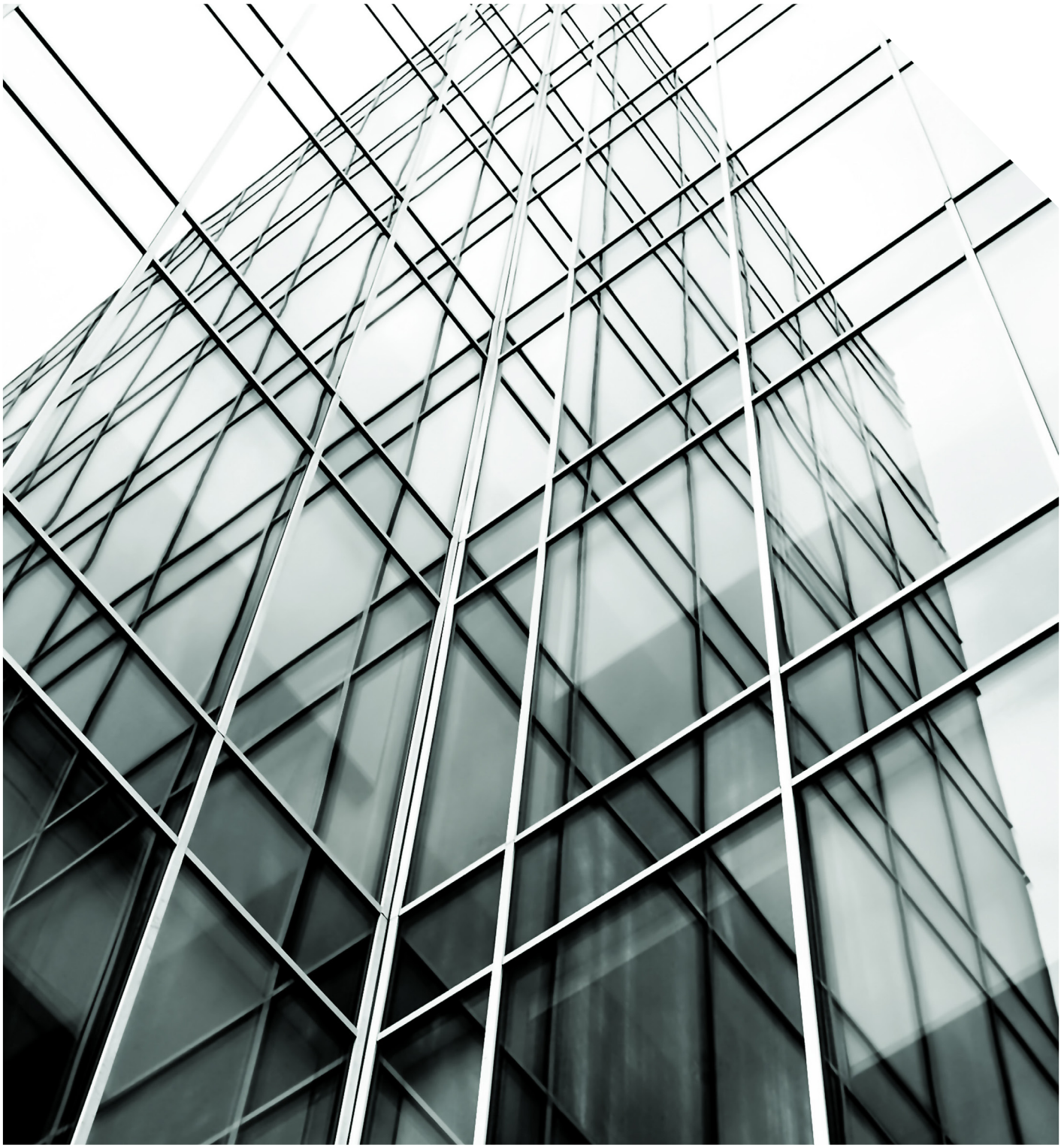

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Inflation Report

Volume 19 | Number 4 | 2017 December

BANCO CENTRAL DO BRASIL

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Inflation Report

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Statistical conventions

...	data not available.
-	nil or non-existence of the event considered.
0 ou **0.0**	less than half the final digit shown on the right.
*****	preliminary data.

Hiphen between years indicates the years covered, including the first and the last year.
A bar (/) between years (1970/1975) indicates the average of the years covered, including the first and the last year or even crop or agreement year, when mentioned in the text.

Occasional discrepancies between constituent figures and totals as well as percentage changes are due to rounding.

There are no references to sources in tables and figures originated in the Banco Central do Brasil.

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Principles for the Conduct of Monetary Policy in Brazil

Mission and objectives

The Banco Central do Brasil (BCB) has as mission to ensure the stability of the currency's purchasing power and a solid and efficient financial system. The compliance with the task of ensuring price stability is achieved by means of the inflation targeting framework, with inflation targets set by the National Monetary Council.

The experience, both domestic and international, shows that the best contribution of monetary policy to sustainable economic growth, low unemployment and improvement in people's living conditions is to keep inflation low, stable and predictable.

The economic literature indicates that high and volatile inflation rates generate distortions that lead to increased risks and negatively affect investment. These distortions shorten the planning horizons of families, businesses and governments, and erode business confidence. High inflation rates subtract the purchasing power of wages and transfers, with negative repercussions on household's confidence and consumption. Moreover, they produce inefficient price dispersion and reduce the informational value from prices that contributes to the efficient allocation of resources in the economy.

High and volatile inflation has also regressive distributive effects. The less favored groups of the population, which generally have more restricted access to instruments to protect them from the loss of the currency's purchasing power, benefit the most from price stability.

In short, high inflation rates reduce potential economic growth, affect job creation and income, and worsen income distribution.

Implementation

Monetary policy impacts the economy with long, variable and uncertain lags, usually estimated to extend up to two years. As a result, there is substantial uncertainty associated with inflation projections in the relevant horizon for the conduct of monetary policy, which arises naturally from the incidence of favorable and unfavorable shocks to the economy over time. It is thus expected that, even under appropriate policy, realized inflation will fluctuate around target. The Monetary Policy Committee (Copom) should seek to conduct monetary policy so that inflation projections point to inflation converging to the target. Therefore, it is genuine that monetary policy is carried out in a forward-looking way.

The inflation targeting framework in Brazil is flexible. The horizon that the BCB sees as appropriate for the return of inflation to the target depends on both the nature of the shocks that affect the economy and their persistence.

The BCB believes that a clear and transparent communication is essential for monetary policy to achieve its objectives efficiently. Thus, the BCB regularly publishes evaluations of the economic factors that determine the inflation trajectory, as well as the potential risks to this trajectory. The Copom Statements and Minutes, and the Quarterly Inflation Report are key vehicles in communicating these assessments.

