placed to finance investment projects and included in the Bank of Russia Lombard List	0.6	0.0	0.0	0.0	0.0	0.0	
Small- and medium-sized enterprises	Up to 3 years	Claims under loan agreements of JSC SME Bank[3]	43.1	18.3	14.7	12.2	9.8	9.1	175.00
		Guarantees of JSC Russian Small and Medium Business Corporation issued under the Programme for Encouraging Lending to Small- and Medium-sized Enterprises	48.2	81.5	81.4	78.7	76.4	78.1	
Leasing	Up to 3 years	Claims on loans to leasing companies	0.0	0.2	0.2	0.2	0.2	0.2	10.00
Military mortgage	Up to 3 years	Mortgages issued under the Military Mortgage Programme	29.3	29.3	21.9	21.7	9.7	9.7	30.0

[1] Specialised refinancing facilities are Bank of Russia instruments aimed at encouraging bank lending to certain segments of the economy whose development is hampered by structural factors. Under these facilities, the Bank of Russia provides funds to credit institutions at lower rates and for longer maturities compared with standard Bank of Russia operations. Specialised refinancing facilities are temporary Bank of Russia instruments, which will be valid until conditions for their replacement with market instruments are created in the financial market. The provision of funds under the specialised facilities is restricted, because their application should not distort the stance of the monetary policy and prevent the achievement of its key objective of ensuring price stability.

[2] Projects are selected in compliance with the rules established by Regulation of the Government of the Russian Federation No. 1016, dated 14 December 2010, 'On Approving the Rules to Select Investment Projects and Principals for the Provision of the Russian Federation State Guarantees on Loans or Bonded Loans Attracted to Carry out Investment Projects' or Regulation of the Government of the Russian Federation No. 1044, dated 11 October 2014, 'On Approving the Programme to Support Investment Projects Implemented in the Russian Federation Based on Project Financing'.

[3] Claims under loans issued to banks and microfinance organisations partnering with JSC SME Bank under the Programme for Financial Support of Small and Medium-sized Enterprises Development for lending to SMEs and claims under loans issued to leasing companies partnering with JSC SME Bank for leasing property to SMEs.

Source: Bank of Russia.

Table 10

Interest rates for specialised refinancing facilities[1]

(% p.a.)

Purpose of indirect bank lending	Maturity	Collateral	As of 1.01.18	From 12.02.18	From 26.03.18	From 4.06.18[2]
Large-scale investment projects[3]	Up to 3 years	Credit claims under bank loans issued for the implementation of investment projects, whose performance is secured by the Russian Federation state guarantees	6.75	6.50	6.25	The least of two values: 9.00% p.a. or the Bank of Russia key rate less 1.00 pp.
		Bonds placed to finance investment projects and included in the Bank of Russia Lombard List				
Leasing	Up to 3 years	Claims on loans to leasing companies	6.75	6.50	6.50	The least of two values: 6.50% p.a. or the Bank of Russia key rate
Non-commodity exports	Up to 3 years	Claims under loan agreements secured by contracts of insurance of JSC EXIAR	6.50	6.50	6.50	
Small- and medium-sized enterprises	Up to 3 years	Claims under loan agreements of JSC SME Bank[4]	6.50	6.50	6.50	
		Guarantees of JSC Russian Small and Medium Business Corporation issued under the Programme for Encouraging Lending to Small- and Medium-sized Enterprises				
Military mortgage	Up to 3 years	Mortgages issued under the Military Mortgage Programme	7.75	7.50	7.25	Bank of Russia key rate

[1] Specialised refinancing facilities are Bank of Russia instruments aimed at encouraging bank lending to certain segments of the economy whose development is hampered by structural factors. Under these facilities, the Bank of Russia provides funds to credit institutions at lower rates and for longer maturities compared with standard Bank of Russia operations. Specialised refinancing facilities are temporary Bank of Russia instruments, which will be valid until conditions for their replacement with market instruments are created in the financial market. The provision of funds under the specialised facilities is restricted, because their application should not distort the stance of the monetary policy and prevent the achievement of its key objective of ensuring price stability.

