This box discusses the concept of structural interest rates and its use in the conduct and analysis of monetary policy. It also presents a summary of the survey conducted in April 2017 by the Banco Central do Brasil (BCB) with participants of the Focus survey on their estimates of the structural interest rate in the short run at the time of the survey, and on their expectations for that rate for the coming years.

The structural interest rate, also called the neutral interest rate, is a reference point for the conduct of monetary policy. When the real interest rate is below the structural interest rate, it exerts a stimulatory effect – boosting economic activity and contributing to increasing inflation. On the other hand, when the real interest rate is above the structural rate, its effect is contractionary – it contains economic activity and contributes to decreasing inflation.

The neutral interest rate depends fundamentally on structural determinants, such as potential output growth, population growth, household intertemporal preferences as to consume more today versus tomorrow, long-term fiscal policy prospects, and financial system efficiency. Reforms and adjustments in the economy affect the structural rate, which is independent of cyclical factors, such as movements in the output gap or inflation deviations from the target. However, the structural rate is not time invariant, because its determinants have their own dynamics.

Under the inflation targeting regime, monetary policy must be conducted to keep inflation at the target within the relevant horizon. If the prospective inflation path indicates levels above the target within the relevant horizon for monetary policy, the central bank should conduct its interest rate and communication policies so that real ex-ante interest rates are contractionary, that is, above the neutral rate. The opposite applies if the prospective inflation path points to levels below the target in the relevant horizon. In this case, the central bank must conduct its interest rate and
communication policies so that monetary policy becomes stimulatory. How much above or below the neutral rate the central bank should target in these circumstances depends, among other factors, on the effectiveness of the monetary policy transmission, the output gap, the balance of risks and, in general, on the intended speed of convergence of inflation to the target.

Over long periods, in an economy with anchored inflation expectations, inflation is expected to fluctuate around the target, alternating between periods with inflation above and below the target. Reacting prospectively to these swings, the central bank is expected to target real interest rates that will alternate periods above the neutral rate with periods below the neutral rate. Sustainable reductions in real interest rates in an economy, therefore, depend on reductions in its structural interest rate.

However, one of the difficulties in conducting monetary policy stems from the fact that the neutral interest rate is not observable. Therefore, this important reference point needs to be estimated from a wide set of data and models. It is widely recognized in the economic literature and in monetary policy practice that neutral rate estimates involve a high degree of uncertainty and should be continuously reevaluated.

In order to broaden its information set about the evaluations and expectations of Focus survey participants, in April this year, the BCB asked the participants of the survey about their neutral interest rate estimates. More specifically, the BCB inquired about their estimates for the neutral rate in the short term and within two and five years (Table 1).

It should be noted that the survey was carried out in April this year, which means that the two and five year terms should be computed from that date. Moreover, perceptions about the neutral rate may have changed since then.

The mode of the answers indicates that the survey participants’ perception is that the real neutral interest rate in the short term is around 5.0% p.a.

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**Table 1 - Statistics of the survey regarding real neutral interest rate**

<table>
<thead>
<tr>
<th>Discrimination</th>
<th>Short Run</th>
<th>2 years</th>
<th>5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode (%)</td>
<td>5.00</td>
<td>4.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Median (%)</td>
<td>5.00</td>
<td>4.50</td>
<td>4.00</td>
</tr>
<tr>
<td>Number of answers</td>
<td>82</td>
<td>79</td>
<td>75</td>
</tr>
</tbody>
</table>

Source: BCB.
Note: Survey conducted by the BCB with participants of the Focus Market Expectations Survey in April 2017.

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1/ The question, “What is your estimate for the Brazilian economy’s neutral interest rate in the short term, two years from now and five years from now?” was part of the pre-Copom questionnaire sent on 3.31.2017 to the participants of the Market Expectations System, answered during the first week of April.
Only 4% of the 82 institutions that responded to this question indicated a rate below 4.0% p.a.

The surveyed institutions also showed confidence in the decrease of the neutral interest rate over time. The mode of the answers is a neutral real rate of 4.0% p.a. within two and five years. Answers below 4.0% p.a. were observed in 6% of those who answered the question concerning two years and in 39% of those who answered the question for the term of five years.

It is important to note that the structural interest rate estimates of the Copom (and its members) may differ from the responses of the Focus survey analysts.

It is interesting to contrast the estimates of neutral interest rates reported in the survey with the current level of ex-ante real interest rates, which can be measured from a series of indicators, some of which are reported in Figure 1.

In this figure, the ex-ante real Selic rate represents the expectation of the Selic rate for the next twelve months, discounted by the expectation of inflation for the same period, both reported by the Focus survey. In turn, the 360-day real swap pré-DI rate reflects the expected Selic rate over this period plus a risk premium, deflated by the expected inflation rate of the Focus survey. The real interest rate associated with one-year NTN-B bonds is also presented. Since it is a short-term rate, it also tends to follow the movements of the expected real Selic rate.

Based on these three measures, the ex-ante real interest rate is currently around 3%. Considering the path implicit in the Focus survey, the ex-ante real rate would reach 2.7% at the end of the year.

In a nutshell, although the structural interest rate is not an observable variable, it is an important reference point for the conduct of monetary policy. Its dynamics depend on time-varying structural factors. In order to keep the transparency that characterizes BCB’s actions, a summary of the estimates for this variable reported by Focus survey participants was presented.

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2/ Calculated using expectations of the Selic rate accumulated in 2018, derived from the Focus survey, discounted by inflation expectations for the same period, using the same survey.