Inflation Report

The inflation projections are presented in scenarios, and are conditional on assumptions for some economic variables. Traditionally, the assumptions refer to the paths for the exchange and Selic rates throughout the projection horizon. These values are usually extracted from the Focus survey, conducted by the BCB with independent analysts, or are assumed constant. The reported scenarios are based on a combination of those assumptions. Alternative scenarios may also be presented. It is important to stress that these scenarios are part of the quantitative tools used to guide Copom's monetary policy decisions, and that their assumptions do not constitute and should not be seen as the Committee's forecasts for the future behavior of those variables.

The conditional inflation projections incorporate probability intervals that highlight the degree of uncertainty associated with them. Inflation projections depend not only on assumptions about the interest rate and the exchange rate, but also on a set of assumptions about the behavior of exogenous variables. The Copom uses a wide range of models and scenarios, with conditioning assumptions associated with them, to guide its monetary policy decisions. By reporting some of these scenarios, the Committee seeks to enhance the transparency of monetary policy decisions, contributing to its effectiveness in controlling inflation, which is its primary objective.

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Executive summary

The recent path of the main economic activity indicators is consistent with a gradual recovery of the Brazilian economy.

In the third quarter of 2017, Gross Domestic Product (GDP) recorded the third consecutive quarter-on-quarter (QoQ) increase. On the supply side, the economic performance reflected the positive evolution of industrial activity, especially in manufacturing, and the third consecutive increase in the services sector – which has the greatest weight among the supply components – in part, because of the expansion of trade and transportation activities, more correlated with the industrial sector. Of note, on the demand side, were the significant expansion in household consumption and the growth of Gross Fixed Capital Formation (GFCF), representing the first QoQ expansion since 2013Q3.

The recovery in consumption continued to benefit from real income gains, with a particular impact of the reduction of inflation on wage purchasing power; from the reaction in the credit for individuals, reflecting the effect of the basic interest rate cuts and the advanced stage of the household deleveraging process; from the gradual recovery of consumer confidence; and from better labor market conditions.

In fact, signs of employment reaction remain consistent with the process of gradual activity recovery. The unemployment rate fell again QoQ in the quarter ending in November, and, during the same period, there was net creation of 146.5 thousand formal jobs, in comparison with the destruction of 148 thousand jobs in the same period of 2016.

The global outlook has been favorable, as global economic activity continues to recover, without exerting excessive pressure on financial conditions in advanced economies. This supports risk appetite towards emerging economies.

Risks remain that frustration of expectations regarding the continuation of reforms and necessary

adjustments in the Brazilian economy may affect risk premia and increase the path for inflation over the relevant horizon for the conduct of monetary policy. This risk intensifies in the case of a reversal of the current benign global outlook for emerging economies.

However, the Brazilian economy shows greater capacity to absorb occasional setbacks in the global economy given its robust balance of payments and low inflation environment, anchored expectations and prospects of economic recovery.

Indeed, the country's external transactions evolved favorably in 2017, with the current account deficit reaching 0.3% of GDP in the year to November, compared with 1.1% of GDP in the same period of 2016. In addition, it is worth noting the improvement, during this year, of the conditions of access to credit in the international market for companies in Brazil.

Inflation expectations from the Focus survey, measured by changes in the Extended National Consumer Price Index (IPCA), stand at 2.8 percent for 2017. Expectations for 2018, 2019 and 2020 remain around 4.0 percent, 4.25 percent and 4.0 percent, respectively.

The baseline inflation scenario has evolved, to a large extent, as expected. Inflation developments remain favorable, with various measures of underlying inflation running at comfortable or low levels. This includes the components that are most sensitive to the business cycle and monetary policy.

Nonetheless, there are risks that possible second-round effects from the favorable food price shock and low current levels of industrial goods inflation, and the possible propagation, through inertial mechanisms, of low inflation levels may lead to a lower-than-expected prospective inflation trajectory.

Regarding the conditional inflation projections, under a scenario with interest rate and exchange rate paths extracted from the Focus survey, projections stand around 2.8 percent for 2017 and 4.2 percent for 2018. In the same scenario, inflation projections for 2019 and 2020 stand around 4.2 percent and 4.1 percent, respectively.

The Copom judges that economic conditions prescribe accommodative monetary policy, i.e., interest rates below the structural level. The

Committee emphasizes that the process of reforms and necessary adjustments in the Brazilian economy contributes to the reduction of its structural interest rate. The Committee will continue to reassess estimates of this rate over time.

The Copom highlights that the evolution of the baseline scenario, in line with expectations, and the stage of the monetary easing cycle made it appropriate to reduce the Selic rate by 0.5 percentage point at its December meeting. Regarding the next meeting, provided the Committee's baseline scenario evolves as expected, and taking into account the stage of the monetary easing cycle, at this time the Copom views an additional moderate reduction of the pace of easing as appropriate. The Committee views this guidance as more susceptible to changes in its baseline scenario and balance of risks than in the previous meetings. Going forward, the Committee judges that the current stage of the cycle recommends caution in conducting monetary policy. The Copom emphasizes that the monetary easing process will continue to depend on the evolution of economic activity, the balance of risks, possible reassessments of the extension of the cycle, and on inflation projections and expectations.

1 Economic outlook

This chapter of the Inflation Report analyzes the recent evolution of the economic outlook, considering the international and domestic scenarios, as well as the prospects for the evolution of the country's economy in the coming quarters.

The assessment of the international scenario comprises the status of the major advanced and emerging economies, with emphasis on aspects that tend to influence the Brazilian economy, especially the indicators for inflation, activity and performance of monetary authorities.

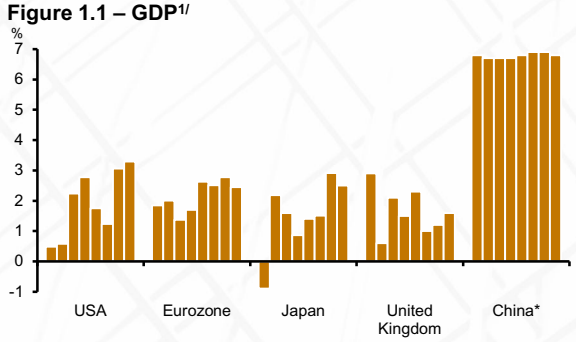
The domestic outlook analysis comprises the major drivers of economic activity, seen from the point of view of national accounts as well as from the point of view of the trajectory of the most frequent and timely sectorial indicators. Central aspects are assessed, especially those associated to the movements in the labor market, to the evolution of credit markets, and to the performance of the country's public accounts and external accounts. The final section of this chapter analyzes the behavior of inflation and market expectations, taking into account the trajectories of the main price indicators.

1.1 External scenario

The trajectory of activity indicators in major countries remains favorable, as the global economic activity has been recovering with no pressures on financial conditions of advanced economies. On one hand, this behavior ratifies the prospects for continuation of activity expansion during the next year. On the other hand, it requires a more intense monitoring of prices evolution and risks associated with an occasional reaction in inflation rates.

GDP evolution in the third quarter of the year followed distinct trajectories in major economic areas, with a quarter-on-quarter (QoQ) deceleration

Figure 1.1 – GDP[1/]



1/ QoQ saar. Last: Q3 2017.
* China: %Q/Q-4
Source: Thomson Datastream

in the Euro Area, Japan and China, and acceleration in the USA and United Kingdom.

