Bank of Russia

THE NATURE OF COMPANIES' INFLATION EXPECTATIONS: SURVEY RESULTS

Research note

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This research note summarises the results of a survey of manufacturing companies' inflation expectations, which was conducted by the Bank of Russia Research and Forecasting Department. The conclusions below are based solely on that specific survey whose sample size and characteristics may have affected the accuracy of projections presented herein.

The survey data confirm that companies' inflation expectations (with a median of 7.5% for 2018 and of 5.5% for the next 12 months and the next three years) substantially exceed both consumer inflation (CPI) and the Bank of Russia inflation target, and remain poorly anchored. Even so, the Bank of Russia inflation targets are gradually becoming an important factor for forming inflation expectations.

A number of studies available in global literature highlight several formal criteria for defining the anchoring of economic agents' inflation expectations. Inflation expectations are well-anchored if they are not sensitive to changes in actual inflation rates (Ehrmann, 2014), do not respond to changes in short-term inflation expectations (Łyziak and Paloviita, 2017), are susceptible to Central Bank influence (King, 2005), and are not sensitive to macroeconomic news (Gürkaynak et al., 2007).

The results of our survey demonstrate the following signs that Russian companies' inflation expectations are unanchored to the Bank of Russia inflation target:

- first, there is a high degree of heterogeneity in the level of expectations, which is caused by an uneven distribution of knowledge of economics and finance and of current economic data across companies. The heterogeneity of expectations is also due to companies relying on various projections of expected inflation, from their own inflation expectations to official forecasts (published by the Government of the Russian Federation and the Bank of Russia) and forecasts made by professional experts;

- second, companies rely mainly on past and current inflation data for forming their short- and medium-term expectations; as a result, their expectations turn out to be sensitive to changes in actual inflation leading to their instability – an indication that they are unanchored. In turn, economic agents' beliefs about current inflation levels are driven more by their subjective perception of price growth rates than by official data. This leads to overstated inflation expectations;

- third, companies' projections of future inflation are currently poorly connected with the Bank of Russia inflation target, even though some companies already rely on Bank of Russia forecasts (the median inflation expectations of such companies are 0.5 pp lower that the sample total).

The experience of many countries that have adopted the policy of inflation targeting shows that inflation expectations tend to become better anchored gradually, with different time lags recorded for developed and emerging economies, and depend on starting economic conditions that existed at the time of the transition to inflation

targeting (Roger and Stone, 2005; Mishkin and Schmidt-Hebbel, 2007; Adrian et al., 2018). The high heterogeneity and poor anchoring of Russian business's inflation expectations suggest that adaptation processes are still at work, where inflation tends to decline to a target level while expectations remain relatively heightened. Besides, several studies suggest that even after many years of inflation targeting, various shocks may contribute to inflation expectations being poorly anchored (Kumar et al., 2015; Saldarriaga et al., 2017; Miyajima and Yetman, 2018).

To amplify the impact of monetary policy on the process of forming and anchoring companies' inflation expectations, the Bank of Russia's key tasks include:

- working actively with the business community, including in Russia's regions, to disseminate information on the economic situation and on current and projected inflation rates; and

- continuing efforts to improve economic agents' financial literacy.

Introduction

Managing medium-term inflation expectations is one of the key monetary policy objectives to be pursued under an inflation-targeting regime aimed at maintaining a steadily low level of inflation over the medium term. This level is set as a specific value or as a narrow range.

The anchoring of medium-term inflation expectations (i.e. their invariability despite actual inflation fluctuations) and their being at the level of the inflation target are the most important criteria for success of an inflation targeting policy. This kind of anchoring enables a central bank to conduct a more flexible countercyclical policy without having to respond with interest rate changes to sharp but temporary price ups and downs (IMF, 2018).

Understanding the nature of inflation expectations makes it possible to gain an understanding of the factors that affect the way they are formed and translated into changes in economic agents' behaviour, and eventually into prices (Coibion, Gorodnichenko and Ropele, 2018). This information is used to develop the elements of a central bank's communication strategy and other steps that affect economic agents' expectations and make them more rational and justified. Studying inflation expectations also helps quantify the level of economic agents' confidence in a central bank's monetary policy and better predict future inflation.

That's why monitoring and quantifying economic agents' inflation expectations is an important objective for central banks. Various methodological approaches are employed for this purpose. Inflation expectations can be quantified using economic and mathematical modelling. However, the results of calculations using such models depend on the way inflation expectations were formed (rationally or adaptively) in the first place.

Most countries obtain data on inflation expectations from surveys of various categories of economic agents. The surveys help identify factors driving agents' behaviour that model-based calculations tend to leave out. This approach is not free from certain drawbacks due to

potential errors in quantifying qualitative data and to sensitivity to the manner survey questions are worded. While there are various methods for quantifying (quantitative projection) inflation expectations (such as probability, regression, balance and logistics), all of them reflect a certain linkage between current inflation and inflation expectations. What's more, the selection of an expectation quantification method directly affects survey results, leading to certain differences in the conclusions to be drawn.

The problem with quantifying qualitative expectation data usually arises when taking surveys of households, which are not always capable of giving a precise projection of future inflation, while company surveys have stronger prognostication capabilities to determine future inflation rates compared to household surveys. This has to do with the fact that statistical data on companies' expectations can be represented in a quantified form, since companies need to plan their activities, including future prices for their products (services).

This research note presents the results of a survey[1] of manufacturing companies conducted by the Bank of Russia in June 2018. The study was aimed at:

- quantifying companies' inflation expectations;

- analysing the reasons behind the heterogeneity of inflation expectations among different groups of companies;

- understanding factors that may influence Russian companies' inflation expectations; and

- evaluating the stability of inflation expectations, particularly medium-term ones, and their sensitivity to changes in the Bank of Russia's monetary policy.

1. Heterogeneity of Inflation Expectations

The literature demonstrates a diversity of approaches to measuring inflation expectations, which may affect the results (De Bruin et al., 2012). Above all, this has to do with how survey questions are worded. To evaluate inflation expectations, we may ask about the expected level of 'prices in general,' 'consumer prices,' or 'producer prices.' Yet such formulations trigger responses that involve prices that are the most visible and noticeable at the time of the survey. In turn, the level of companies' selling prices does not always reflect their inflation expectations as there are other factors too (such as the competitive environment, contracts, etc.) that modify the effect of translation of expectations into prices. In our study, the respondents were asked to evaluate the expected level of inflation both in the short term (the next six and twelve months) and in the medium term (the next three years.) This kind of

