Economic Outlook

Gauging sensitivity of 2020's inflation and key rate path to FX

- **In this note, we provide an idea of the sensitivity of our projections of the CBR's key rate, published in Economic outlook - Inflation, FX and policy rate projections for Kazakhstan, Russia, Ukraine and Belarus, of 9 January 2020, to variations in the exchange rate path.**
- **We narrow the exercise to looking at two scenarios for USDRUB: one in which it is 5% weaker by the end of 2020 relative to December 2019 and another in which it is 5% stronger.**
- **Our exercise involves two steps: first, we provide inflation forecasts for alternative FX paths, and second, we apply our key rate forecasting tools to the resulting inflation forecasts.**
- **The estimates at which we arrive support our call for 2020 of 2x25bp cuts bringing the key rate to 5.75% and suggest that a third cut is possible in 2Q20/July if USDRUB remains close to 60 or stronger.**
- **The caveat for these estimates is that now the core input into the monetary policy expectations is understanding how the CBR's Board of Directors will treat the recently announced social support measures and wider fiscal policy implications related to the appointment of the new government.**
- **We believe that the CBR is likely to indicate whether it registers or not any increase in the risks related to fiscal policy next week, which is signalling week in the Russian monetary policy calendar.**

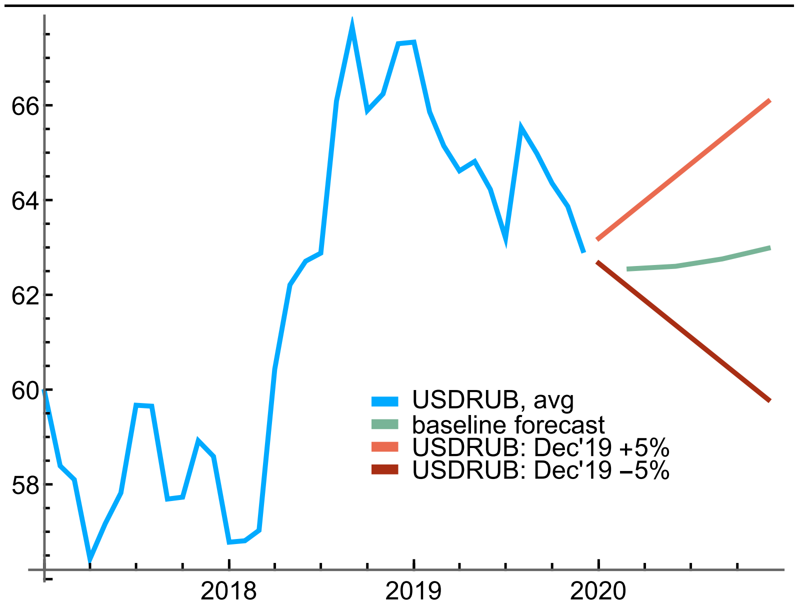
FX scenarios: +/-5% to December 2019's mean of 62.94

The average USDRUB for December 2019 stood at 62.94. Thus, a 10% change interval for this year spans between 59.80 and 66.10. USDRUB closed last week at 61.50.

We assume that variations in the FX rate for this exercise come from the risk premium or increased demand for imports, but not from oil prices. Thus, there is no special story to gasoline prices in our alternative projections. We also assume that relevant FX-crosses, such as EURUSD or USDCNH, are equal in our alternative scenarios.

Our baseline FX projections are derived from the approach developed in our *Technical Brief - Balance of payments: breaking the wheel*, of 11 November 2016, which allows us to forecast systematically accounts of the balance of payments and the corresponding level of the exchange rate.