[2] From 4 June 2018, the interest rates on Bank of Russia operations with credit institutions are set as spreads to the key rate.

[3] Projects are selected in compliance with the rules established by Regulation of the Government of the Russian Federation No. 1016, dated 14 December 2010, 'On Approving the Rules to Select Investment Projects and Principals for the Provision of the Russian Federation State Guarantees on Loans or Bonded Loans Attracted to Carry out Investment Projects' or Regulation of the Government of the Russian Federation No. 1044, dated 11 October 2014, 'On Approving the Programme to Support Investment Projects Implemented in the Russian Federation Based on Project Financing'.

[4] Claims under loans issued to banks and microfinance organisations partnering with JSC SME Bank under the Programme for Financial Support of Small and Medium-sized Enterprises Development for lending to SMEs and claims under loans issued to leasing companies partnering with JSC SME Bank for leasing property to SMEs.

Source: Bank of Russia.

Table 11

Bank of Russia operations to provide foreign currency

Instrument	Term	Frequency[1]	Minimum auction rate as spread to LIBOR2, pp; fixed rate for FX swaps3, % p.a.	Bank of Russia claims, millions of US dollars[4]					
			From 23.12.16	As of 1.01.17	As of 1.01.18	As of 1.04.18	As of 1.07.18	As of 1.09.18	As of 1.10.18
Repo auctions	1 week	Weekly	2,00	2.635.2	0.0	0.0	0.0	0.0	0.0
	28 days			8.719.9	0.0	0.0	0.0	0.0	0.0
	12 months		3,00	26.2	0.0	0.0	0.0	0.0	0.0
Loan auctions	28 days	Monthly	2,25	0.0	0.0	0.0	0.0	0.0	0.0
	365 days		3,25	0.0	0.0	0.0	0.0	0.0	0.0
USD/RUB sell/buy FX swaps	1 day	Daily	1,50	1.000.0	4.490.7	0.0	229.0	0.0	0.0

[1] No 12-month loan or repo auctions were held in 2017 and January-September 2018; regular one-week and 28-day repo auctions have been discontinued since 11 September 2017.
[2] In respective currencies and for respective terms.
[3] The rate for ruble leg is equal to the Bank of Russia key rate less 1 pp.
[4] For repos – claims on credit institutions under the second leg of repos.

Source: Bank of Russia.

GLOSSARY

Autonomous factors of banking sector liquidity

Banking sector liquidity factors unconnected with Bank of Russia operations to manage liquidity and steer overnight money market rate. These include changes in the amount of cash in circulation, changes in balances of general government accounts with the Bank of Russia and other operations, required reserve regulation, and Bank of Russia operations in the domestic FX market.

Balance of payments of the Russian Federation

A statistical system reflecting all economic transactions between residents and non-residents of the Russian Federation, which occurred during the reporting period.

Banking sector liquidity

Credit institutions' funds held in correspondent accounts with the Bank of Russia in the currency of the Russian Federation, mainly to carry out payments through the Bank of Russia payment system and to comply with obligatory reserve requirements.

Bank lending conditions index

A generalised indicator of changes to bank lending conditions, as calculated by the Bank of Russia based on the results of a quarterly survey among leading Russian banks operating in the lending market, as follows: (the share of banks reporting a significant tightening of lending conditions, %) + 0.5 x (the share of banks reporting a moderate tightening of lending conditions, %) – 0.5 x (the share of banks reporting a moderate easing of lending conditions, %) – (the share of banks reporting a significant easing of lending conditions, %). Measured in percentage points (pp).

Bank of Russia interest rate corridor (interest rate corridor)

The basis of the Bank of Russia interest rate system. The centre of the corridor is set by the Bank of Russia key rate; the upper and lower bounds are rates on overnight standing facilities (deposit facilities and refinancing facilities) symmetric with respect to the key rate.

Bank of Russia key rate

The main monetary policy rate set by the Bank of Russia Board of Directors. Key rate changes influence lending and economic activities and allow for finally achieving the primary objective of the monetary policy. Operationally, it corresponds to the minimum interest rate at Bank of Russia one-week repo auctions and the maximum interest rate at Bank of Russia one-week deposit auctions.

