Inflation Targeting Regime in Brazil

Information up to June 2016

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Frequently Asked Questions Series

“Frequently Asked Questions” Series

Central Bank of Brazil

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Inflation Targeting Regime in Brazil

This paper is part of the Banco Central do Brasil's "Frequently Asked Questions" series (FAQ). This series, which is produced by the BCB's Investor Relations and Special Studies Department (Gerin), provides information on economic topics of interest to investors and the general public.

The Banco Central do Brasil (BCB) is producing this series as part of its ongoing efforts to enhance the transparency of the Brazilian economic policy and the effectiveness in communicating its actions.

Contents

Inflation Targeting Regime in Brazil

General view

1. What is the inflation targeting regime?

The inflation targeting regime is a monetary system in which the central bank commits to act to ensure that the effective inflation is in line with a pre-established goal, announced publicly.

2. What elements characterize the inflation targeting regime?

The inflation targeting regime is generally characterized by four basic elements:

- public knowledge of numerical targets for medium-term inflation;
- institutional commitment to price stability as the primary monetary policy objective;
- operational strategy guided by transparency to clearly communicate the plans, goals and reasons for the monetary policy decisions to the public; and
- mechanisms to make the monetary authorities responsible for fulfilling the targets for inflation.

Therefore, an inflation targeting regime involves more than the public announcement of numerical goals for inflation. Transparency and regular accountability to the society and its representatives are essential elements of an inflation targeting regime.

3. What are the basic features of the institutional design of an inflation targeting regime?

The main features present in the determination of an inflation targeting regime are:

- choice of inflation index: usually there are two alternatives – the headline index or a core inflation index;
- target definition, which can be a single point or a band. If the target is a band, there is still the option of whether or not having a central target;
- the target horizon: definition of the reference period for assessing the accomplishment of the inflation target;
- existence of escape clauses: establishment, a priori, of situations that can justify the non-fulfillment of the goals; and
- transparency: ways of communication used by the monetary authority to inform the society about the conduct of the targeting regime.

4. Is it possible to have targets for foreign exchange rate or economic growth in the inflation targeting regime?

In the inflation targeting regime, central bank actions are based on the control of just one instrument, which is the short-term interest rate. Therefore, additional targets as the foreign exchange rate or the economic growth cannot be attributed to the monetary policy. However, these and other economic variables are taken into account in the construction of the prospective scenario for inflation, as can be seen in the Minutes of the Monetary Policy Committee (Copom).

5. What are the prerequisites for the adoption of an inflation targeting regime?

In an inflation targeting regime, it is necessary to have operational autonomy of the central bank, so that the monetary policy can be managed towards the achievement of the targets. Moreover, it is necessary that the fiscal situation is under control, and that the national financial system is stable, so as not to compromise the pursuit of the inflation target. On the other hand, the inflation targets must be credible, i.e. they must have a reachable value. Finally, it is necessary that the central bank possesses knowledge about the functioning of the economy, particularly the transmission mechanisms of monetary policy and its quantification by means of macroeconomic models.

6. Why should a band be established for the inflation target rather than a single point target?

The bands are used for two reasons.

Firstly, no central bank has total control over the behavior of prices. Although the central bank adjusts the basic interest rate in order to affect, by various indirect mechanisms, the evolution of prices, inflation is subject to several factors external to the bank. In addition, there are lags in the transmission mechanisms of the monetary policy. In the case of an inflationary shock today, even if the central bank responds promptly, inflation will probably increase in the very short-term regardless of the monetary policy action.

Secondly, the presence of bands allows the central bank to partially accommodate some shocks. The existence of a band allows the monetary authority to meet its goal without adjusting the monetary policy towards a too restrictive stance. However, this band should not be too broad, since it could be considered as a lack of commitment to its midpoint target. Hence, if on the one hand it is important that there are bands to accommodate economic shocks, on the other hand its magnitude should be limited so as not to jeopardize the credibility of the inflation targeting regime.