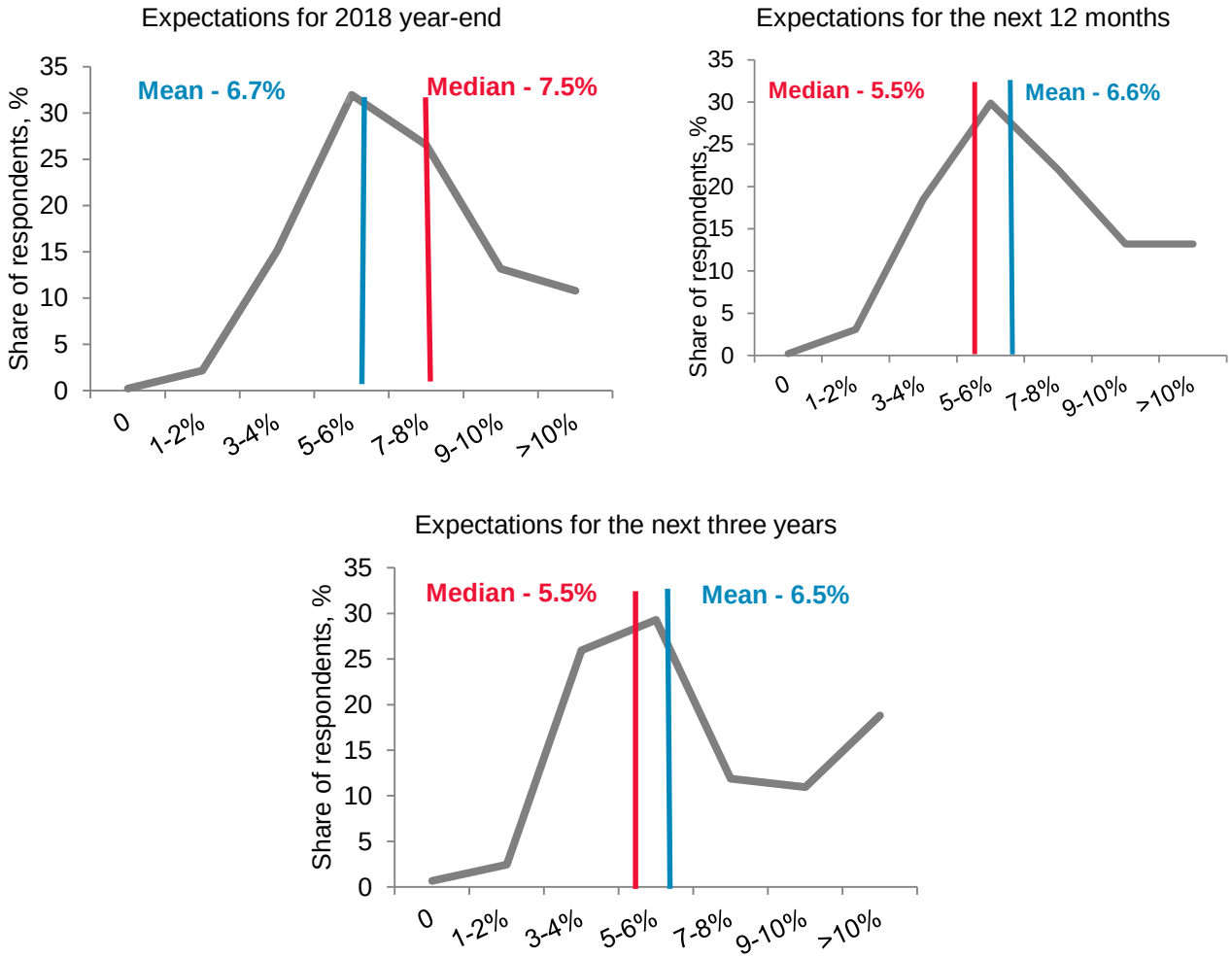
[1] This research note presents the results of a specialised one-off survey of manufacturing firms conducted by the Research and Forecasting Department of the Bank of Russia in June 2018. The survey covered 481 companies from various Russian regions across all manufacturing industries. The sample included firms in various size categories: 29.1% of all firms surveyed were SMEs with up to 250 workers; 46.4% were large enterprises with headcounts between 250 and 1,000; and another 24.5% of the respondents were major companies employing 1,000+ workers. Neither the survey's questionnaire nor its sample coincide with those used for the Bank of Russia's monthly situational survey of the non-financial sector. See the Appendices for our sample description and the list of inflation expectation questions we asked.

question wording tends to elicit respondents' beliefs that are much closer to what is understood as 'inflation.'

To evaluate inflation, we used variation-row mean and median values. Their dispersion at different planning horizons is a function of the heterogeneity of expectations.

Asked about their short-term and 2018 year-end inflation forecasts, companies projected half-year inflation because the survey was taken in June 2018. As of that June, the mean value of inflation expected by companies for 2018 was 6.7% and the median was 7.5% (see Figure 1). Companies' expectations thus exceeded the actual inflation (growth in consumer prices) recorded at that year-end.

RESPONSE BREAKDOWN BY COMPANIES' INFLATION EXPECTATIONS AT DIFFERENT PLANNING HORIZONS *Figure 1*

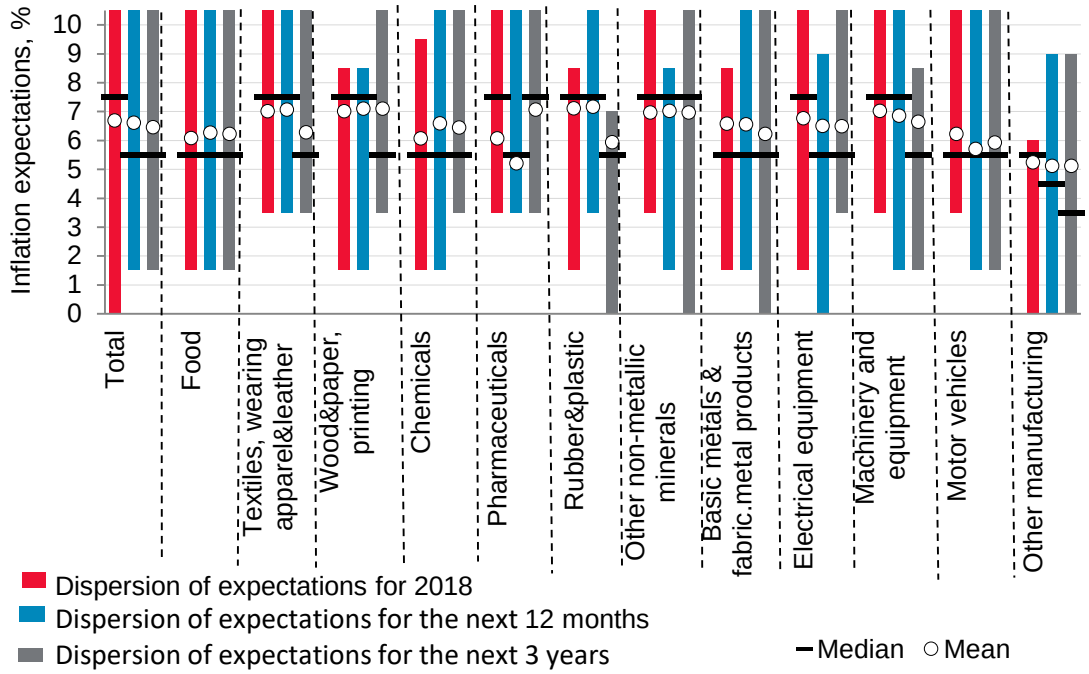


Source: Company survey results.

