BANCO CENTRAL DO BRASIL

Translation of the Open Letter sent by the Governor of the Banco Central do Brasil, Ilan Goldfajn, to the President of Brazil's National Monetary Council, Henrique de Campos Meirelles*

Notice 02/2018−BCB

Brasília, January 10th, 2018.

Dear Minister,

The "inflation-targeting regime" was created as a monetary policy framework by means of Decree no. 3,088, of June 21st, 1999. In its sole paragraph of article 4, the decree establishes guidelines the Governor of the Banco Central do Brasil must follow when y-o-y inflation lies outside the tolerance interval in the end of each calendar year:

> "The Governor of the Banco Central do Brasil will publicly release the reasons for the non-fulfillment of the target by means of an open letter to the Minister of Finance, which must include:
>
> I – a detailed description of the causes for the non-fulfillment;
>
> II –measures to ensure the return of inflation to the established limits; and
>
> III - the time span in which the measures are expected to be effective."

2. In 2017, the y-o-y inflation rate implied by the Extended National Consumer Price Index (IPCA) reached 2.95%, lying slightly below the lower limit of the tolerance interval of 1.5 percentage points (p.p.) about the 4.5% central target set by the National Monetary Council (CMN) for the year, in its Resolution no. 4,419, of June 25th, 2015.

3. Therefore, in compliance of what is stablished by Decree no. 3,088, I hereby submit this open letter, detailing the causes for realized inflation to lie slightly under the tolerance interval of the 2017 target, policy measures to bring inflation back to the established limits and the time span in which the measures are expected to be effective.

*In case of any inconsistency, the original version in Portuguese prevails.

Governor
SBS Quadra 3, Bloco B, Edifício Sede – 20º andar
70074-900 – Brasília (DF)
Telephone: (61) 3414-1000 – Fax (61) 3326-1989
E-mail: presidencia@bcb.gov.br

I. Reasons for realized inflation to have ended 2017 slightly below the tolerance interval of the 2017 target

4. The year of 2017 was characterized by sharp decline of inflation rates, substantial and consistent reduction of the policy interest rate and higher-than-expected economic recovery when compared to expectations at the beginning of the year. The reduction in inflation increased the population's purchasing power and, coupled with other factors, fostered consumption and economic activity rebound in general terms.

5. IPCA inflation ended the year slightly below the lower limit of the tolerance interval due to the deflation of food at home. On a twelve-month basis, inflation of the food at home subgroup, after reaching a peak of 16.79% in August 2016 and ending 2016 at 9.36%, ended 2017 with a -4.85% deflation (Table 1). The fall of 14.21 p.p. between the end of 2016 and 2017 in inflation of the food at home subgroup contributed 2.39 p.p. to the decline of IPCA inflation, from 6.29% in 2016 to 2.95% in 2017. If the food at home subgroup were excluded from IPCA, with the corresponding index reweighting, inflation would have changed from 5.68% in 2016 to 4.54% em 2017, which is very close to the inflation target of that year.

Table 1 – IPCA and selected components inflation and inflation target

%

Year	IPCA	IPCA except food at home	Food at home	Industrial goods	Services	Administered	Inflation target	Tolerance interval
2015	10.67	10.25	12.92	6.22	8.09	18.07	4.50	2.5–6.5
2016	6.29	5.68	9.36	4.69	6.48	5.50	4.50	2.5–6.5
2017	2.95	**4.54**	-4.85	1.03	4.53	7.99	4.50	3.0–6.0

Source: IBGE; BCB.

6. The behavior of food prices was mainly dominated by supply shocks, which caused record levels of agricultural production. The 2016/2017 harvest featured record crop production, which increased around 27% over the 2015/2016 harvest, i.e. an equivalent increase of 51.1 million tons[1]. The exceptional behavior of food at home prices is evident when we observe that the twelve-month inflation rate showed the sharpest deflation in the time-series, which starts in 1989[2], and the first since 2006 (Graph 1). Moreover, between 2005 and 2016, when the inflation target was set at 4.5%, annual IPCA inflation rate averaged 5.63%[3], while the food at home annual inflation rate averaged 7.24%.