The USA GDP increased 0.8 percent in the quarter, the sharpest QoQ expansion since the 2014Q3, reversing the expectations that climate phenomena in the Southern region would negatively affect activity in the country. It should be highlighted the performance of the Gross Fixed Capital Formation, reinforcing the optimistic expectations for the USA economy trajectory in the next year.

In the Euro Area, the expansion of the quarterly GDP reached 0.6 percent, representing the eighteenth consecutive increase in this basis of comparison, with special performances from the German and Italian economies.

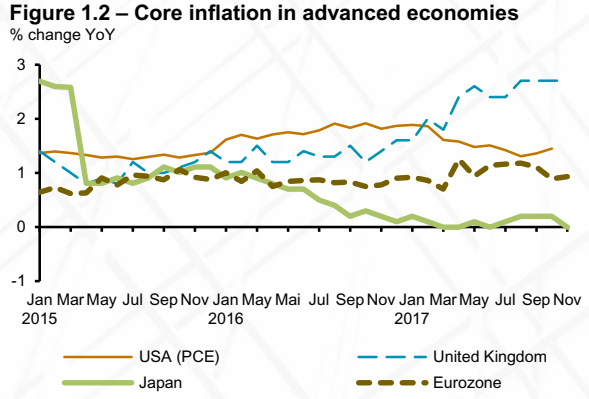
The Japanese economy grew 0.6 percent in the quarter, the seventh consecutive quarterly increase, the longest sequence of positive results since 2001. It is worth noting that the deceleration registered in the period was mostly driven by the retraction in consumer spending and public investment, in contrast with the positive contribution of the external sector, in a context of growing demand from the country's major commercial partners.

In China, GDP's inter-annual expansion remained significant in the third quarter of 2017, although in a lower level than those recorded in the two precedent quarters. In accordance with the country's process of economic restructuring, production of the secondary sector decelerated in relation to the second quarter, whereas the tertiary sector showed greater dynamism.

GDP growth in the United Kingdom showed slight acceleration in the third quarter of the year, confirming the economy's loss of momentum in 2017, in a context of depreciation of the sterling pound and decreases in real wages. Additionally, the slow evolution of negotiations related to Brexit continues to impose significant uncertainty over the business environment and to restrict investments.

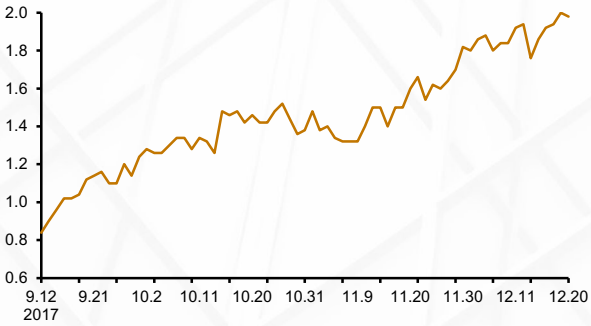
Despite the continued growth of the global economy, annual rates of inflation remained at a low level in advanced economies, as in the previous quarter. The exception remained the United Kingdom, where twelve-month inflation hit 3.1percent in November. The underlying inflation measures in these economies remained subdued, with little change over the second

Figure 1.2 – Core inflation in advanced economies



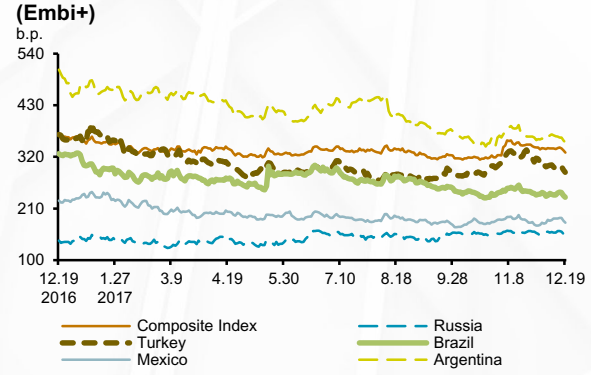
Source: Thonsom Datastream

Figure 1.3 – Implicit number of increases in Fed Funds up to December 2018



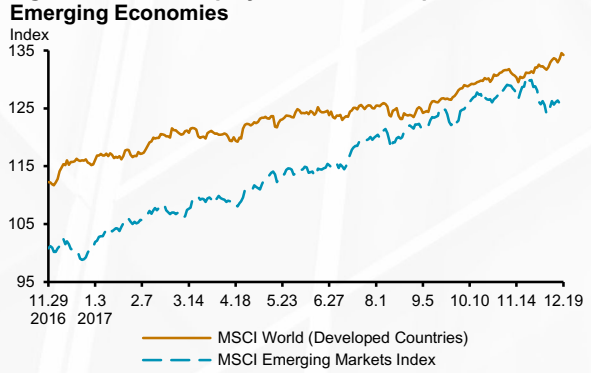
Source: Bloomberg

Figure 1.4 – Emerging Markets Bond Index Plus (Embi+)



Source: Thomson Reuters

Figure 1.5 – MSCI Equity Indices: Developed and Emerging Economies



Source: Thonsom Datastream

quarter, despite persistent tightening in the labor markets of the USA, Euro Area and Japan.

This environment of global economic growth, together with low inflation levels in advanced economies, allows the maintenance of the gradual process of monetary policy normalization in the USA, led by the Federal Open Market Committee (FOMC) of the Federal Reserve (Fed). In this regard, the slow process of reducing the Fed's balance began in October, as scheduled. In this direction, the European Central Bank announced a 50 percent reduction in the monthly acquisition of assets, to begin in January 2018, with prospects to endure up to September 2018. As of yet the Bank of Japan does not indicate a reduction in the monetary easing in force, as inflation core measures and inflation expectations remain low.

The scenario of acceleration in economic growth, low inflation, low interest rates, and the prospects that the on-going monetary tightening in the USA and Europe will gradually continue, tends to benefit the emerging economies, although the appetite for risk has been edging down in the recent months. Partially influenced by the marginal tightening of monetary policy in advanced economies, stock exchanges behaved differently in most emerging economies, in contrast with the consistent valuation occurred until mid-September. In this context, sovereign risk indicators started to show divergent variations, reversing a downward trend observed in the third quarter of the year.

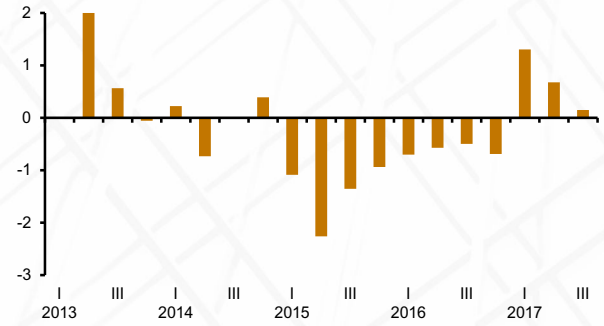
In short, since last Inflation Report the global economy sustained the positive momentum towards growth, whereas inflation rates remained low in major advanced economies. The monetary policies in these economies may continue accommodative for an additional time, as long as inflation remains low. There are, however, risks of asset prices corrections if a more robust activity expansion translates into higher inflation rates in the advanced economies.