The survey reveals that companies' expectations are formed in a heterogeneous manner. Not only is that, but an asymmetry of expectation distribution, is also evident, with the distribution of responses skewed towards greater values. Companies' projections of 2018 inflation are concentrated in the 5-6% range (32% of all companies). More than half of the respondents (51%) gave inflation projections that exceed this level and are widely scattered in the range of 7-10% or more. Thus 83% of the respondents expected 2018 year-end inflation

to exceed 4%, i.e. to be above of the Bank of Russia target. And only 15% of the companies anticipated an inflation rate that turned out to be close to our target (within the 3-4% range).[2]

COMPANIES' INFLATION EXPECTATIONS* BY MANUFACTURING INDUSTRY *Figure 2*



**Companies are expected to respond to inflation expectation questions with range values. The ranges are bookended with the '0%' and 'more than 10%' values. Range averages are used to calculate the median and mean values. In a closed-end range, half of the sum of the upper and lower limits represents the mean value. For open-end ranges, the distance between a range's limits is assumed to be the same as in the adjacent range.*

Source: Company survey results.

Besides, inflation expectations vary very widely both across industries and among companies within any one industry *(see Figure 2).* Lower than sample mean projections of 2018 inflation are observed in industries that are mainly geared towards manufacturing of consumer goods, such as pharmaceuticals[3] and food (6.1% each), motor vehicles (6.2%), and other manufacturing products (5.3%).[4] As consumer market players, these companies are more closely involved in setting consumer prices. In addition, inflation expectations are lower in export-oriented industries, such as chemicals (6.1%) and basic metals and fabricated metal products (6.6%), dominated by large enterprises that usually pay much attention to market and price forecasting. Overstated 2018 expectations (more than 7%) were reported by companies in intermediary and investment-intensive industries such as manufacture of rubber

[2] Strictly speaking, the respondents had latitude in interpreting the term 'inflation.' Perhaps that's why some of them may have understood inflation as a rise in production costs, a hike in selling prices in their particular industry, household inflation, or something else.

[3] The pharmaceuticals industry sample included only seven firms, potentially making the respondents' projections less than fully representative.

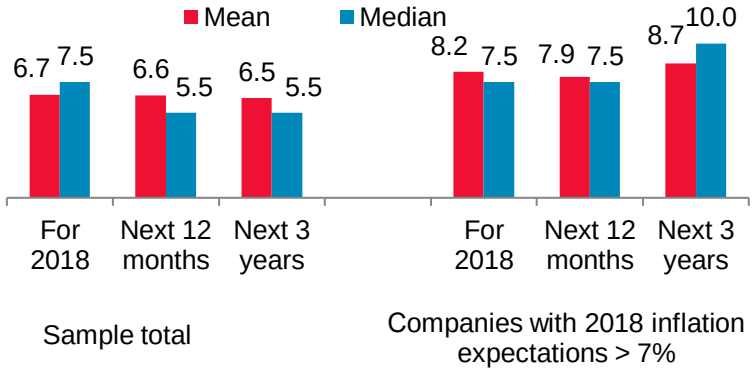
[4] Since the survey was taken in June 2018, the respondents' replies do not reflect an acceleration of consumer price growth, in particular that of food prices, that occurred in the second half of that year.

and plastics (7.1%), machinery and equipment (7.0%), wood and paper products (7.0%) textiles, wearing apparel, and leather products (7.0%.), and construction materials (7.0%).

As the planning horizon increases, companies tend to report lower inflation expectations. The distribution is skewed towards lower values. Companies' mean and median inflation expectations for the next 12 months were 6.6% and 5.5% respectively – lower than for the next six-month period *(see Figure 1).* The mean for the next three years inched down to 6.5%, while the median remained at 5.5% *(see Figure 1).* As a result, the medium-term forecast saw an increase (to 26%) in the share of respondents with inflation projections close to the Bank of Russia target, while the share of companies with overstated expectations shrank (to 71%). Companies are thus generally expecting a slowdown of inflation relative to the level observed currently.

At the same time, companies with overstated *short-term* inflation expectations relative to the sample mean also report higher expected inflation rates for the *medium term* (*see Figure 3*).

MEAN AND MEDIAN INFLATION PROJECTIONS BY THE END OF 2018 (%) *Figure 3*

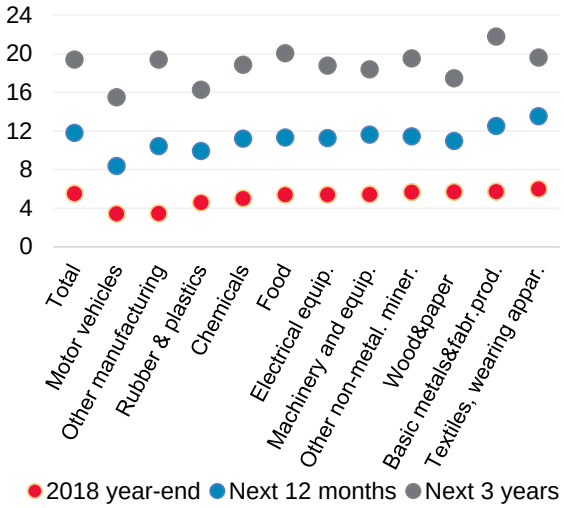


Source: Company survey results.

Comparing with a median estimate provided by inFOM, household inflation expectations for the next 12 months were 9.8% in June 2018 – considerably higher than the projections reported by companies in our survey. This was to be expected, and is explained by a higher level of economic and financial knowledge possessed by company executives compared with households.

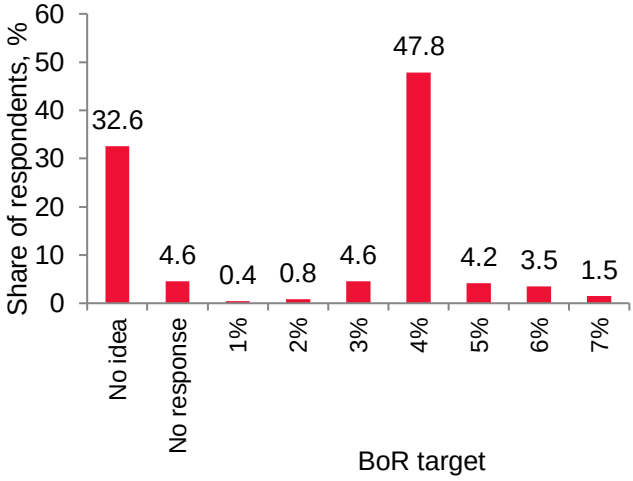
As the projection period increases, inflation expectations tend to become more heterogeneous. This may signify that Russian companies' medium-term inflation expectations are unanchored. Specifically, for the entire sample the dispersion of inflation projections for the medium term is one-third higher than that for a shorter period *(see Figure 4).* The projection dispersion is especially pronounced among producers of other manufacturing products (2.6 times more), motor vehicles (2 times more), basic metals &fabricated metal products, food, and chemicals (1.6 times more).