[1] Source: Conab – Brazilian crop assessment, v. 4 and 5, 2017.

[2] The current episode also represents the sharpest deflation of food prices from other Brazilian price indices, such as IPC-Fipe and IPC-DI, whose time-series start in 1939 and 1990, respectively.

[3] Index calculated retroactively, according to 2009 POF weighting. If historical data are used as released by the IBGE, IPCA average inflation and food at home inflation change to 5.91% and 7.20%, respectively.

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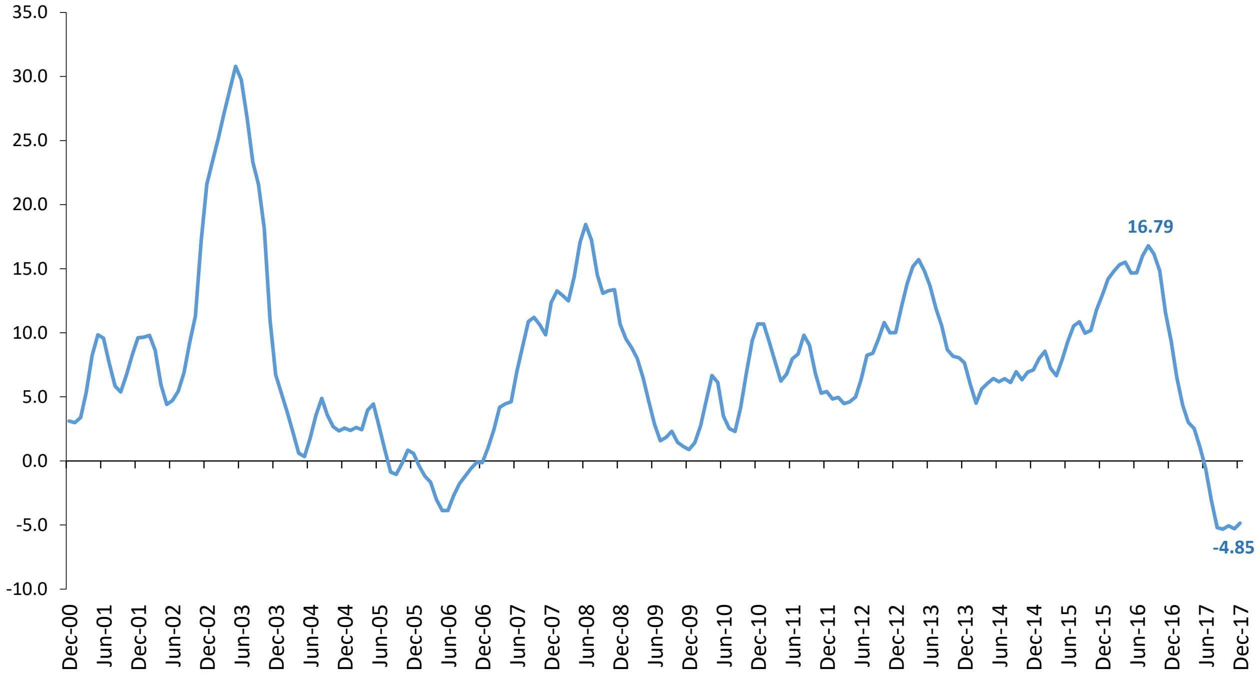
SBS Quadra 3, Bloco B, Edifício Sede – 20º andar
70074-900 – Brasília (DF)
Telephone: (61) 3414-1000 – Fax (61) 3326-1989
E-mail: presidencia@bcb.gov.br

Graph 1 – Prices of food at home (% change in twelve months)