Banking sector liquidity

Credit institutions' funds held in correspondent accounts with the Bank of Russia in the currency of the Russian Federation, mainly to carry out payments through the Bank of Russia payment system and to comply with obligatory reserve requirements.

Broad money supply

Total amount of cash in circulation outside the banking system, funds of Russian Federation residents (non-financial and financial organisations (excluding banks) and households) in settlement, current and other on-demand accounts (including bank card accounts), time deposits and other types of deposits in the banking system denominated in the currency of the Russian Federation or a foreign currency, interest accrued on them and deposit and savings certificates in the currency of the Russian Federation issued by credit institutions.

Cash in circulation outside the banking system (M0 monetary aggregate)

Includes banknotes and coins in circulation and usually used to make settlements and payments. Money supply comprises all cash outside of the Bank of Russia, except for cash held in credit institutions' tills.

CDS spread

The CDS spread is a rate on a credit default swap, a derivative used to hedge against default on acquired debt instruments. A hedge buyer pays the CDS spread to a hedge seller in return of a compensation for losses which may be inflicted in the case of the issuer's default on the debt instrument.

Claims on Bank of Russia refinancing operations

Outstanding amount on loans extended by the Bank of Russia to credit institutions against the collateral of securities, non-marketable assets, guarantees, gold, repo operations, and FX swaps (USD/RUB and EUR/RUB swaps).

Consumer price index (CPI)

The CPI measures changes over time in the overall price level of goods and services purchased by households for private consumption. This index is calculated by the Federal State Statistics Service as a ratio of the value of a fixed set of goods and services in current prices to the value of the same set of goods and services in the previous (reference) period's prices. The CPI is calculated on the basis of data on the actual structure of consumer spending, being therefore one of the key indicators of living costs.

Core inflation

Inflation measured as a core consumer price index (CCPI). The difference between the CCPI and the consumer price index (CPI) lies in the CCPI calculation method, which excludes a change in prices for individual goods and services subject to the influence of administrative and seasonal factors (certain types of fruit and vegetables, passenger transportation services, telecommunication services, housing and public utility services, motor fuel, etc.).

Credit default swap (CDS)

An insurance contract protecting from default on reference obligations (sovereign or corporate securities with fixed yields). It is a credit derivative allowing the buyer of the contract to become insured against a certain credit event of the reference obligation issuer by paying an annuity premium (CDS spread) to the insurance seller.

Current liquidity deficit/surplus

An excess of banking sector demand for liquidity over liquidity supply on the current day. The reverse situation, an excess of liquidity supply over demand on a given day, is the current liquidity surplus.

Financial stability

A financial system characterised by the absence of systemic risks which, once they have evolved, may impact negatively on the process of transforming savings into investment and the real economy. In the event of financial stability, the economy demonstrates better resilience to external shocks.

Fiscal rule

A fiscal rule is a principle of budget discipline enshrined in law and designed to: 1) smooth the effect of external conditions on Russia's economic indicators through the accumulation/use of sovereign funds under the Russian Ministry of Finance's operations to purchase/sell foreign currency in the amount equal to a certain proportion of cyclical revenues; 2) stabilise public finance by restricting the budget expenditure to revenue ratio.

Floating exchange rate regime

According to the IMF classification, under a floating exchange rate regime the central bank does not set targets, including operational ones, for the level of, or changes to, the exchange rate, allowing it to be shaped under the impact of market factors. However, the central bank reserves the right to purchase foreign currency to replenish international reserves or to sell it should threats to financial stability arise.

Floating interest rate on Bank of Russia operations

An interest rate tied to the Bank of Russia key rate. If the Bank of Russia Board of Directors decides to change the key rate, the interest rate applied to the loans previously provided at a floating interest rate will be adjusted by the change in the key rate with effect from the corresponding date.

Funds in general government's accounts with the Bank of Russia

Funds in accounts with the Bank of Russia representing funds of the federal budget, the budgets of constituent territories of the Russian Federation, local budgets, government extra-budgetary funds and extra-budgetary funds of constituent territories of the Russian Federation and local authorities.