DISPERSION OF INFLATION EXPECTATIONS AT DIFFERENT PLANNING HORIZONS (PP) *Figure 4*



Source: Company survey results.

RESPONDENTS' PERCEPTIONS OF THE BANK OF RUSSIA INFLATION TARGET *Figure 5*



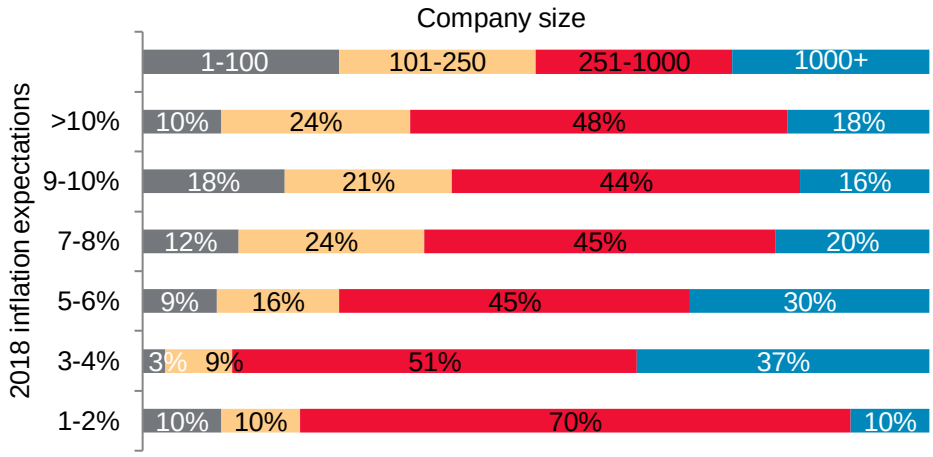
Source: Company survey results.

The observed heterogeneity of inflation expectations suggests that they are poorly anchored to the inflation target. 48% of the companies surveyed are aware that the Bank of Russia inflation target is 4% *(see Figure 5),* 33% have no idea about its level, 9% of the respondents believe that any inflation rate above 4% is the target and 6% think that it is below that level. The result implies that the opinion that inflation is of an agnostic and non-monetary nature and impossible to manage by monetary policies is widespread.

The heterogeneity of inflation expectations may be caused by an uneven distribution of economic and financial knowledge, as well as of data on the current economic situation, across economic agents. Besides, companies' capabilities to process economic data vary. Accordingly, companies incur different costs stemming from bad business decisions made as a result of their inflation beliefs and of their inflation expectations being at odds with reality.

The study confirms our assumption that large companies employing skilled staff in the area of economics and finance and collecting and analysing relevant data, must have lower inflation expectations that are more in line with actual inflation and official forecasts. At the same time, small and medium enterprises tend to overstate their inflation expectations. For instance, large (251–1,000 workers) and major (more than 1,000 workers) companies accounted for 88% of the respondents expecting an inflation rate of 3–4% by the year-end *(see Figure 6).* A high share of large companies (around 80%) also estimated inflation at 1–2%. The underestimation of inflation was most likely due to the fact that the survey was conducted ahead of changes in the rouble exchange rate that occurred in August 2018.

2018 INFLATION EXPECTATION BY COMPANY SIZE (SHARE OF RESPONDENTS, %) *Figure 6*

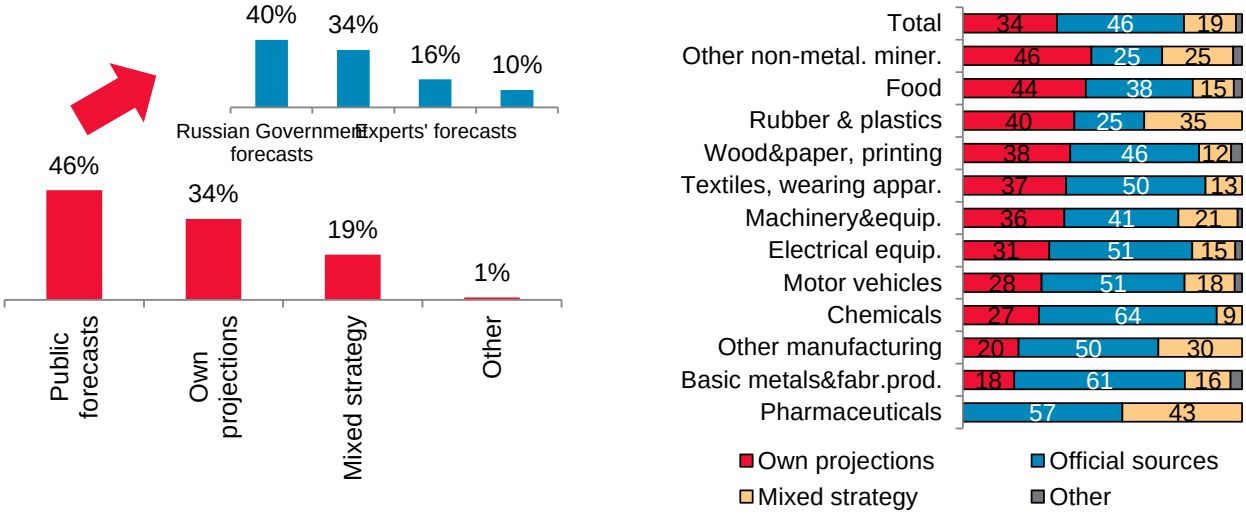


Source: Company survey results.

Another reason behind the expectation heterogeneity is companies' use of different data sources. Firms form their expectations by relying not only on their own projections, but also on official sources and forecasts from better informed agents – professional experts. Information also takes time to spread.

About 46% of the respondents form their inflation expectations by relying chiefly on forecasts from official sources (the Government of the Russian Federation or the Bank of Russia) and professional market participants. 34% of the companies only use their own forecasts to shape their beliefs about future inflation. Some of the respondents (19%) are guided by both their own forecasts and publicly available projections, thus pursuing a mixed strategy *(see Figure 7*).

INFLATION FORECAST SOURCES USED BY COMPANIES (SHARE OF RESPONDENTS, %) *Figure 7*



Source: Company survey results.