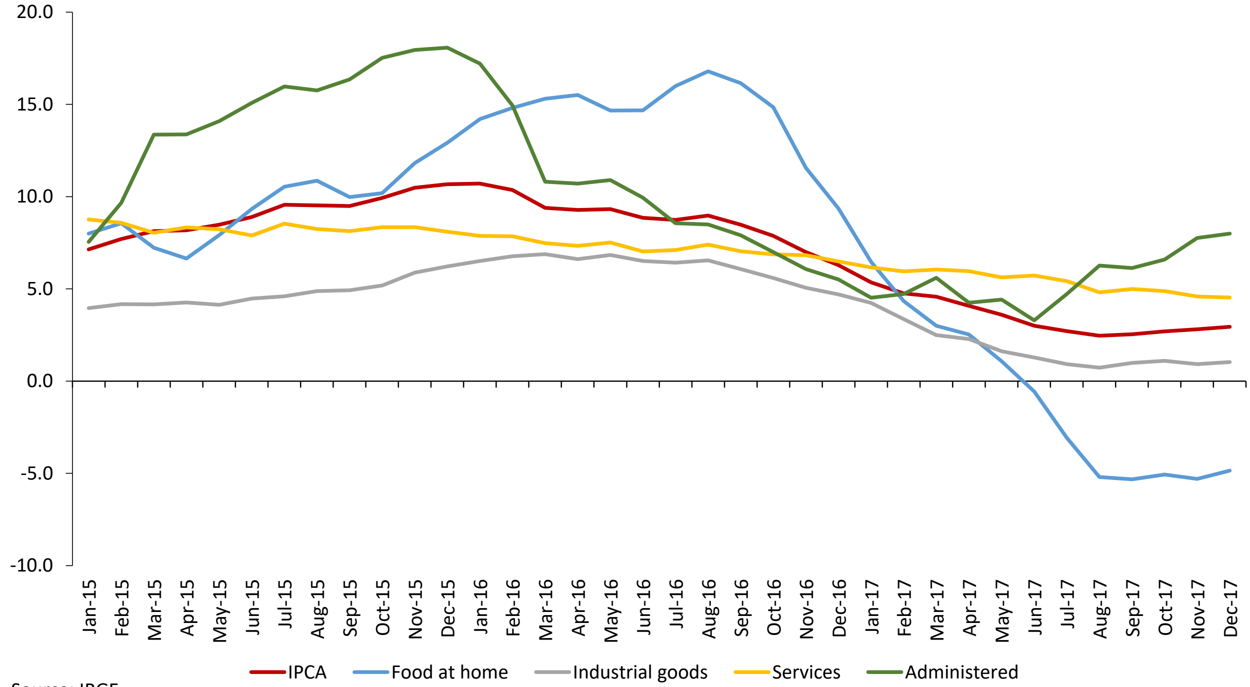


Source: IBGE

7. Due to this exceptional behavior of food at home prices, driven by shocks out of reach of monetary policy (such as the record supply of agricultural products), the Banco Central do Brasil (BCB) followed standard monetary policy recommendations and did not react to primary impacts of the supply shock. It is not worth inducing increases in prices over which monetary policy has more control in order to compensate for shocks in food prices. Monetary policy should actually fight the effects of supply shocks in other prices (the so-called second-order effects) in order to ensure inflation convergence towards to the target.

8. There was relevant disinflation in 2017. After peaking at 10.71% in January 2016, the twelve-month IPCA inflation rate began a downward path. The disinflation process was strong, involving different sectors, despite enhanced by the reduction in prices of food (Table 1 and Graph 2). Prices of services, which traditionally have shown significant changes, also strongly declined. Between 2011 and 2015, services inflation remained above 8% for most of the time, but decreased to 6.48% by the end of 2016, and to 4.53% by the end of 2017. The change in the prices of industrial goods also followed declining path, from 6.22% in 2015 to 4.69% in 2016 and 1.03% in 2017. On the other hand, administered-price inflation rates in 2017 were dominated by health plans, fuels and electricity and increased over the year, mainly in the second half of 2017, reaching 7.99% by the end of the year. For comparison, it reached 5.50% in 2016.

Graph 2 – IPCA and IPCA components' inflation (% change in twelve months)



Source: IBGE

9. The role of inflation drivers can be quantitatively assessed with an inflation decomposition, whose results are usually presented every year in Inflation Reports[4]. Initially inflation deviations from target are calculated. Then, factors driving deviations from target are estimated. Using BCB models [5], the four determinants of the inflation deviation from target are: (i) inertia associated with the deviation of previous year's inflation from target; (ii) difference between agents' inflation expectations and the inflation target; (iii) imported inflation (from commodity prices – including oil – measured in domestic currency, using the exchange rate) as deviation from target; and (iv) supply shocks (associated mainly with food prices). It is worth noting that these estimates are approximations based on models and, therefore, are subject to uncertainties inherent to the modeling process.