7. Which factors determine the target band?

When defining the band to be considered in the inflation targeting, the following factors are taken into consideration:

- frequency and magnitude of the shocks to which the economy is subject and resilience of the economy to these shocks. For example, shocks to the country risk premium, exchange rate and oil prices can significantly impact the price level;
- the existence of lags in the effects of monetary policy: due to lags between the adoption and the effects of the monetary policy mechanisms, there is a delay between the monetary authority action and the reaction of the economy. Thus, when a shock occurs, even if the central bank acts in a decisive and timely way, it may not be able to meet a single point target, due to the aforementioned lags; and
- limitation of the prediction models, due, for example, to the presence of structural changes in the economy, which cannot be readily captured in econometric models, given the need for reconstruction of the historical series.

8. What are the transmission mechanisms of the monetary policy?

The transmission mechanisms of monetary policy are the channels through which changes in the basic interest rate (which is the main instrument of monetary policy) affect the behavior of other economic variables, particularly prices and product. The main mechanisms reflect the influence of changes in the monetary policy instrument over the components of aggregate demand, economic agents' expectations, asset prices (including the exchange rate), monetary and credit aggregates, wages and wealth.

9. What time horizons are used in an inflation targeting regime? Which one is used in Brazil?

When adopting an inflation targeting regime, the time available for the achievement of the target must be specified. In Brazil, the calendar year is used, i.e., the achievement of the target is evaluated considering the 12 months from January to December. Some countries use a system known as rolling window, in which the achievement of the target is evaluated every month, considering the accumulated inflation in a certain number of months (usually 12). A third alternative, as it occurs in Australia, is not to set a fixed horizon, but to consider that the goals must be achieved on average over time.

10. What are the advantages and disadvantages of both the short and the long time horizons?

Given the lags inherent to monetary policy, establishing a longer time horizon for the inflation target can be a good way to deal with economic shocks and, at the same time, preserve the credibility of the scheme. Longer horizons allow softer monetary policy responses to economic shocks, since inflation, even showing large variations, has some inertia, requiring more time to adjust. On the other hand, shorter horizons enable faster convergence of expectations, making it possible to counteract the inflationary effects resulting from high expectations for inflation. In economies such as Brazil, which is still seeking convergence to international standards of inflation rate, shorter horizons might be more suitable.

Inflation targeting regime in Brazil

11. When was the inflation targeting regime established in Brazil?

At the beginning of March 1999, in an environment still marked by uncertainty about the impact of the devaluation of the Brazilian Real on inflation, the Brazilian Government announced its intention to start conducting the monetary policy based on an inflation targeting framework. Brazil formally adopted the inflation targeting regime as monetary policy guideline with the edition of the Decree No. 3,088 by the President of the Republic on June 21st, 1999. On June 30th, 1999, the National Monetary Council (CMN) issued the Resolution number 2,615, which defined the reference price index and inflation targets for 1999 and for the two years thereafter.

12. Why has the price stability been chosen as the main objective of the monetary policy in Brazil?

After several years of high economic growth, the 1980s were marked by the conjunction of two factors: a sharp drop in the Brazilian economy growth rate and large increases in inflation, situation that lasted until the first half of the 90s, and that led to the adoption of seven stabilization plans in less than ten years.

Today there is consensus in the Brazilian society about the benefits of price stability, which is a necessary condition for self-sustaining growth. Moreover, in the medium and long term, higher inflation does not generate higher growth, but rather creates an unfavorable environment for investment and penalizes the poorest layers of society, promoting income concentration. It is worth adding that the world's major central banks adopt, implicitly or explicitly, price stability as the primary objective of monetary policy.

13. Which is the price index chosen for the inflation targeting regime in Brazil? What are its main characteristics?

In Brazil, the inflation target is set in terms of the year-over-year rate of increase in one of the Brazilian CPIs, the IPCA. IPCA is the Portuguese acronym for Broad National Consumer Price Index. The index is calculated by the Brazilian Institute of Geography and Statistics (IBGE). The choice of the consumer price index is frequent in most inflation targeting systems, because it is the most appropriate measure to evaluate the evolution of the population's purchasing power.

The IPCA was chosen for having greater scope: it measures the inflation for households with incomes between 1 and 40 minimum wages in 13 cities or metropolitan regions.

For more information about Brazilian price indices, see FAQ 2- Price indices in Brazil.