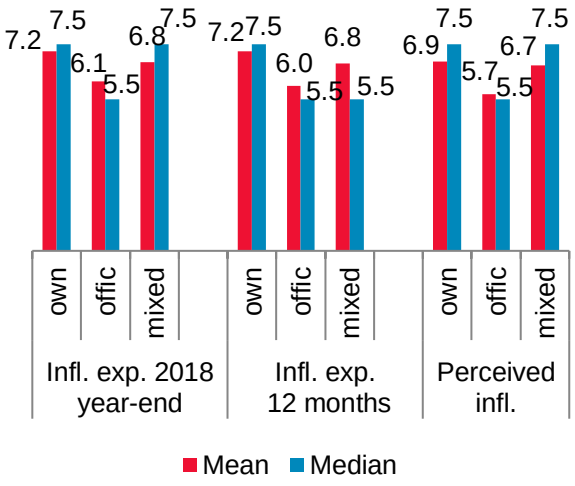
Producers tend to use publicly available forecasts much more often than households do. That's why different projected inflation targets offered by private experts and government authorities may contribute to diversity and heterogeneity of companies' inflation expectations.

Out of companies that rely on publicly available forecasts, 40% base their inflation expectations on forecasts published by the Government of the Russian Federation and 34% on those made by the Bank of Russia.

Remarkably, companies relying on public forecasts report lower short-term inflation expectations than those reported by companies relying on their own projections or using a mixed strategy *(see Figure 8).* Furthermore, if we take a look at median values, projections of inflation rates by companies that rely on Bank of Russia forecasts are 0.5 pp closer to the 4% medium-term inflation target *(see Figure 9).* Arguably, companies in that group have stronger confidence in the monetary policy conducted by the relevant authorities.

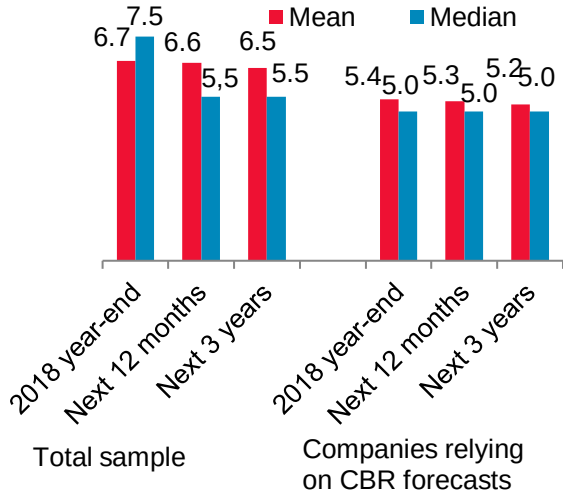
Industry-wise, the shares of companies relying on public forecasts are high among of producers of chemicals (64%), basic metals and fabricated metal products (61%), pharmaceuticals (57%), electrical equipment (51%), and motor vehicles (51%) *(see Figure 7*). As we noted above, mean inflation expectations in those industries are lower than the mean of the sample total.

INFLATION EXPECTATIONS OF COMPANIES RELYING ON DIFFERENT SOURCES OF INFLATION FORECASTS (%) *Figure 8*



Source: Company survey results.

INFLATION EXPECTATIONS OF COMPANIES RELYING ON THE BANK OF RUSSIA INFLATION FORECAST (%) *Figure 9*



Source: Company survey results.

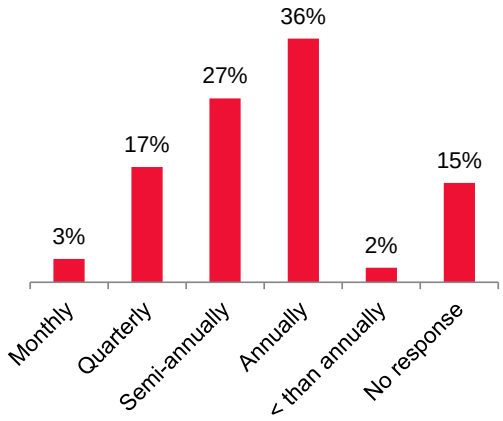
The frequency of inflation expectations revision reflects the extent of their stability or anchoring. Economic agents from time to time revise their forecasts of future inflation and data that drive their decision-making. Over time, some agents renew their inflation forecasts while others leave them unchanged. In times of shocks the frequency of expectation adjustment tends to increase. Among respondents, the shares of those that revise their expectations semi-annually (27%) or once a year (36%) are high *(see Figure 10).*

Companies that rely on public forecasts report the most stable intervals of inflation forecast revisions, which is explained by the schedule for development and publication in official media of forecasts made by government authorities *(see Figure 11).* Such companies report periods of expectation invariability of around nine months. Companies relying on their own projections tend to revise inflation forecasts most often (almost once every seven

months). Even though their costs of obtaining data are higher, they seek to revise their forecasts as frequently as possible once market risks arise.

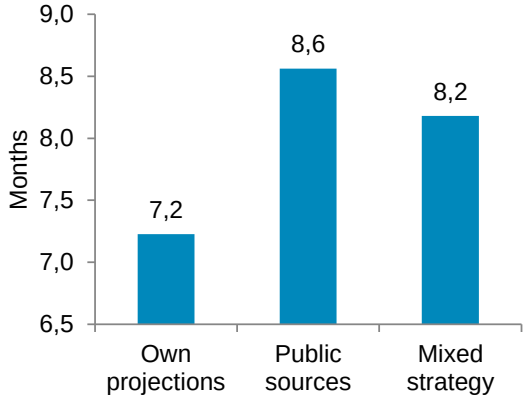
Companies that revise their forecasts relatively infrequently report a lower level of inflation expectations on average *(see Figure 12).* This suggests that such companies are less sensitive to short-term macroeconomic shocks. As we noted above, the majority of such companies use public forecasts and their projections are closer to official inflation forecasts *(see Figure 11).* Thus, 71% of the respondents that expect 2018 inflation at 1–2% revise their expectations once a year, while most companies that expect inflation between 3% and 4% revise their expectations either once a year (53% of the respondents) or at longer intervals (4%.) Some 58–60% of the respondents that expect inflation to accelerate above 7% do this less frequently than twice a year.

FREQUENCY OF INFLATION EXPECTATION REVISION (SHARE OF RESPONDENTS, %) *Figure 10*



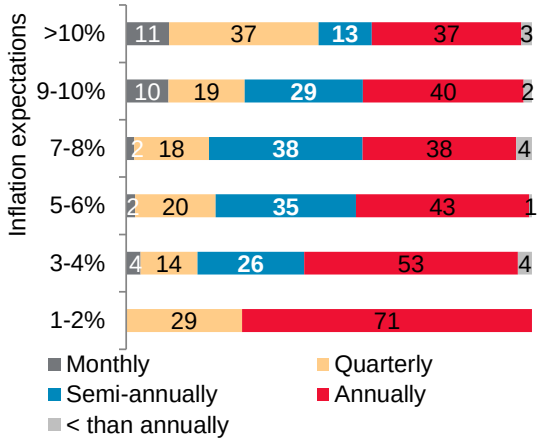
Source: Company survey results.