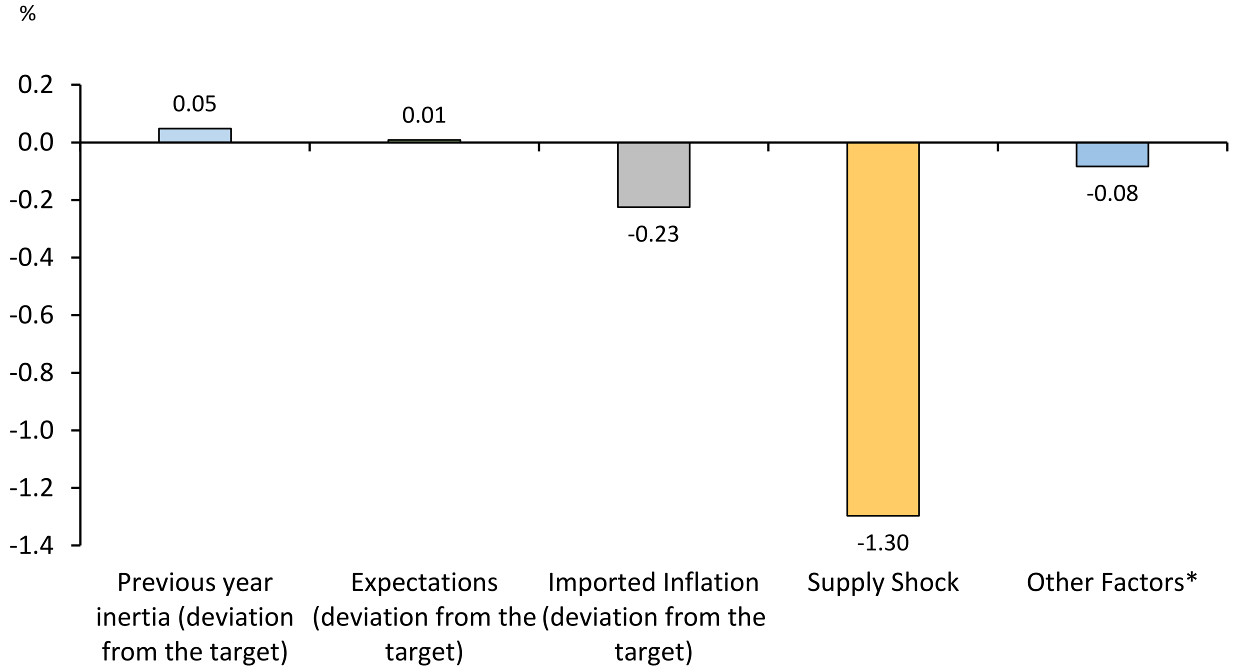
10. Graph 3 shows the results for 2017. The values present the contribution of selected factors for the -1.55 p.p. deviation of IPCA inflation from target. According to this decomposition, supply shocks contributed with -1.30 p.p. for the inflation deviation from target, thus accounting for 83.9% of the deviation.

[4] The methodology embedded in this letter reflects improvements in relation to the one used in the March 2017 Inflation Report and will be described in the March 2018 edition.

[5] See boxes "Small-sized aggregate model – 2017" e "Reformulation of models for administered prices – medium term projection" of the June and September 2017 Inflation Reports, respectively.

Governor
SBS Quadra 3, Bloco B, Edifício Sede – 20º andar
70074-900 – Brasília (DF)
Telephone: (61) 3414-1000 – Fax (61) 3326-1989
E-mail: presidencia@bcb.gov.br

Graph 3 – 2017 inflation rate decomposition



* Contribution of IPCA inflation as deviation from the target after excluding the following factors: inertia associated to the share of previous year inflation that deviated from the target; expectations as deviation from the target; imported inflation; and supply shock.