1.2 Domestic scenario

Economic activity and the labor market

The economic activity in the country remains in a trajectory of gradual recovery, as demonstrated by the three consecutive QoQ GDP increases. Taking into account this context and the positive prospects for

Figure 1.6 – GDP[1/]
Quarter/Previous Quarter
% change



Source: IBGE
1/ Seasonally adjusted data.

Table 1.1 – Gross Domestic Product
Quarter/previous quarter
Seasonally adjusted

% growth

	2016		2017		
	III Q	IV Q	I Q	II Q	III Q
GDP at market prices	-0.5	-0.7	1.3	0.7	0.1
Crop and livestock	1.2	2.7	12.9	-2.3	-3.0
Industry	-1.5	-1.2	1.2	-0.4	0.8
Services	-0.6	-0.7	0.3	0.8	0.6
Households consumption	-0.3	-0.4	0.2	1.2	1.2
Government consumption	-0.4	-0.1	-0.1	-0.1	-0.2
Gross fixed capital formation	-2.9	-1.7	-0.6	0.0	1.6
Exports	-3.6	-0.4	5.7	1.2	4.1
Imports	-5.1	3.8	1.9	-3.4	6.6

Source: IBGE

the continuity of this recovery, projections for GDP growth in 2017 and 2018 were updated, translating into a more favorable outlook, as described in a box herein appended.

National accounts data released in December by the Brazilian Institute of Geography and Statistics (IBGE) incorporated important revisions regarding the GDP expansion in the first quarter (from 1.0 percent to 1.3 percent) and in the second quarter (from 0.2 percent to 0.7 percent), leading to increases in the accumulated GDP for the first half of the year and in the carry-over to 2017 (from 0.5 percent to 1.0 percent).

GDP expansion reached 0.1 percent in the third quarter over the previous quarter (seasonally-adjusted data). This performance confirmed, on the supply side, the positive evolution of industrial activity, especially in manufacturing, and the third consecutive increase in the services sector – which has the greatest weight among the supply components – partially due to the expansion in trade and other services, more correlated with the industrial sector.

On the demand side, the consistent contribution of domestic demand is of major significance. Household consumption grew 1.2 percent, following an expansion of the same magnitude in the previous quarter, when it was still under the influence of the authorized withdrawals from the Employment Compensation Fund (FGTS) accounts. The quarter-over-quarter (QoQ) evolution in consumption demonstrates both the growth in household purchasing power, driven by the decline in inflation, and the effects derived from better conditions in the labor and credit markets. Of note, on the demand side, the first QoQ expansion in the Gross Fixed Capital Formation (GFCF) since the third quarter of 2013.

More recent statistics incorporating data for the fourth quarter support the view that the economic recovery shall continue in a gradual pace. In this direction, it confirms the stability of industrial output in the quarter ended in October over the quarter ended in July, in which it had already grown 1.9 percent over the previous quarter, according to seasonally-adjusted data from the Monthly Industrial Survey – Physical Production (PIM-PF) from IBGE. The deceleration reflected a decline of 0.7 percent in the extractive industry and an expansion of 0.7 percent in manufacturing, which registered growth in fifteen of the twenty-three activities surveyed. This was a performance sustained by the dynamism of durable

goods, especially automotive vehicles, trailers and bodyworks (5.9 percent) and IT equipment, electronics and optical products (3.7 percent).

As highlighted in a box herein appended[1], the resumption of the industrial sector in the year is consistent with a cyclical economic activity recovery, sustained mainly by the dynamism of the domestic market.

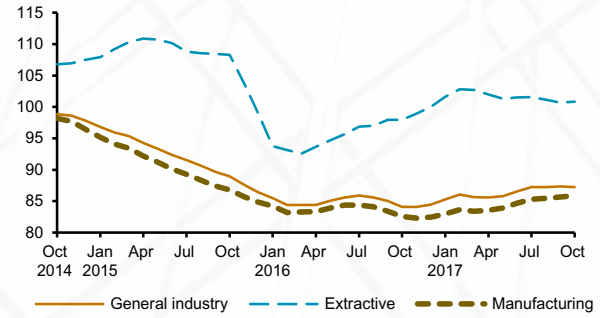
Qualitative indicators signal that stocks have been adjusted and that there is confidence in recovery, conditions that benefit the maintenance of industrial expansion. Stocks in manufacturing, as calculated by FGV declined 6.8 points in the quarter ended in November, compared to the quarter ended in August, reaching 102.2 points[2], considering seasonally-adjusted data. This trajectory reflected decreases in all categories, especially in capital goods (6.4 points) and intermediate goods (4.5 points).

The Industrial Confidence Index (ICI)[3] reached 95.5 points in the quarter ended in November, a 4.7 points increase when compared to the quarter ended in August, according to seasonally-adjusted data from IBGE. This growth in confidence in the quarter was spread in all usage categories, especially in the segments of non-durable goods (8.4 points), durable-goods (6.5 points) and capital goods (4.7 points).

The services sector showed a consistent recovery in the three first quarters of 2017, according to National Accounts data. There was a QoQ growth of 0.6 percent in the third quarter, especially reflecting expansions in trade (1.6 percent), in line with the positive performance of household consumption and real estate and rental services (0.9 percent).

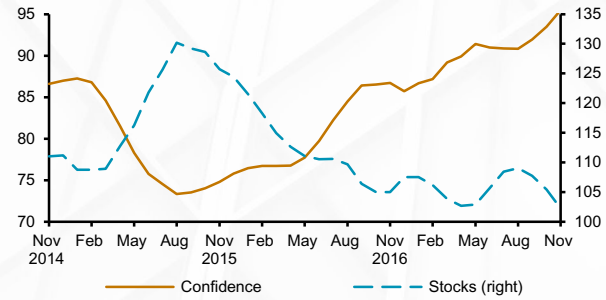
Data from the Monthly Services Survey (PMS) suggest, however, that activity indicators in this sector are still oscillating. Thus, the services sector declined 1.6 percent in the quarter ended in October over the previous quarter, when it had grown 0.9 percent in the same basis of comparison. Of note, transportation services registered a 0.9 percent expansion in the quarter[4].

Figure 1.7 – Industrial production [1/]
Total (3MMA)
2012 = 100



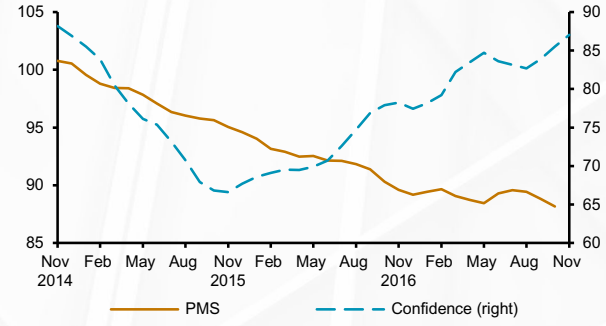
Source: IBGE
1/ Seasonally adjusted data.