14. What is the difference between the headline index and the core inflation? What type of index does Brazil adopt?

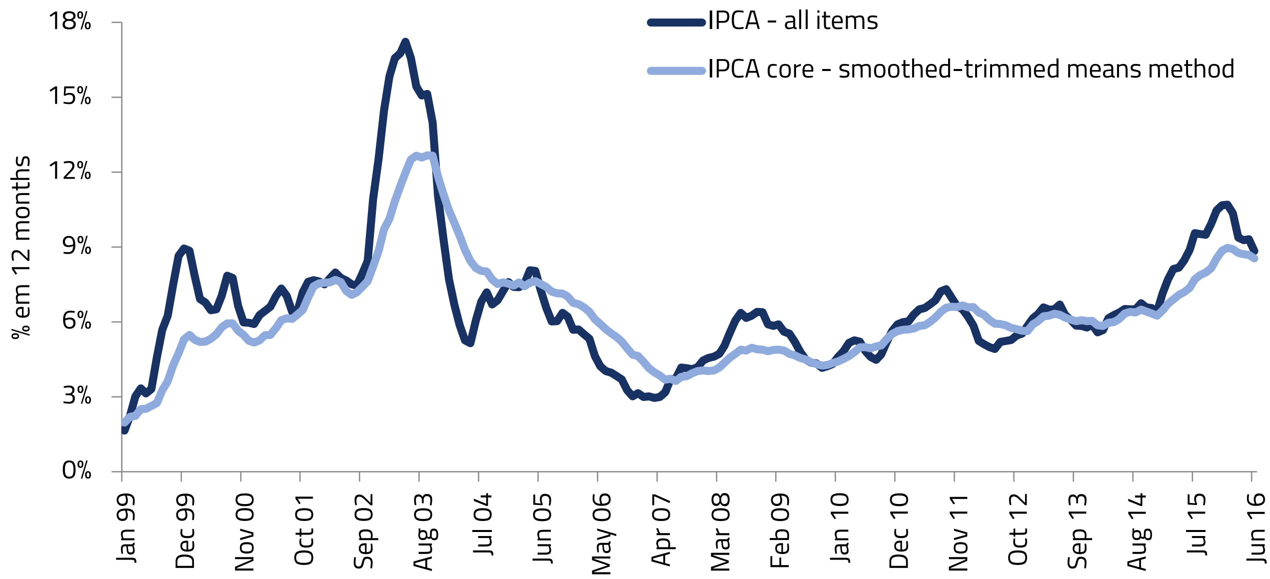
The Brazilian regime considers a headline index as reference, in line with the vast majority of countries that adopt formal targets for inflation. In this index all the items present in the IPCA price survey are considered. In some countries, the target for inflation is established in terms of a "core" index, although the trend is to replace it with headline indexes. Inflation cores are measures that seek to capture the trend of inflation, excluding the variations of more volatile components. A common example of core inflation is the core by exclusion, which removes from the inflation calculation the price behavior of certain items, such as food and petroleum products. Another common form is the core trimmed mean, which excludes from the headline inflation, every month, the items with higher volatility in the period. Regardless of the calculation method, appropriate measures of core inflation must have over the long-term the same trajectory as the headline inflation, except in the cases where the price changes of excluded items are permanent in nature.

15. Why has Brazil decided to adopt a headline index?

In Brazil, the adoption of the headline index was due to two reasons. The first is that, although in the long term the headline and the core inflation tend to converge, in the short term they may differ significantly. The second, and perhaps most importantly, is a matter of transparency and credibility. At the time of the implementation of the inflation targeting regime, besides the need to explain to the population what the new regime meant, the introduction of a new concept of inflation (core), which does not reflect inflation actually occurred for the consumer, could generate a lot of uncertainty. Moreover, the headline index is closer to a welfare concept because it is more representative for measuring the real purchasing power of the consumer. People are not interested in the prices of part of their consumption basket, but in its entirety. A factor of additional caution in the use of these measures derives from the fact that, even among experts in the field, there is controversy as to the merits and demerits of different methodologies for calculating core inflation.

Chart 1 shows the evolution of the headline index of IPCA and the core inflation using the smoothed-trimmed means method.

Chart 1 – Inflation Rate (IPCA) and Core Inflation (up to June 2016)



Sources: IBGE and BCB. SGS 433 and 4466.

More information on core inflation can be obtained at FAQ2 on Price Indices.