Gross credit of the Bank of Russia

Includes loans extended by the Bank of Russia to credit institutions (including those with revoked licences), overdue loans and overdue interest on loans, funds provided by the Bank of Russia to credit institutions through repos and FX swaps (USD/RUB and EUR/RUB swaps).

Import substitution

Substitution of imported goods by domestically-produced ones, which leads to an increased proportion of domestic goods in the domestic market.

Inflation

A sustained increase in the general price level of goods and services in the economy. Price movements in the economy are communicated by various price indicators, e.g. producer price indices, gross domestic product deflator and consumer price index. Inflation is generally associated with the consumer price index (CPI), used to measure prices for a set of food products, non-food goods and services (i.e. the cost of the consumer basket) consumed by an average household over time. The reason why the CPI has been selected as a key inflation indicator is explained by its ability to serve as a key indicator of change in living costs. Additionally, the CPI possesses a number of properties facilitating its wide-spread application (simple and clear construction methods, calculation on a monthly basis and publication in a timely manner).

Inflation expectations

Implied, forecast and expected inflation levels which form the basis for economic decisions and future plans of households, firms and financial market participants (including about consumption, savings, borrowings, investment and loan/deposit rates).

Inflation targeting strategy

The strategy for implementing monetary policy is characterised by the following principles: the main objective of monetary policy is price stability; the inflation target is specified and declared; monetary policy influences the economy largely through interest rates under a floating exchange rate regime; monetary policy decisions are taken based on the analysis of a wide range of macroeconomic indicators and their forecast. The Bank of Russia seeks to set clear benchmarks for households and businesses, including through increased information transparency.

International reserves of the Russian Federation

Highly liquid foreign assets held by the Bank of Russia and the Government of the Russian Federation.

Mandatory reserve requirements

An instrument of the Bank of Russia's monetary policy. These are Bank of Russia requirements that credit institutions maintain a certain amount of funds in accounts with the Bank of Russia. The standard value of required reserves is determined using required reserve ratios set as percentage of reservable liabilities of credit institutions. Required reserves should be deposited in required reserve accounts and may be held in correspondent accounts of credit institutions with the Bank of Russia under the required reserves averaging mechanism. The right for required reserves averaging allows credit institutions to maintain in correspondent accounts an average share of required reserves not exceeding the required reserve averaging ratio during the averaging period. The calendar for the required reserve averaging periods is established by the Bank of Russia Board of Directors.

Monetary base

Total amount of certain cash components and credit institutions' funds in Bank of Russia accounts and bonds denominated in the currency of the Russian Federation. The monetary base in a narrow definition includes cash in circulation (outside of the Bank of Russia) and credit institutions' funds in accounts recording required reserves on funds attracted by credit institutions in the currency

of the Russian Federation. The broad monetary base includes cash in circulation (outside of the Bank of Russia) and the total funds of credit institutions in Bank of Russia accounts and bonds.

Monetary policy transmission mechanism

The process of transferring the impulse of monetary policy decisions to the economy as a whole and to price dynamics, in particular. The process of transmitting the central bank's signal about a/no change in the key rate and its future path, from financial market segments to the real sector and as a result to inflation. Changes in the key rate are translated into the economy through different channels (interest rate, credit, foreign exchange, balance sheet, expectation and risk acceptance channels).

Money supply

Total Russian Federation residents' funds (excluding general government's and credit institutions' funds). For the purposes of economic analysis, various monetary aggregates are calculated (see 'M1 monetary aggregate', 'Money supply in the national definition (M2 monetary aggregate)', 'Cash in circulation outside the banking system (M0 monetary aggregate)' and 'Broad money'.

Money supply in the national definition (M2 monetary aggregate)

Total amount of cash in circulation outside the banking system and funds of Russian Federation residents (non-financial and financial organisations (excluding banks) and households) in settlement, current and other on-demand accounts (including bank card accounts), time deposits and other types of deposits in the banking system, denominated in the currency of the Russian Federation, and interest accrued on them.