Figure 1.8 – Confidence and Stocks Indexes[1/]
Manufacturing industry (3MMA)
Points



Source: FGV
1/ Seasonally adjusted data.
Stock index calculated from 100 to 200 – released stock index.

Figure 1.9 – Services Volume and Confidence Indexes[1/]
Services (3MMA)
2014 = 100
Points



Source: IBGE, FGV
1/ Seasonally adjusted data.

1/ Please see herein appended box "2017 industry growth analysis ", on page 25.
2/ A 200 points complement of the original index released by FGV. Values greater than 100 points indicate stocks higher than otherwise planned.
3/ Values higher than 100 points indicate a feeling of optimism.
4/ It should be observed that, as demonstrated in the box "Comparability Analysis between Service Indicators", appended to the March 2017 Inflation Report, activities surveyed in the PMS are equivalent to 30 percent of the value that services add to GDP, a broader measure of the sector.

Notwithstanding the divergence between indicators, the evolution of confidence suggests a favorable outlook for the services sector. In fact, the Services Confidence Index (ICS) grew 4.4 points in the quarter ended in November, compared with that ended in August, according to seasonally adjusted FGV data, reflecting growth in indicators related to the current situation (4.6 points) and expectations (4.1 points).

On the demand side, it is worth noting that growth in household consumption remains on a level similar to that registered in the second quarter of this year. This process of recovery happens in an environment of improved labor and credit markets (partially due to the interest rate cycle), lower level of household leverage and, mainly, declining inflation.

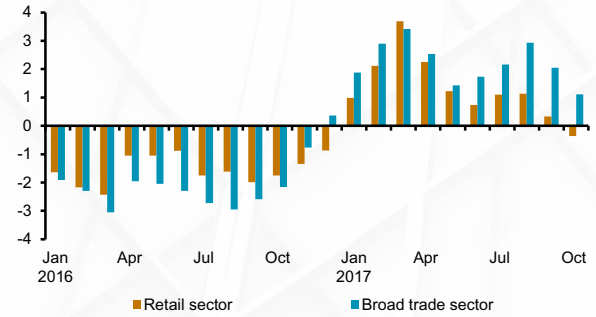
After two quarters of significant consumption expansion, a more moderate growth is expected in the fourth quarter. In this direction, broad retail sales decelerated, registering an increase of 1.1 percent in the quarter ended in July over the previous quarter, when it had previously expanded 2.2 percent in the same basis of comparison, according to seasonally-adjusted IBGE data. Notwithstanding this deceleration, sales increased in seven of the ten segments surveyed.

Similarly, sales of automobiles and light commercials increased 2.3 percent QoQ in the quarter ended in November, according to the National Federation of Automotive Vehicles Distribution (Fenabrave). The Serasa-Experian Index for Commercial Activity, nationwide and based on the monthly consultations addressed to Serasa archives by commercial companies, grew 2.4 percent in the same period.

The trajectories of the Consumer Confidence Index (ICC) and the Commerce Confidence Index (Icom), both from FGV, indicate positive prospects for the sector in the coming months. Both indicators registered sharp QoQ growth in the quarter ended in November, surpassing the average levels of the last five years.

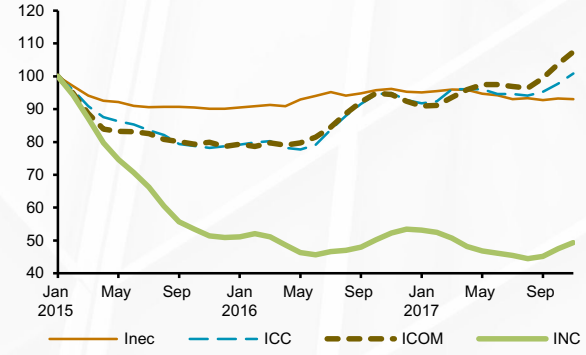
GFCF registered a QoQ recovery in the third quarter of the year. It should be stressed that the 1.6 percent increase in comparison with the previous quarter represents the first expansion after fifteen quarters. The recovery of investments reflected the ascending movement in imports and in the production of capital goods, a trend spread among major categories. Of note, the recent evolution of the input production

Figure 1.10 – Retail sales[1/]
3-Month Period over previous 3-Month Period
% change



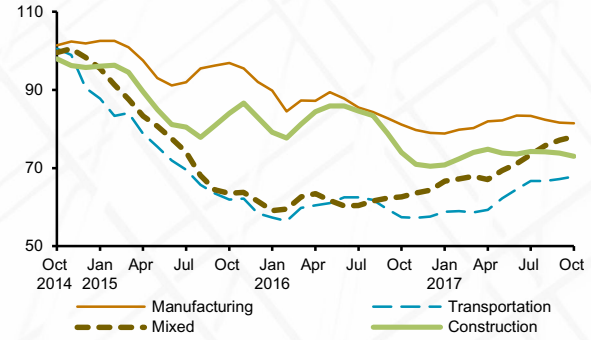
Source: IBGE
1/ Seasonally adjusted data.

Figure 1.11 – Confidence indexes
3MMA



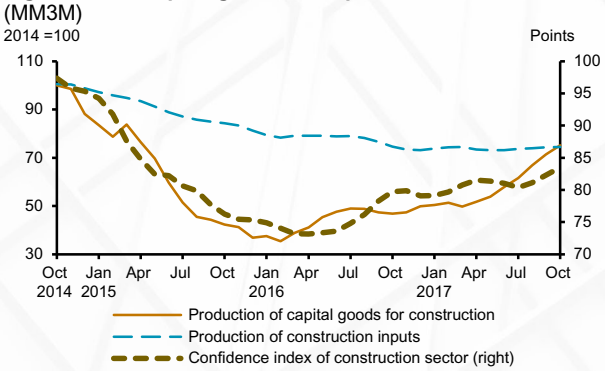
Sources: ACSP, CNI and FGV

Figure 1.12 – Capital goods production[1/]
2014 = 100 (MM3M)



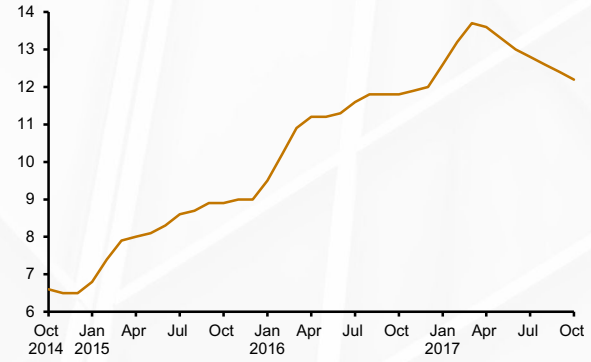
Source: IBGE-PIM
1/ Seasonally adjusted data.

Figure 1.13 – Capital goods absorption[1/]
(MM3M)



Sources: IBGE-PIM and Funcex
1/ Seasonally adjusted data.