INFLATION EXPECTATION INVARIABILITY FOR COMPANIES RELYING ON DIFFERENT SOURCES OF INFLATION FORECASTS[5] *Figure 11*



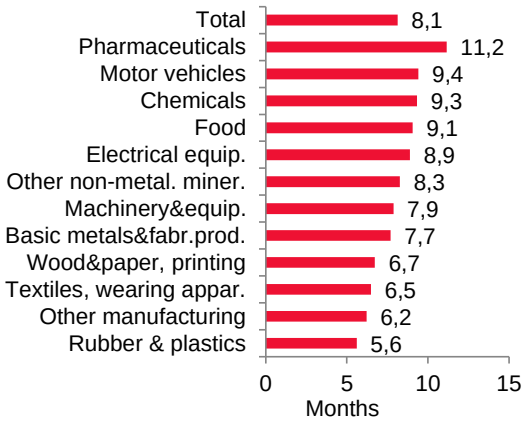
Source: Company survey results.

2018 INFLATION EXPECTATIONS BY REVISION FREQUENCY *Figure 12*



Source: Company survey results.

AVERAGE LENGTH OF INFLATION EXPECTATION INVARIABILITY PERIOD BY INDUSTRY *Figure 13*



Source: Company survey results.

[5] Average length of invariability (rigidity) of expectations: $R_i = \sum_j t_{ij} * s_{ij}$, where t_{ij} – length of invariability of expectations; s_{ij} – share of corresponding responses; i – industry; j – response choice included in the question.

Producers in the pharmaceuticals, motor vehicles, chemicals and food industries that are more likely to rely on public inflation forecasts and report a lower level of inflation expectations demonstrate a high stability of their projections *(see Figure 13).*

2. Perceived Inflation

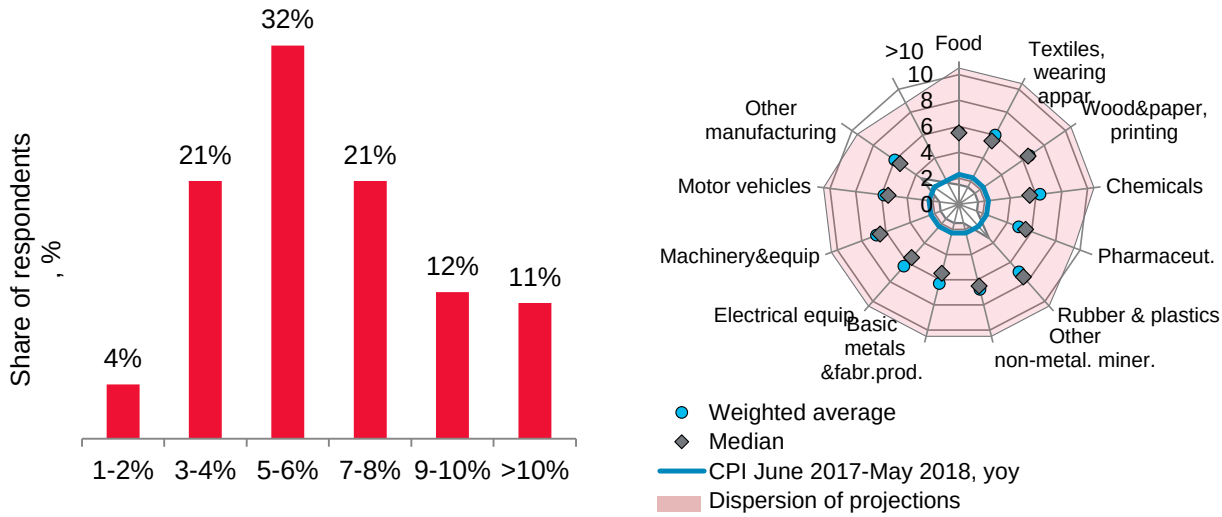
Inflation forecast variations are largely explained by *economic agents' differing perceptions of the current inflation level*. The respondents base their forecasts of price changes in the immediate future on their perception of current price changes. In that case, companies end up making forecasts of their own inflation perceptions rather than of inflation per se. Meanwhile, inflation expectations can be quite off the mark compared to actual facts. Therefore, in order to bring down the expected level of inflation, the perceived inflation rate must first be reduced.

The perceived inflation rate is identified by asking companies about their evaluation of the inflation rate over the past 12 months. An analysis of responses reveals a gap between the perceived and officially reported inflation.

Thus, according to Rosstat, annual consumer prices for goods and services rose by 2.3% in June 2018. The respondents reported a mean level of perceived inflation of 6.5% and a median level of 5.5% over the past 12 months.

A high level of inflation over the past 12 months was reported by producers of rubber and plastics (a median of 7.5%), construction materials (6.5%), machinery and equipment (6.5%), and wood and paper products (see *Figure 14).* The median level of inflation subjectively observed by the respondents is lower in the pharmaceuticals (5.5%), food (5.5%), other manufacturing (5.5%), textiles, wearing apparel, and leather (5.5%), and motor vehicles (5.5%) industries. They mostly reported lower inflation expectations.

PERCEIVED INFLATION EVALUATION (PAST 12 MONTHS) *Figure 14*

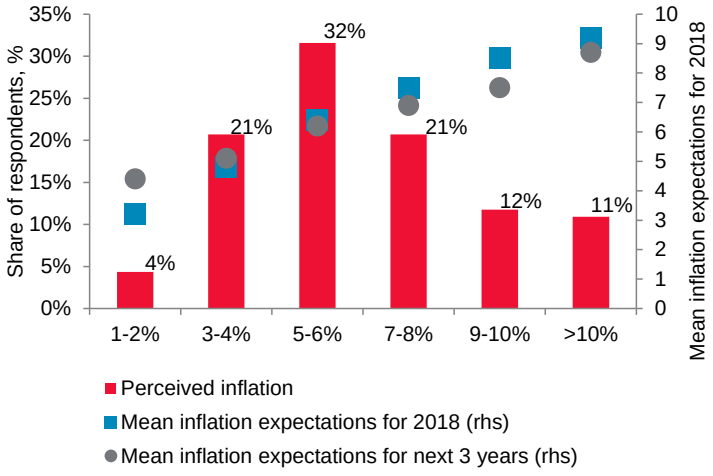


Sources: Company survey results, Rosstat.

The higher the perceived inflation, the higher companies' inflation expectations. Accordingly, the respondents' forecasts where perceived inflation is close to the official statistical data are also closer to our target level. The survey shows that companies that believe that the previous year's inflation stood at 1-2% reported mean inflation expectations of 3.2% for 2018, while those that believe it was 2-4% saw their mean level rise to 4.8% and those that believe it was 7-8% – to 7.5%, and so on *(see Figure 15).* It would be fair to assume that companies offering high evaluations of past inflation that translate their perceptions into expectations are under a strong influence of subjective factors that shape their specific view of price changes (utility rates, food prices, etc.) That's why an overstated level of perceived inflation is fraught with problems for business going forward as long as business decisions are underpinned by that perceived level.