M1 monetary aggregate

Total amount of cash in circulation and funds of Russian Federation residents (non-financial and financial organisations (excluding banks) and households) in settlement, current and other on-demand accounts (including bank card accounts) opened in the banking system in the currency of the Russian Federation and interest accrued on them.

Net credit of the Bank of Russia to credit institutions

Gross credit of the Bank of Russia to credit institutions net of correspondent account balances in the currency of the Russian Federation (including the averaged amount of required reserves) and deposit account balances of credit institutions with the Bank of Russia, investments by credit institutions in Bank of Russia bonds (at prices fixed as of the start of the current year), and credit institutions' claims on the Bank of Russia under the ruble leg of FX swaps (USD/RUB swaps).

Net private capital inflow/outflow

The total balance of private sector operations involving foreign assets and liabilities recorded on the financial account of the balance of payments.

Non-price bank lending conditions

Bank lending conditions, which include loan maturity and its amount, solvency rules, collateral requirements and the range of lending purposes. They are assessed by the Bank of Russia based on the results of a quarterly survey among leading Russian lenders.

Operations to absorb liquidity

Bank of Russia reverse operations to absorb liquidity from credit institutions. These are operations either to attract deposits or place Bank of Russia bonds.

Refinancing operations

Bank of Russia reverse operations to provide credit institutions with liquidity. They may be in the form of loans, repos or FX swaps.

Required reserve averaging ratio

The ratio ranging from 0 to 1 is applied to the standard value of required reserves to calculate the average value of required reserves.

Required reserve ratios

Ratios ranging from 0% to 20% are applied to reservable liabilities of credit institutions to calculate the standard value of required reserves. They are set by the Bank of Russia Board of Directors.

RUONIA (Ruble OverNight Index Average)

Reference weighted rate of overnight ruble deposits in the Russian interbank market. It reflects the cost of unsecured loans of banks with minimum credit risk. To calculate RUONIA, the Bank of Russia applies the method elaborated by the National Finance Association in cooperation with the Bank of Russia based on the information on deposit transactions made between member-banks. The list of RUONIA member banks is compiled by the National Finance Association and concurred with the Bank of Russia.

Share of FX deposits

A share of deposits denominated in foreign currency in total banking sector deposits.

Standing facilities

Bank of Russia operations carried out daily to satisfy credit institutions' bids in full. The rates on overnight standing facilities shape the bounds of the interest rate corridor.

Structural liquidity deficit/surplus

A structural deficit is the state of the banking sector characterised by stable demand of credit institutions for Bank of Russia liquidity. A structural surplus is characterised by a stable surplus in credit institutions' liquidity and the need for the Bank of Russia to conduct liquidity-absorbing operations. The level of a structural liquidity deficit/surplus is a difference between the outstanding amount on refinancing operations and Bank of Russia liabilities on operations to absorb excess liquidity.

Structural transformations

Structural transformations are transformations in the economy triggered by technological progress, global shifts in capital and the labour force, changes in the affordability of resources, the political system, social institutions, legal regulation, etc.

ABBREVIATIONS

BPM5 – the 5th edition of the IMF's Balance of Payments and International Investment Position Manual

CCPI – core consumer price index

CDS – credit default swap

CPI – consumer price index

ECB – European Central Bank

FCS of Russia – Federal Customs Service of Russia

GDP – gross domestic product

IBVED – output index of goods and services by key industry

IMF – International Monetary Fund

inFOM – Institute of the Public Opinion Foundation

KOBR – Bank of Russia coupon bonds

-MIACR – Moscow InterBank Actual Credit Rate (overnight interbank lending rate)

M0 – M0 monetary aggregate

M1 – M1 monetary aggregate

M2 – M2 monetary aggregate

NWF – National Wealth Fund

OFZ – federal government bonds

RSPP – Russian Union of Industrialists and Entrepreneurs

RUONIA – Ruble OverNight Index Average

SME – small and medium-sized enterprises

TLH – transport and logistics hub

US Fed – US Federal Reserve System

VAT – value added tax

VCIOM – Russian Public Opinion Research Centre

WDC – wholesale and distribution centre