Figure 1.14 – Unemployment rate
%



Source: IBGE (Continuous National Household Survey)

for the construction sector and related capital goods. This statistics, together with the behavior of the Construction Entrepreneurs Confidence Index (Icec), suggest that the sector, which is responsible for more than half of total investments in the economy, starts to react after the significant retraction cycle observed in the previous years.

As already mentioned in other reports, the effective recovery of investment is partially driven by the pace of the deleveraging process of nonfinancial companies, a trend that may be further intensified by the cycle of decline in interest rates over the next quarters. Additionally, the consolidation of economic activity recovery and the favorable behavior of financial and risk indicators should also contribute for investment recovery.

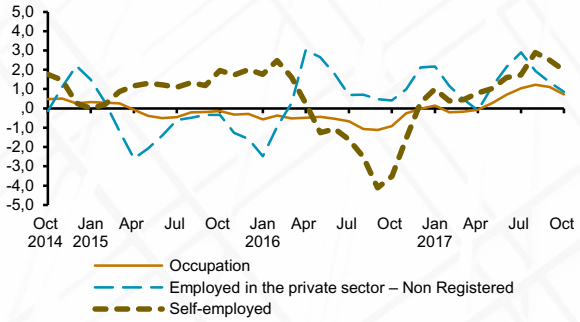
In the short term, however, there is no forecast for a stronger reaction in investments, unlike other periods of economic recovery that followed the end of recession cycles. This perspective is partially explained by the level of uncertainties in the economy and the impact of slack in the production factors, reflected in the low utilization of industrial capacity and the high level of unemployment.

In this context, the Installed Capacity Utilization Level Index (Nuci) of the manufacturing sector reached 74.1 percent in the quarter ended in November and 74.3 percent in the previous quarter, considering seasonally-adjusted data from the Manufacturing Industry Survey of FGV. These figures reflect Nuci decreases in the segments of durable consumer goods (0.6 percentage points) and non-durable consumer goods (0.1 percentage points), as well as increases in the segments of capital goods (3.0 percentage points) and intermediate goods (0.3 percentage points)[5].

The unemployment rate, released by the Household National Sample Survey (PNAD) from IBGE reached 12.2 percent in the quarter ended in October 2017, 12.8 percent in the quarter ended in July 2017 and 11.8 percent in the quarter ended in October 2016. The QoQ decrease mostly reflected the recovery of employed population among non-registered workers and self-employed workers, segments where informal working conditions prevail.

5/ As discussed in box "Dynamic relations between Nuci and the Capital Goods Investment in Brazil", appended to the March 2017 Inflation Report, a low level in Nuci configures a factor of influence, but not impediment, for the gradual recovery in investments during the next quarters.

Figure 1.15 – Employed population[1/]
Quarter over previous quarter
% change



Source: IBGE (Continuous National Household Survey)
1/ Seasonally adjusted data.

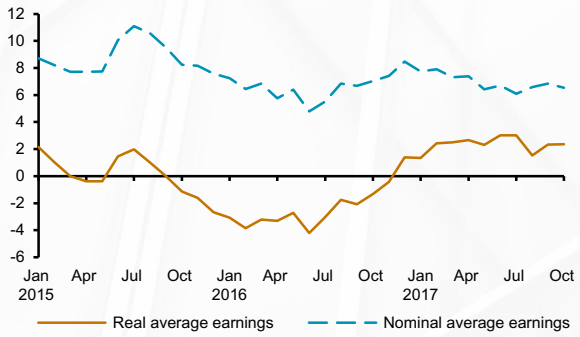
Table 1.2 – Formal employment

New jobs (thousands)

	2016		2017	
	Quarter[2/]	Year[3/]	Quarter[2/]	Year[3/]
Total	-148.0	-792.3	146.4	217.4
Manufacturing industry	10.1	-139.1	71.8	109.5
Commerce	17.3	-252.4	63.1	-50.6
Services	-48.5	-223.2	43.0	94.1
Building	-83.2	-227.8	-3.4	-40.1
Agriculture and livestock	-36.1	50.9	-24.3	93.6
Public utilities	-2.7	-7.2	-2.4	-2.8
Others[1/]	-4.9	6.5	-1.2	13.6

Source: Ministry of Labour
1/ Includes mining, public administration and others.
2/ Quarter ended in October.
3/ Accumulated in the year until October.

Figure 1.16 – Real and nominal earnings
Quarter/Same quarter of previous year
% change



Source: IBGE (Continuous National Household Survey)

According to an analysis presented in a box appended herein[6], this increase in employed population is related to an increase in the net flow of individuals from the unemployed category to the employed category, during the second and third quarters of 2017, as well as the reduction in the net flow of individuals out of the workforce to unemployment. That is to say that even in relation to informal categories, the decline in the unemployment rate represents an improvement in the employment conditions of individuals.

Although the decrease in the unemployment rate reflects an increase in informal jobs, a significant reversal in the dynamics of job creation has been observed in the formal labor market. In this context, according to the General File of Employed and Unemployed Persons from the Ministry of Labor (MTb), 146.4 thousand formal jobs were created in the quarter ended in October, compared to a destruction of 148.0 thousand jobs in the same period of 2016. Of note, the increases in manufacturing (71.8 thousand) and commerce (63.1 thousand).

In relation to workers' income, the disinflationary process in course continues to benefit their purchasing power. According to data from the Continuous National Household Sample Survey (PNAD Contínua), the average real wage of all segments increased 2.5 percent in the quarter ended in October, in comparison to the same period of 2016. Overall wages increased 4.2 percent, in the same basis of comparison.

The consolidation of economic recovery and the recent structural changes in labor legislation tend to have positive impact on the current process of employment recovery, favoring additional reductions in the unemployment rate.

On the other hand, as discussed in recent boxes[7], there seems to be room for a cyclical recovery of labor productivity and a trend for slower growth in the employed population and, consequently, in the pace of decline of the unemployment rate.

Credit

The balance of credit operations of the National Financing System grew 0.1 percent in the quarter

6/ Please see box Transition rates and recent developments in the labor market on page 29 of this Report.
7/ In this regard, please see boxes "Considerations on the evolution of labor productivity and the level of employed population", appended to the March 2017 Inflation Report and "Recent evolution of labor productivity", appended to the September 2017 Inflation Report.