USDRUB 2020 outlook: the baseline and 5% range



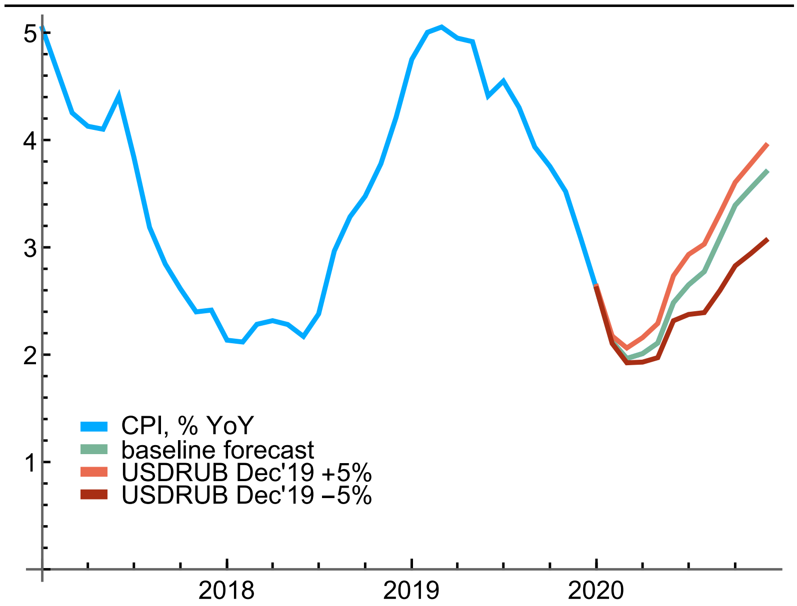
Source: CBR, VTB Capital Research.

Inflation outlook: 3.1% to 4.0%

We rely on the same approach we developed in Inflation's Anatomy, of 17 March 2017, and Inflation's Anatomy: Cutting Deeper, of 13 July 2017, to forecast item level price indices conditional on our exchange rate forecasts.

The resulting CPI growth rates for 2020 range between 3.1% in the -5% USDRUB scenario to a hair less than 4.0% if USDRUB smoothly approaches 66.10 from below.

Inflation 2020 outlook: the baseline and alternatives

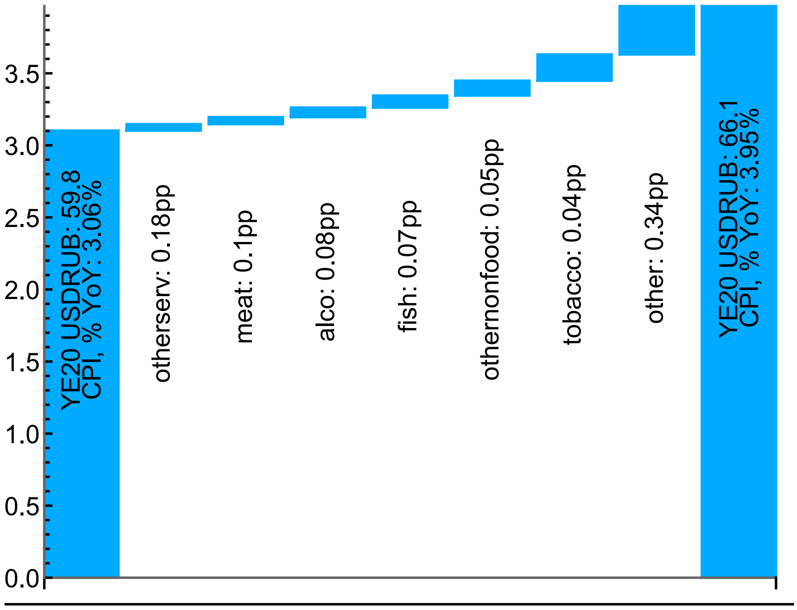


Source: Rosstat, VTB Capital Research.

The key contributors to higher inflation in this case would be the prices of foreign tourism (residing in the 'other services' category), meat, alcohol, fish and of various non-food items. The relatively high sensitivity of food items is consistent with the recent study of exchange pass-through by (Bozhechkova et al., 2020), while the slightly counterintuitive insensitivity of consumer electronics prices might be traced back to some issues we identified in our (Very) Technical Brief - Notes on CPI, smartphones and the 'obsolescence bias', of 13 December 2019.