16. What happens when the inflation target is not met?

When the target for inflation set by the National Monetary Council is not met, that is, when inflation breaches, above or below, the limits of the tolerance range around the target, the reasons for non-compliance, as well as the actions taken to assure the future convergence of inflation to the targets path are explained by the Central Bank of Brazil (BCB) Governor in an open letter to the Minister of Finance.

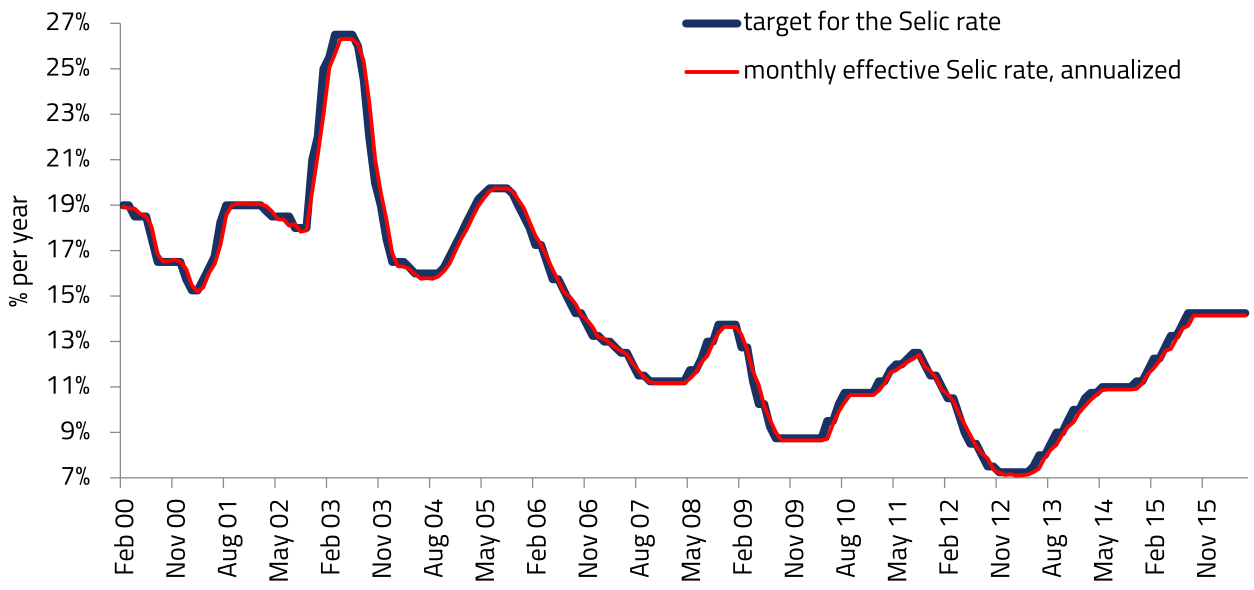
This procedure provides greater transparency and credibility to the process of convergence to the inflation targets. Open Letters were sent regarding the inflation rates of 2001, 2002, 2003 and 2015.

17. What monetary policy instruments are used in the Brazilian inflation targeting?

Most central banks use a short-term interest rate as the main instrument of policy. Likewise, the Brazilian inflation targeting regime uses the Selic rate as the primary instrument of monetary policy. The Selic rate is the average interest rate charged on the daily loans with a maturity of one day (overnight) backed by government securities registered in the Special System of Clearance and Custody (Selic), i.e., the interest rate that balances the market for bank reserves. The Monetary Policy Committee (Copom) sets the target for the Selic rate, and it is up to the open market desk operations of the BCB to keep the effective Selic rate close to the target.

Chart 2**Erro! Fonte de referência não encontrada.** shows the convergence of the effective elic rate[1] to the target set for the Selic rate[2] by the Copom.

Chart 2 – Effective Selic Rate and Selic Rate Target (up to June 2016)



Source: BCB.

[1] SGS 1178

[2] SGS 432

For further details on the Selic and the open market operations, see [FAQ6 on Public Debt Management and Open Market](#).