Figure 1.17 – Credit outstanding
% change YoY

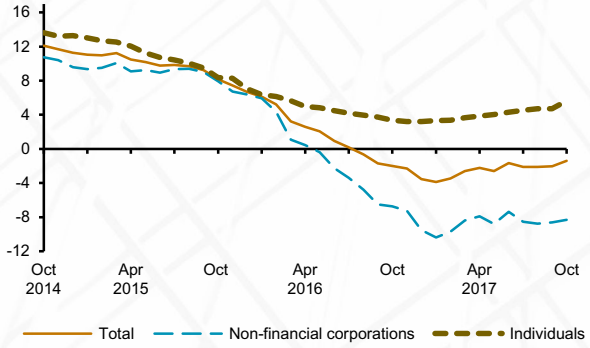


Figure 1.18 – New transactions seasonally adjusted
3 months average – R$ billions

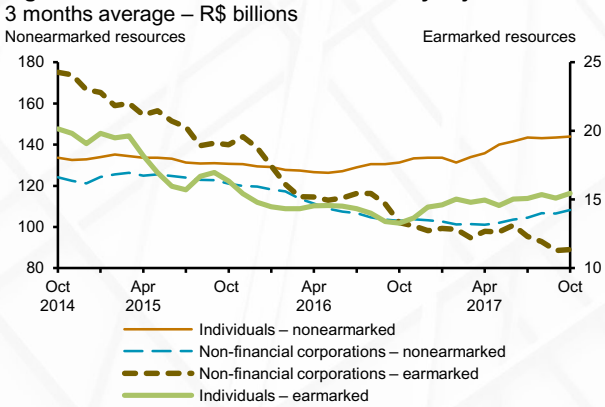


Figure 1.19 – Interest rates

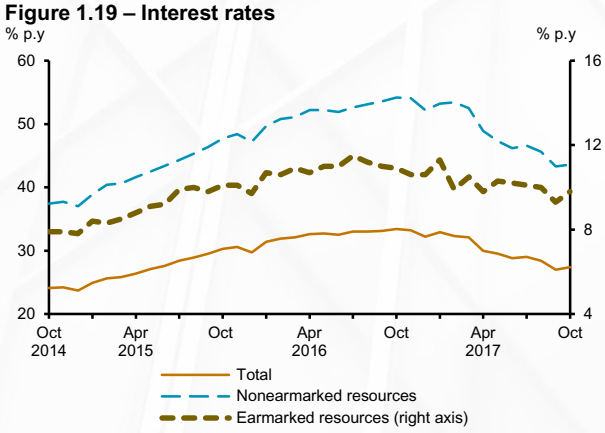
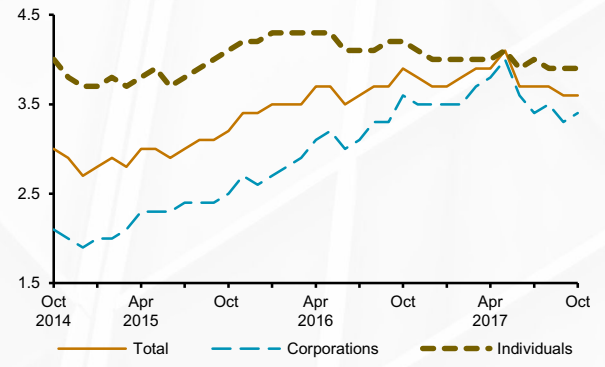


Figure 1.20 – Delinquency rates[1/]
%



1/ Credit operations overdue for more than 90 days.

ended in October, with changes of 1.7 percent in the credit for individuals segment and -1.7 percent in the corporate segment. In a YoY basis, credit operations for individuals continue to show greater dynamism, in a scenario of improvements in the labor market, inflation decline, household deleveraging and greater consumer optimism. Regarding the recent evolution in household credit, the highlights were the increase in the balance of loans in the segments of payroll-deducted loans, real estate loans and credit card loans. The corporate credit portfolio showed sharp declines when considered the same basis of comparison, despite the slower pace of retraction in operations with non-earmarked resources. It is worth noting that the reduction in corporate credit operations has been partially offset by the increase in funding obtained through capital markets, considering both domestic and external emissions[8].

Lending, considering seasonally-adjusted data, increased 1.5 percent in the quarter ended in October. There were increases of 0.2 percent in lending operations for individuals (non-earmarked, 0.2 percent; earmarked, 2.6 percent) and 1.9 percent in lending operations for corporations. Overall, there was a 3.6 percent increase in lending with non-earmarked resources. It is worth noting that the QoQ trajectory of corporate lending is compatible with the gradual economic recovery registered during the year.

The average interest rate of credit operations reached 27.4 percent per year in October, decreasing 1.6 percentage points in the quarter, in line with the monetary policy cycle. The decrease reached 3.0 percentage points in the segment of non-earmarked resources – reflecting alterations in the charging of interest and fines relative to overdue installments, valid from September 2017 onwards[9] – and 0.3 percentage points in the segment of earmarked resources, with a contraction in credit for individuals.

The delinquency rate of the financial system's credit portfolio showed relative stability, reaching 3.6 percent in the quarter ended in October. The indicator stood at 3.9 percent in the in the segment of credit for individuals and 3.4 percent in the corporate credit segment, observed the respective declines of 0.1 percentage points and 0.3 percentage points in operations with non-earmarked resources.

8/ Regarding the trajectory of credit for companies, please see box "Recent Evolution of Corporate Credit" on page 40 of this Report, where this segment's concentration and replacement of funding sources are identified.

9/ Resolution nr. 4,558 from the National Monetary Council on February 23rd 2017.

Table 1.3 – Public sector borrowing requirements – Primary result

Twelve-month accumulated

	2015		2016		Oct 2017	
	R$ billion	% GDP	R$ billion	% GDP	R$ billion	% GDP
Central Government	116.7	1.9	159.5	2.5	200.0	3.1
Sub-national governments	-9.7	-0.2	-4.7	-0.1	-12.3	-0.2
State companies	4.3	0.1	1.0	0.0	-0.5	-0.0
Total	111.2	1.9	155.8	2.5	187.2	2.9

Table 1.4 – Balance of Payments

US$ billion

Itemization	2016			2017	
	Nov	Jan-Nov	Year	Nov	Jan-Nov
Current account	-0.7	-17.6	-23.5	-2.4	-5.4
Balance on goods	4.5	40.8	45.0	3.2	59.4
Exports	16.1	168.6	184.5	16.6	199.7
Imports	11.6	127.7	139.4	13.4	140.3
Services	-2.3	-27.1	-30.4	-3.1	-30.2
Primary income	-3.2	-34.1	-41.1	-2.6	-36.7
Secondary income	0.3	2.7	2.9	0.1	2.1
Financial account	-0.2	-10.4	-16.4	-1.8	-0.6
Direct investments	-7.8	-55.0	-65.4	-5.6	-62.2
Abroad	0.2	7.9	12.8	-0.6	2.9
In Brazil	8.0	62.9	78.2	5.0	65.0
Portfolio investments	0.0	18.0	19.2	3.2	10.0
Derivatives	0.3	-1.1	-1.0	0.0	0.1
Other investments	6.2	18.7	21.5	0.0	38.9
Reserve assets	1.0	8.9	9.2	0.6	12.5
Memo:					
Current account / GDP		-1.1	-1.3		-0.3

Fiscal

The consolidated public sector registered a primary deficit of R$77.4 billion in the first ten months of 2017 (R$45.9 billion in the same period of 2016), result of a deficit of R$95.9 billion from the Central Government and a surplus of R$18.0 billion from the subnational entities. Law 13.480 from September 13th 2017 established a primary deficit of R$159.0 billion as a fiscal target for the Central Government in 2017 and the same target for 2018, with an indication for gradual recovery of the public accounts' balance in the following years.