We also highlight that our estimates imply that, on the aggregate level, the exchange rate pass-through is close to 1pp for a 10% change in FX (actually slightly more than that, as some of the effects linger after the year end.

Inflation 2020 FX sensitivity: component contributions



Source: VTB Capital Research.

Monetary policy cross-read: 2x25bp cuts in the base and +5% USDRUB scenario; 3x25bp cuts if USDRUB averages 60 or stronger

In order to gauge the likely outlook for the key rate, we rely in principle on the approach we developed in our Technical Brief - Reading the leaves on the CBR's decision tree, of 13 September 2017.

We extend it in two ways. i) We acknowledge that the CBR's Board might be looking at a wider spectrum of inflation indicators and, thus, for inputs we use data on all the sub-indices of the CPI we forecast (i.e. about 50 of them), substantially widening the information set and allowing our algorithms to assess to which of them the CBR is giving more attention. ii) We evaluate several alternative ML algorithms in a forecasting horse race, including those used in the original note and several new ones.

In order to evaluate their performance, we hold out the data for 2019 and train our algorithms on the 2015-18 sample. The resulting probability estimates of the decision to cut the key rate for each meeting of 2019 are available in the table below. We read it as suggesting that random forest (our original choice) and the support vector machine algorithms emerge as promising approaches.

Table 1. Out-of-sample ML estimates of the cut likelihood for 2019.

	Mean	Decision tree	Random forest	Neural net	SVM	Logistic regression	Decision
11/02/2019	40%	93%	49%	4%	5%	50%	Hold
22/03/2019	56%	93%	50%	78%	10%	50%	Hold
26/04/2019	69%	93%	48%	100%	55%	50%	Hold

14/06/2019	73%	93%	55%	100%	69%	50%	Cut
26/07/2019	70%	93%	50%	89%	68%	50%	Cut
06/09/2019	75%	93%	61%	100%	71%	50%	Cut
25/10/2019	48%	14%	54%	52%	69%	50%	Cut
13/12/2019	75%	93%	55%	100%	77%	50%	Cut

Source: VTB Capital Research.

We then apply these two to our alternative scenario to evaluate the likelihood of cuts for each of the 2020 meetings.

We read the results as suggesting that the first two meetings of the year are the most likely to see one cut each. Also, for the strong FX scenario, we see a substantial likelihood of easing in the second quarter, but it is substantially lower than for the first two meetings.

Table 2. Key rate cut probabilities for alternative scenarios.

	-5%	Baseline	+5%
07/02/2020	**75%**	**75%**	**75%**
20/03/2020	**61%**	**60%**	**58%**
24/04/2020	**46%**	40%	34%
19/06/2020	**46%**	47%	36%
24/07/2020	**51%**	**52%**	**54%**
18/09/2020	50%	33%	39%
23/10/2020	49%	44%	45%
18/12/2020	37%	34%	29%

Source: VTB Capital Research.

We thus find our exercise supporting our call for 2x25bp cuts to the key rate in 2020 to 5.75%, to be delivered in the first half of the year (and, most likely, in the first quarter). If USDRUB remains close to 60, that would open up the possibility of a third cut in July or even earlier in 2Q20, we believe.

The obvious caveat for this discussion is that these calculations do not capture the current uncertainty related to potential changes in the fiscal policy stance that might or might not concern the CBR's Board of Directors.

As the CBR's perception of risks to the fiscal policy stance is key for its monetary policy (and, thus, an important input into the market's expectations for interest rates), we believe that the CBR will provide such guidance during its signalling week, which starts next Monday.

Appendix 1. Key rate cut probabilities for base case: alternative models.

	Mean	Random forest	SVM
07/02/2020	75%	66%	84%
20/03/2020	60%	57%	63%
24/04/2020	40%	49%	32%
19/06/2020	47%	53%	41%
24/07/2020	52%	63%	42%
18/09/2020	33%	35%	31%
23/10/2020	44%	41%	47%
18/12/2020	34%	42%	26%

Source: VTB Capital Research.

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	126	100%

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	22	100%

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