The longer the inflation expectation horizon, the smaller the impact that changes in inflation perception have on inflation expectations. As the planning horizon increases, the link between expectations and perceived inflation becomes weaker. The correlation between evaluations of perceived inflation over the past 12 months and expectations for the next 12 months is 0.61, while the correlation between perceived inflation and expectations for the next three years is substantially lower at 0.39. As long as medium-term inflation expectations are less sensitive to changes in perceived and actual inflation, from a formal standpoint they appear to be better anchored than short-term expectations. Yet a high degree of heterogeneity suggests that those expectations are not fully anchored.

SHORT- AND MEDIUM-TERM PERCEIVED AND EXPECTED INFLATION LEVELS *Figure 15*



Source: Company survey results.

3. Drivers of Inflation Expectations

Companies' inflation expectations play an important role in their pricing. Understanding factors affecting expectations enables the development of correct approaches (including communications related) to turning adaptive inflation expectations into rational ones and to bringing down their level in general.

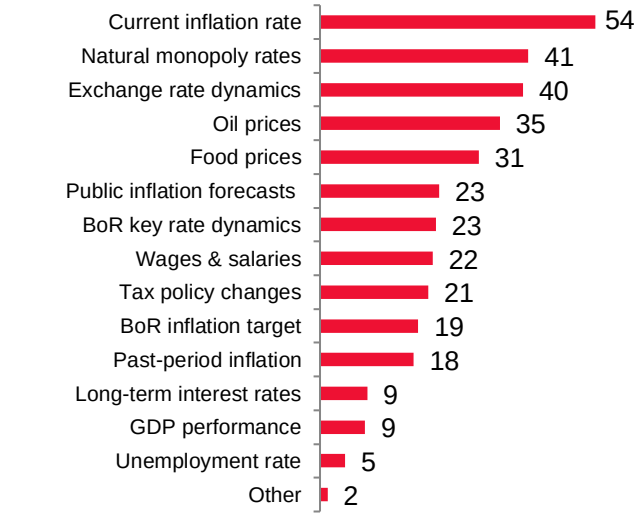
Our survey has revealed that *short-term inflation expectations of Russian companies depend to a substantial degree on past inflation,* which explains the inflation inertia in Russia's economy. It also reduces the effectiveness of monetary policy. Besides, in an environment where inflation perceived by economic agents exceeds actual inflation, it leads to overstatement of inflation expectations. Agents' subjective beliefs about the current inflation level are one of the primary drivers of inflation expectations (relied upon by 54% of the companies polled) *(see Figure 16).*

Personal experience observing the dynamics of prices for certain product categories (food, oil) and rates charged by natural monopolies (utilities) plays an important role among the factors explaining the personal perception of price changes. This reflects the dependence of expectations on subjective perception of inflation by the respondents. Many of them tend to remember price hikes for individual goods or services, including those that constitute components of their costs, while ignoring steady or declining prices, which tends to lead to overstated inflation expectations.

The expected performance of the rouble exchange rate against the US dollar is often taken into account when forming 12-month forward inflation expectations (40% of the respondents). This is important for exporters, which normally calculate export prices in a foreign currency. Exchange rate data are also a predictor of potential changes in domestic prices for finished products as imports become cheaper or more expensive, as well as in prices for intermediary import products (for companies with a high share of imports in their cost of production) or for products competing with imports.

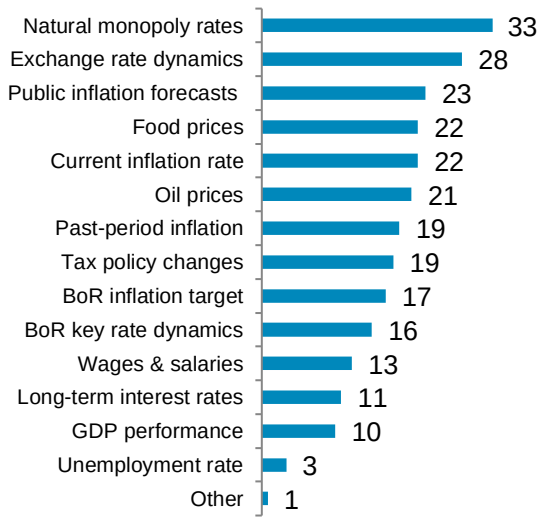
Most companies do not link inflation with any other macroeconomic indicators. 22% of the respondents use data on changes in wages and salaries to form expectations. Few respondents (9% and 5% respectively) mentioned the impact of GDP or unemployment dynamics.

FACTORS AFFECTING COMPANIES' INFLATION EXPECTATIONS FOR THE NEXT 12 MONTHS
(SHARE OF RESPONDENTS, %) *Figure 16*



Source: Company survey results.

FACTORS AFFECTING COMPANIES' INFLATION EXPECTATIONS FOR THE NEXT THREE YEARS
(SHARE OF RESPONDENTS, %) *Figure 17*



Source: Company survey results.

Medium-term inflation expectations are less sensitive to past levels of inflation than short-term expectations are. Nevertheless, current and past inflation rates remain important targets for many respondents as they form their medium-term inflation expectations (22% and 19% respectively) *(see Figure 17).*

Natural monopoly rates (named by 33% of those polled) and exchange rate dynamics (28% of the respondents) are the leading drivers behind medium-term inflation expectations. Oil prices remain quite a popular factor (21% of the respondents). Noteworthy, while formally considered forward-looking factors, exchange rate and oil price forecasts in reality serve as poor bases from which to build medium-term inflation expectations, because both in Russia and worldwide the accuracy of such forecasts leaves a lot to be desired.

The impact of the Bank of Russia key rate on medium-term inflation expectations is weaker than on short-term forecasts (16% vs 23%). This could be attributed to the fact that longer-term inflation forecasts are less dependent on current interest rates.

The correlation between inflation expectations and variables reflecting improvements in welfare (wages and salaries, incomes, and GDP) remains weak.

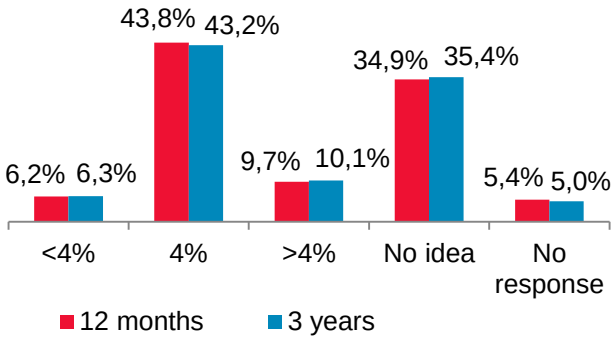
The success of a central bank's policy aimed at hitting an inflation target largely depends on how heavily inflation expectations rely on that target, i.e. how well anchored they are. If companies' opinions of a central bank's targets or policies are not defined or companies do not trust it, their long-term inflation expectations may become driven by current news of a short-term nature.