11. The remaining determinants had moderate impact. The inertial effect from the previous year (as deviation from target) contributed marginally to the deviation of inflation in 2017, due to the sharp decline of inflation throughout 2016, which started the year with annualized values above the target and reached values below the target by the end of the year. Inflation expectations measured by the Focus survey, conducted by the BCB, remained well anchored and did not contribute for deviations of inflation from target. Imported inflation (also as deviation from target) had negative contribution, of -0.23 p.p., for the deviation of inflation from target, with -0.33 p.p. stemming from exchange rates and 0.11 p.p. from commodities[6]. The effect of exchange rates reflected the exchange rate appreciation in the first quarter of 2017 relative to 2016. Exchange rate volatility over the following quarters were relatively moderate. Other factors contributed with -0.08 p.p. to the inflation deviation from target[7].

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[6] The contributions of external prices were calculated assuming deviations in relation to 2.0% p.a. for the change in the prices of commodities, coherent with long term external inflation at the same level, and 2.5% p.a. for the exchange rate, consistent with long term modeling conditions of the Phillips curve for market prices.

[7] Disaggregating between market and administered prices, the contribution of other factors for the inflation deviation from target was -0.71 p.p. and 0.63 p.p., respectively.

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SBS Quadra 3, Bloco B, Edifício Sede – 20th floor
70074-900 – Brasília (DF)
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E-mail: presidencia@bcb.gov.br

II Measures to ensure the return of inflation to the established limits

12. The BCB has set the policy interest rate (Selic), and will continue to do it, to comply with the inflation targets established by the National Monetary Council (CMN).

13. In this context, BCB´s reaction to inflation is assessed in two periods. In the first period, still in 2016, it was necessary to break the dynamics of the inflationary process, in order to re-anchor inflation expectations. Therefore, Selic rate was left unchanged, until October 2016, at 14.25%, the same level since July 2015. In 2015 inflation increased due to the realignment of administered prices and to the effects from the currency depreciation, suffering a negative feedback loop from a combination of still tight conditions in factor markets, high inertia and de-anchored inflation expectations.

14. Monetary policy communication and action were essential to the re-anchoring of inflation expectations. Anchoring inflation expectations are a key element for the success of the inflation targeting regime. According to Focus survey, the median of inflation expectations for 2017 had been above the target since January 2013, when information started to be collected, and reached the peak of 6.0% in February 2016, remaining at this value until April of the same year (Graph 4). Also in the beginning of 2016, the median of inflation expectations for 2018, 2019 and 2020 reached peaks of 5.5%, 5.0% and 5.0%, respectively. Deviations in current inflation from target were transmitted to longer term expectations. This behavior became clear in the second half of 2015, when changes in inflation expectations for 2015 and 2016 transmitted not only to 2017, but also affected expectations for 2018, 2019 and 2020. Although the inflation target was not yet available for those years, the increase in agents´ forecasts to values above 4.5% in longer horizons suggested the de-anchoring of expectations.

15. Changes in monetary policy conduction and a strong monetary policy stance allowed the anchoring of inflation expectations throughout 2016. This process consolidated and became more evident along the second semester, with different measures of inflation expectations, extracted from the Focus survey and from financial assets, like public securities, gradually converging towards the inflation targets.