18. How has inflation evolved since the adoption of inflation targeting regime in Brazil?

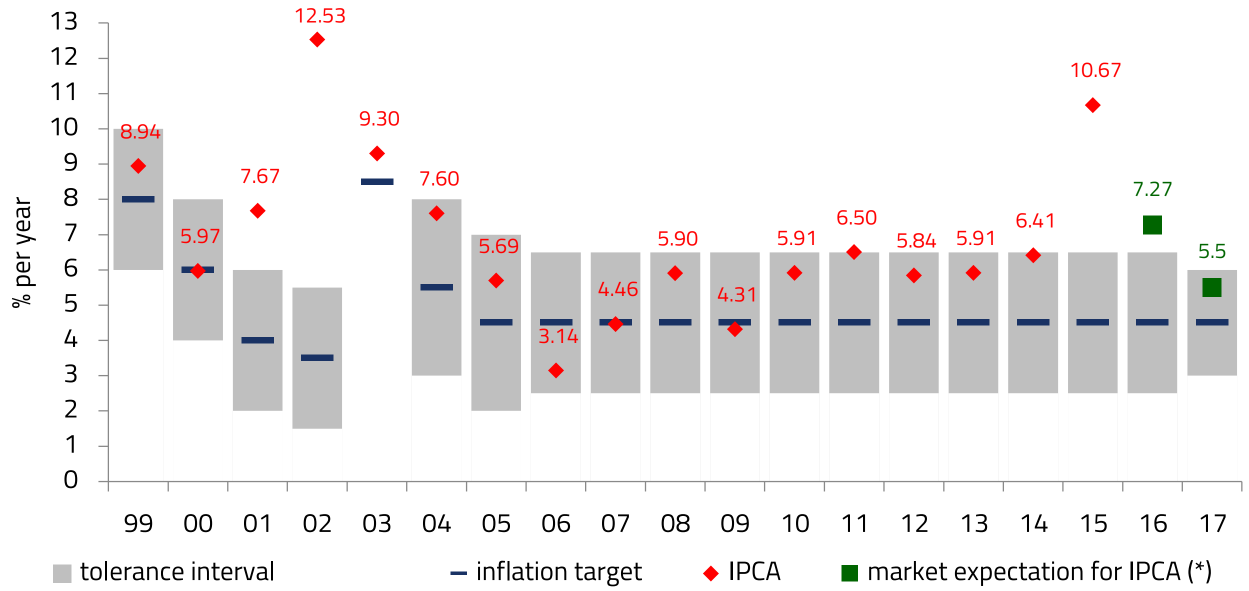
With the introduction of the floating exchange rate regime in January 1999 and the sharp devaluation of the real thereafter, the adoption of the inflation targeting regime in July of the same year contributed to stabilize inflation.

Since the adoption of the inflation targeting regime, actual inflation (measured by the IPCA):

- exceeded the tolerance range in 2001, 2002, 2003 and 2015;
- was above the target, but within the tolerance interval, in 2004, 2005, 2008, and from 2010 to 2014; and
- was below the target, but within the tolerance interval, in 2006, 2007 and 2009.

As shown in Chart 3, at the end of June 2016, the median of the inflation expectations gathered by the Investor Relations and Special Studies Department (Gerin) of the BCB was at 7.27% for 2016 and 5.50% for 2017.

Chart 3 – Targets for Inflation, Tolerance Intervals, Median of the Market Expectations and Effective IPCA (up to 2017)



Source: BCB. (*) Market expectations for 2016 and 2017 as of June 30, 2016.

19. What is the role of the market expectations in the inflation targeting regime?

One of the central objectives of the inflation targeting regime is to anchor market expectations that, in general, drive the process of price formation in the economy. Insofar as the

BCB announces its monetary policy strategy and communicates the assessment of economic conditions, the markets are better able to understand the pattern of response of monetary policy to economic developments and shocks. Thus, the risk premium on financial assets decreases. The monetary policy actions become more predictable to the market in the medium term and inflation expectations can be formed more efficiently and accurately. As soon as the monetary policy gains credibility, the price adjustments tend to be near to the target.

Chart 4 presents the median of the inflation expectations, as measured by the IPCA, for the next 12 months, smoothed, with data extracted from the Market Expectations System, administered by Gerin, which is part of the economic area of BCB. The Market Expectations System is an online web platform, where financial institutions, asset managers, consulting firms and non-financial sector institutions report their expectations for various macroeconomic variables.

Chart 4 – Median of Market Expectations for Inflation over the Next 12 Months - Smoothed (up to June 2016)

Source: BCB.

For details on the collection of inflation expectations by the BCB, see FAQ13 – Market Expectations System.