The Bank of Russia target is gradually becoming a relevant driver for inflation expectations. Around 19% of the companies take the Bank of Russia inflation target into account for their short-term projections of inflation and another 17% do so for their medium-term projections. The modest share of such companies is due in part to a relatively short history of inflation targeting in Russia.

When companies ignore the inflation target, they may either be unaware of its importance or not feel confident in the Bank of Russia's policy. Among the respondents that did not choose this factor, 35% have no idea what its level is. Some 43% are aware of the Bank of Russia inflation target (*see Figure 18*), yet do not use it to form their inflation expectations. This suggests that most companies' inflation expectations are not strongly linked to the Bank of Russia inflation target. This is apparently due to a lack of understanding of the role monetary policy plays in managing inflation and (or) a lack of trust in the ability of the Bank of Russia to secure price stability on a sustainable basis. Admittedly, the survey results turned out to be somewhat more pessimistic than could be expected given that it was conducted in the manufacturing industry and large companies accounted for almost half of its respondents. Essentially, we are dealing with either a short planning horizon in the industry while it should be at least of a medium-term nature, or with planning that relies on unstable or hard-to-forecast factors (or both).

Figure 18

PERCEPTION OF THE BANK OF RUSSIA INFLATION TARGET BY RESPONDENTS THAT DID NOT CHOOSE IT AS A FACTOR AFFECTING THEIR INFLATION EXPECTATIONS



Source: Company survey results.

Either assumption points to heightened financial risks facing companies that apply this approach. Indeed, overstated inflation expectations are fraught with unjustified selling price hikes and with having to take out expensive loans with a high forward inflation in mind (Coibion, Gorodnichenko and Ropele, 2018). As a result, such companies may lose customers or become unable to service their debts.

Inflation expectations decline and become anchored gradually. In this situation, it is important to improve economic agents' financial literacy, increase the availability of data on current and projected state of the economy, and strengthen confidence in the Bank of Russia's policy by keeping inflation close to 4%. This would contribute to inflation expectations becoming more rational, coming down to the Bank of Russia target, and anchoring at that level.

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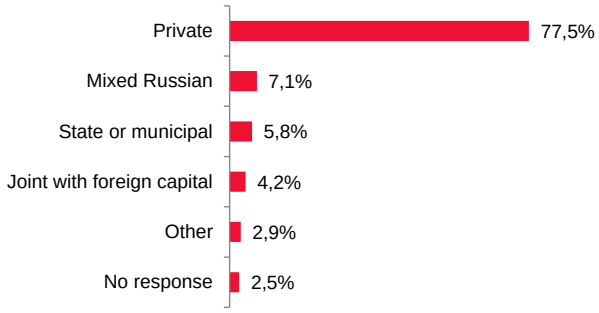
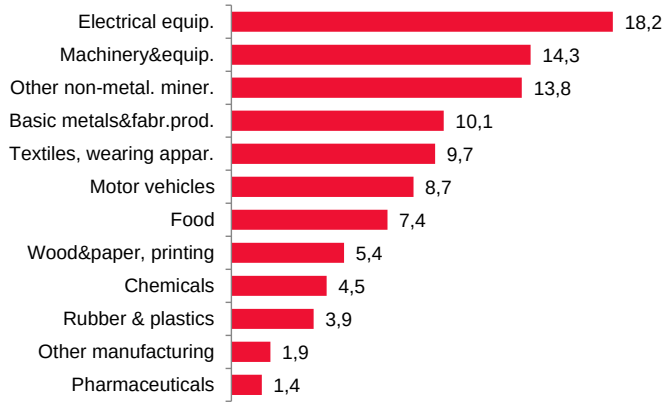
Appendix 1

SAMPLE BREAKDOWN BY TYPE OF OWNERSHIP (%) *Figure A*



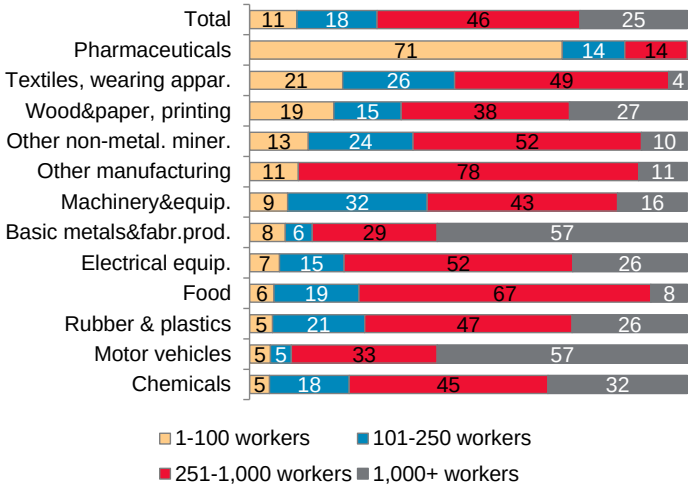
Source: Company survey results.

SAMPLE BREAKDOWN BY INDUSTRY (%) *Figure B*



Source: Company survey results.

SAMPLE BREAKDOWN BY COMPANY SIZE (%) *Figure C*



Source: Company survey results.

Appendix 2

SURVEY'S QUESTIONNAIRE

1. Indicate your type of activity under OKVED2.

2. Indicate your current workforce headcount.

3. Indicate your company's type of ownership. *(Response options: 1) fully state and/or municipally owned; 2) fully private (no state participation); 3) mixed Russian (private + state and/or municipally owned); 4) joint with foreign capital or fully foreign; 5) other).*

4. What is your assessment of: 1) the inflation level over the past 12 months; 2) expected inflation for 2018; 3) expected inflation over the next 12 months; 4) expected inflation in the next three years. (*Response options: <0%; 0%; 1-2%; 2-3%; 5-6%; 7-8% 9-10%; >10%).*

5. At what level has the CBR set its inflation target? *(Response options: 1) indicate your choice; 2) have no idea).*

6. What forecasts does your company rely on? (*Response options: 1) own estimates (ideas); 2) official forecasts by the Government of the Russian Federation; 3) forecasts by the Bank of Russia; 4) expert community estimates (RBC, Bloomberg, banks); 5) other).*

7. What factors normally have the biggest impact on your expectations of inflation for the next 12 month and for a longer period of three years? *(Response options: 1) current inflation level; 2) past-period inflation; 3) public inflation forecasts (made by government agencies or professional experts); 4) the Bank of Russia inflation target; 5) changes in the Bank of Russia key rate; 6) foreign exchange rate dynamics; 7) food prices; 8) oil prices; 9) long-term interest rates; 10) GDP performance; 11) unemployment level; 12) wages and salaries; 13) natural monopoly rates; 14) tax policy changes; 15) other).*

8. How often do you revise your inflation expectations? *(Response options: 1) monthly; 2) quarterly; 3) semi-annually; 4) annually; 5) less frequently than once a year; 6) not sure).*