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SBS Quadra 3, Bloco B, Edifício Sede – 20º andar
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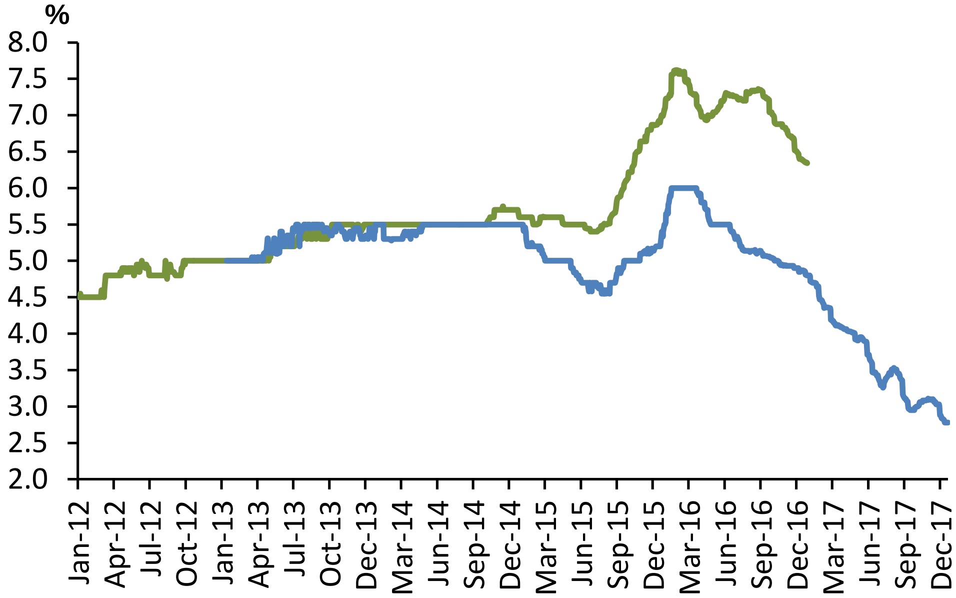
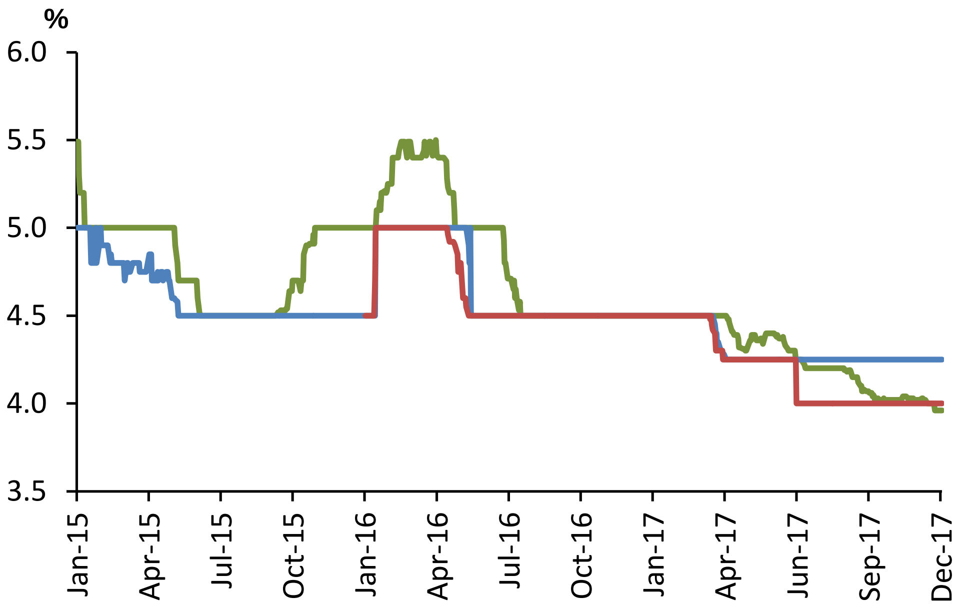
Graph 4 – Evolution of inflation expectations for 2016–2020 according to the Focus Survey