More information

20. Are there other countries that adopt Inflation Targeting?

Yes. There are many countries that adopt inflation targeting, such as New Zealand, Chile, Canada, Israel, Sweden and Australia.

21. Where can I read more about Inflation Targeting?

The Central Bank of Brazil publishes more information about inflation in the Monetary Policy Committee (Copom) minutes, which are disclosed up to six business days after the end of the meeting. In the minutes, the reasons for the monetary policy decision are explained. The Copom meetings calendar is available at http://www.bcb.gov.br/?SCHEDULE2016.

The quarterly inflation report of the Central Bank of Brazil provides detailed information on all aspects of the target system. This publication presents the most complete panel on the subject, describing in detail the results of the projection exercises of Copom.

The FAQ3 on the Copom and the "Objectives and Background" item in BCB's website provide additional information about the structure of the inflation targeting regime.

Moreover, several technical notes and working papers on the regime of inflation targeting can be found in the Central Bank of Brazil website.

Technical Notes

22 - *Metodologia de Cálculo da Inércia Inflacionária e dos Efeitos do Choque dos Preços Administrados* (in Portuguese)
Paulo Springer de Freitas, André Minella and Gil Riella (Jul/02)

30 - *Regime de Metas para a Inflação: Resenha sobre a Experiência Internacional* (in Portuguese)
Thaís Porto Ferreira and Myrian Beatriz Silva Petrassi (Nov/02)

36 – *Sistema Banco Central de Expectativas de Mercado* (in Portuguese)
André Barbosa Coutinho Marques, Pedro Fachada and Diogo Cogo Cavalcanti (May/03)

Working Papers

50 - Macroeconomic Coordination and Inflation Targeting in a Two-Country Model
Eui Jung Chang, Marcelo Kfoury Muinhos and Joanílio Rodolpho Teixeira (Sep/02)

53 - Inflation Targeting in Brazil: Lessons and Challenges
André Minella, Paulo Springer de Freitas, Ilan Goldfajn and Marcelo Kfoury Muinhos (Nov/02)

59 - *Os Preços Administrados e a Inflação no Brasil* (in Portuguese)
Francisco Marcos R. Figueiredo and Thaís Porto Ferreira (Dec/02)

63 - Optimal Monetary Rules: The Case of Brazil
Charles Lima de Almeida, Marco Aurélio Peres, Geraldo da Silva e Souza and Benjamin Miranda Tabak (Feb/03)

76 - Inflation Targeting in Emerging Market Economies
Arminio Fraga, Ilan Goldfajn and André Minella (Jun/03)

77 - Inflation Targeting in Brazil: Constructing Credibility under Exchange Rate Volatility
André Minella, Paulo Springer de Freitas, Ilan Goldfajn and Marcelo Kfoury Muinhos (Jul/03)

83 - Does Inflation Targeting Reduce Inflation? An Analysis for the OECD Industrial Countries
Thomas Y. Wu (May/04)

100 - Targets and Inflation Dynamics

Sérgio A. L. Alves and Waldyr D. Areosa (Oct/05)

109 - The Recent Brazilian Disinflation Process and Costs

Alexandre A. Tombini and Sérgio A. L. Alves (Jun/06)

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Afonso S. Beviláqua, Mário Mesquita and André Minella (Jan/07)

140 – Inflation Targeting, Credibility and Confidence Crises

Aloísio Araújo and Rafael Santos (Aug/07)

271 – Optimal Policy when Inflation Target is not Optimal

Sérgio A. Lago Alves (Mar/12)

324 – Inflation Targeting and Financial Stability: a Perspective from the Developing World

Pierre-Richard Agénor e Luiz A. Pereira da Silva (Sep/13)

347 - Inflation Targeting and Banking System Soundness: A Comprehensive Analysis

Dimas M. Fazio, Benjamin M. Tabak e Daniel O. Cajueiro (Feb/14)

Click here for the full list of BCB's working papers.

22. Where can I obtain updated data?

The data series required for updating the graphics and tables here exposed can be downloaded from "time series" available at the BCB webpage at the internet. Select by subject > Economic activity or Monetary indicators.

The BCB also provides worksheets in Excel with key short-term economic indicators. The prices and monetary indicators are available in Chapter I - Economic Outlook and Chapter III - Financial and Capital Markets.