Source: BCB



Source: BCB

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70074-900 – Brasília (DF)
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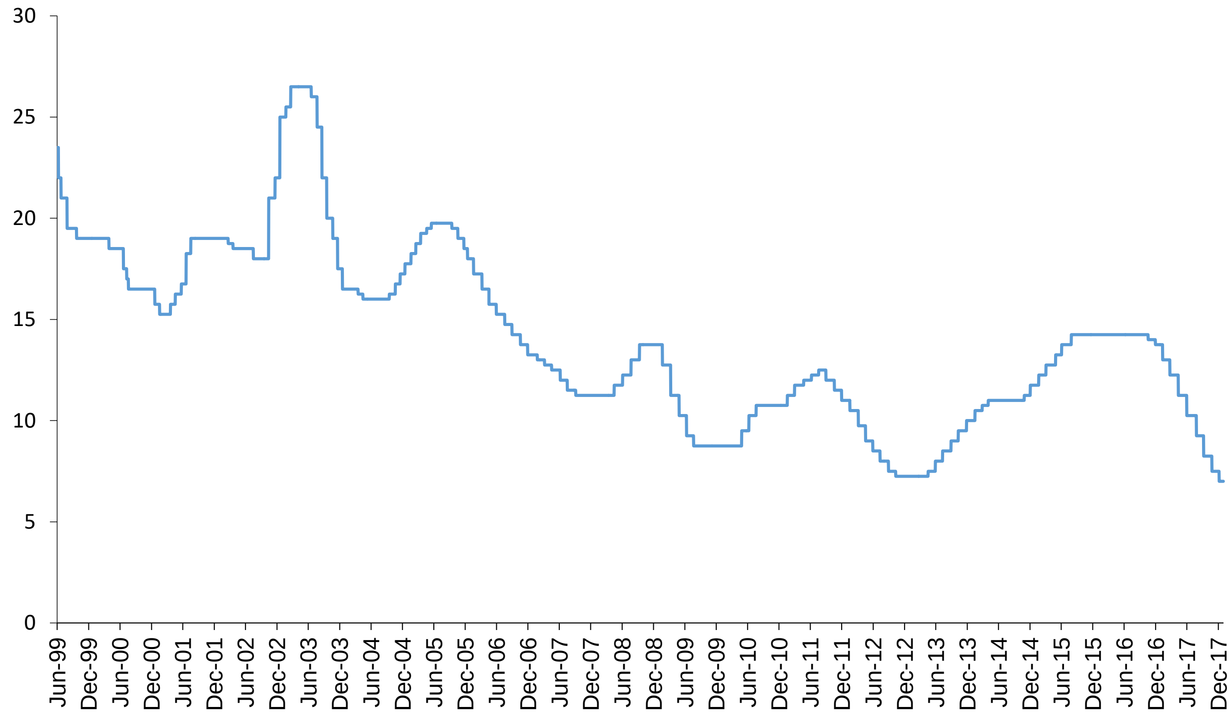
16. With clear signs of control of the inflationary process available and the re-anchoring of inflation expectations consolidated, the conditions for monetary easing were created. Monetary policy entered, then, in the second period, highlighted by the start of the decrease of the Selic rate, in October 2016, in a movement that lasts until today. During this period, annualized Selic rate decreased 7.25 p.p., to 7.0%. (Table 2), reaching the historical minimum (Graph 5). This is the second most rapid drop in the base interest rate in the history of the inflation targeting regime, with an average monthly reduction of 0.48 p.p., i.e. 0.73% per meeting.

Table 2 – Copom Decisions (August 2016 – December 2017)

Meeting	Date of decision	Selic Rate (% a.a.)	Change (p.p.)
201st	08.31.2016	14.25	0.00
202nd	10.19.2016	14.00	-0.25
203rd	11.30.2016	13.75	-0.25
204th	01.11.2017	13.00	-0.75
205th	02.22.2017	12.25	-0.75
206th	04.12.2017	11.25	-1.00
207th	05.31.2017	10.25	-1.00
208th	07.26.2017	9.25	-1.00
209th	09.06.2017	8.25	-1.00
210th	10.25.2017	7.50	-0.75
211th	12.06.2017	7.00	-0.50

Graph 5 - Selic Rate (% p.a.)



17. It´s important to assess analysts´ expectations from the Focus survey and compare them with the conditional forecasts of the Monetary Policy Committee (Copom). When Copom started reducing the Selic rate in October 2016, the median of the Focus expectations for 2017 inflation was around 5.0%, while the conditional forecasts of Copom in a scenario with interest rate and exchange rate based on the Focus survey were around 4.9%. At the beginning of 2017, when Copom intensified the easing pace to 0.75 p.p. (later moving to 1.0 p.p. in April), the median of inflation expectations for 2017 stood around 4.8%, while the expectations for the Selic rate pointed to 10.25% at the year end. At that moment, Copom's conditional forecasts considering interest rate and exchange rate paths from Focus survey were around 4.4%, therefore 0.4 p.p. below the market analyst´s expectations. As emphasized in the minutes of the 204th Copom meeting, under anchored inflation expectations, the Committee understood that the scenario was characterized by widespread disinflation and weaker-than-expected economic activity, allowing to intensify the monetary easing cycle. As the disinflation process advanced, inflation forecasts for 2017 and 2018 retreated over the year.

18. Regarding economic activity, at the beginning of 2017, the median of expectations for GDP in that year pointed to real growth of 0.5%, according to the Focus survey. Currently, with most of the 2017 GDP data available up to the third quarter, expectations stand around 1.0%. The Copom's forecasts for GDP also increased from 0.5% in the March Inflation Report to 1.0% in the December Inflation Report. Thus, compared to the beginning of 2017, the economy presented lower inflation and higher activity, combined with a Selic rate 3.25 p.p. below analysts´ expectations.

Governor
SBS Quadra 3, Bloco B, Edifício Sede – 20th floor
70074-900 – Brasília (DF)
Telephone: (61) 3414-1000 – Fax (61) 3326-1989
E-mail: presidencia@bcb.gov.br

19. In 2017, the reversion of food at home prices inflation was larger than anticipated, both by Copom and market analysts. As highlighted in quarterly Inflation Reports, price changes in food at home subgroup were the main reason for the disinflationary surprises in short term forecasts.

20. As already mentioned, Copom has emphasized that, in an environment of anchored inflation expectations, monetary policy should focus on containging only second order effects of relative price adjustments, including those associated to the disinflation of food prices. Copom has also highlighted that monetary policy follows the same principles both under inflationary and disinflationary supply shocks. This is the standard procedure recommended by the economic literature and by international practice. If Copom had reacted to the primary effects from the food prices shock, later it would have to react to the primary effects of an occasional increase of these prices, generating excess interest rate volatility and possibly jeopardizing the compliance with inflation targets in subsequent periods.

21. Consistent with this approach, the Selic rate, after being reduced twice in the last quarter of 2016, in 0.25 p.p. steps, intensified the pace along 2017, initially with two reductions of 0.75 p.p., followed by four 1.0 p.p. drops, and finally by one of 0.5 p.p. (Table 2).

22. The Selic reduction favors the expansion of activity, closing the (negative) output gap, and contributing for the compliance with the inflation targets established by the CMN. The Copom has repeatedly emphasized that the economic conditions prescribes accommodative monetary policy, that is, with interest rates below the structural rate.

III - Time span in which the measures are expected to have effect

23. Inflation is on a convergence path toward the target in 2018. On a twelve-month basis, inflation at the end of 2017 increased 0.49 p.p. compared to the trough of 2.46% observed in August. Conditional forecasts produced by the Copom and the Focus survey expectations point to the continuation of this trend. For instance, conditional forecasts with interest rate and exchange rates trajectories extracted from the Focus survey show an increase of inflation along 2018 in the 2017 December Inflation Report. According to these forecasts, inflation would reach 3.2% at the end of the first quarter in 2018, above the lower limit of the interval for 2018 (3.0%), finishing the year at 4.2%, 0.3 p.p. below the 4.5% target. The same forecasts for 2019 point to inflation at 4.2%, close to the 4.25% target established for the year.

24. Increasing quarterly (seasonally adjusted) inflation rates, supported by monetary stimuli, combined with exceptionally low quarterly values discarded of the twelve-month figures[8] – associated with food prices deflation –, will imply upward path of inflation along 2018 .

25. Therefore, the BCB has taken measures that will allow inflation to comply with the targets established by the CMN, of 4.5% for 2018, 4.25% for 2019 and 4.00% for 2020. The

[8] The discard of past figures occurs naturally, as the twelve-month window that covers the statistics moves along time. Hence, months with inflation significantly affected by the deflation in food at home prices are eliminated from the calculations as new observations are embedded.

Governor
SBS Quadra 3, Bloco B, Edifício Sede – 20º andar
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Telephone: (61) 3414-1000 – Fax (61) 3326-1989
E-mail: presidencia@bcb.gov.br

monetary easing process will continue to depend on the evolution of the economic activity, on the balance of risks, on possible reassessments of the estimates for the length of the cycle and on inflation forecasts and expectations.

Sincerely,

Ilan Goldfajn
Governor

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SBS Quadra 3, Bloco B, Edifício Sede – 20th floor
70074-900 – Brasília (DF)
Telephone: (61) 3414-1000 – Fax (61) 3326-1989
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