The Public Sector Net Debt (DLSP) reached R$3,298.6 billion (50.7 Percent of GDP) in October, an increase of 4.6 percentage points of GDP in comparison to December 2016, notably due to the contributions of the Public Sector Borrowing Requirements (6.2 percentage points) and the growth of GDP (-1.7 percentage points). The Gross General Government Debt, which includes Federal Government, National Social Security Institute (INSS), state and municipal governments, reached R$4,837.2 billion in October (74.4 percent of GDP), increasing 4.5 percentage points in the same basis of comparison, with emphasis to the impact of the accruement of interests over the debt stock (5.7 percentage points).

The advancement in the process of reforms and other necessary adjustments in fiscal management remain crucial for the reversion of the ascending trajectory of public debt.

External demand and Balance of Payments

Current transactions registered a deficit of US$5.4 billion (0.3 percent of GDP) up to November 2017, in comparison with US$17.6 billion (1.1 percent of GDP) in the same interval of 2016. It is worth noting in the period a US$18.6 billion increase in the surplus of the trade balance, reflecting the expansion of 9.8 percent in imports, especially due to the acquisition of intermediate goods, fuel and lubricants and, in the last months, capital goods; and the expansion of 18.5 percent in exports, driven by the sale of basic products, notably soybeans, iron ore and oil, in line with the favorable external scenario and record agricultural harvest. Also of note the exports of some manufactured goods, especially passenger cars. Regarding the financial account, from January to November of this year net investment inflows in

the country surpassed net outflows of investments abroad by US$13.3 billion. Net inflows of direct investment totaled US$62.2 billion in the period, with growth in direct investment abroad from July on. In the context of portfolio investments, as of July the increase in net outflows of investment funds was also a highlight.

The conditions for access to credit, as offered by the international market to companies resident in Brazil, improved in 2017. The total rollovers rate, considering long term-term securities operations and direct loans in the international market reached 100 percent in the first eleven months of the year (65 percent in the same period of 2016).

The estimated stock of foreign debt reached US$317.2 billion in November, in comparison to US$326.3 billion at the end of 2016. The ratio between the international reserves stock in the liquidity concept and the 12-month external debt maturities reached 371 percent in November 2017 compared to 335 percent in December 2016. The stock of international reserves in the liquidity concept corresponded to 18.8 percent of GDP in November, equivalent to 30 months of imports of goods.

1.3 Inflation and market expectations

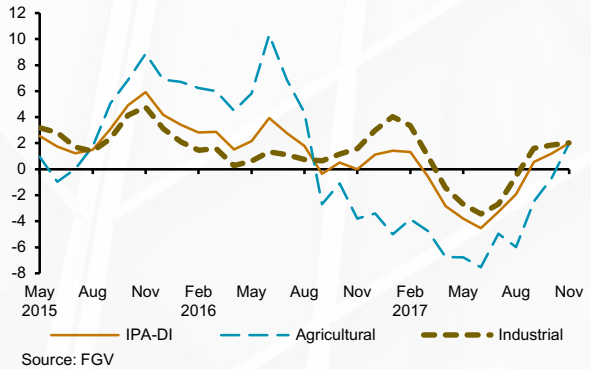
Consumer inflation behavior remained favorable in the quarter ended in November, staying, for the fifth consecutive quarter, in a level lower than expected[10]. The indicator evolution was sustained, especially, by the benign behavior of food prices, in contrast with the evolution of general prices, which unexpectedly started to increase again, mitigating the deflationary surprise of this quarter.

The several underlying inflation measures remain in comfortable or low levels, including the components most sensitive to the business cycle and monetary policy.

Price indexes

After registering deflation for two consecutive quarters, the Broad Producer Price index (IPA) increased by 2.02 percent in the quarter ended in

Figure 1.21 – IPA-DI
% change in 3 months

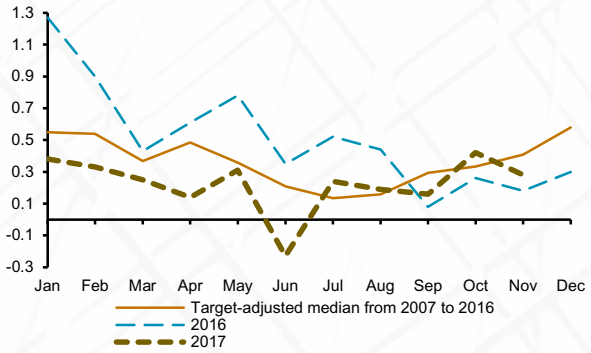


Source: FGV

10/ According to estimates released in the previous Inflation Report.

Figure 1.22 – IPCA – Seasonal pattern

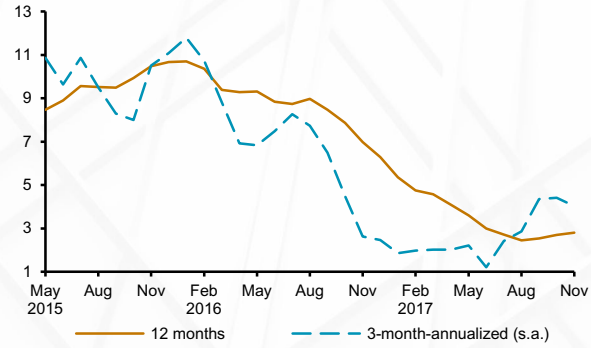
Monthly % change



Source: IBGE and BCB

Figure 1.23 – IPCA trajectory

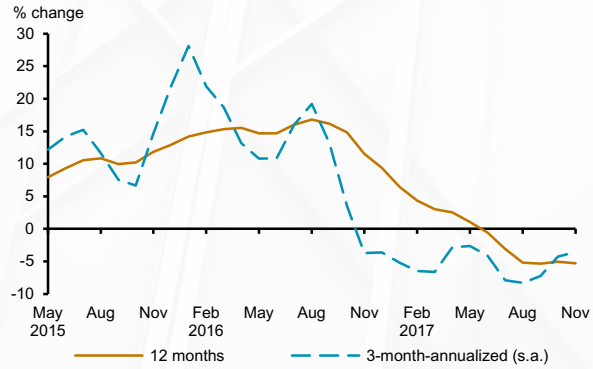
% change



Source: IBGE and BCB

Figure 1.24 – IPCA – Food-at-home

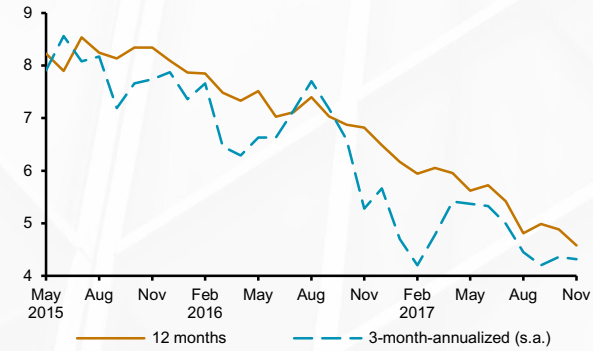
% change



Source: IBGE and BCB

Figure 1.25 – IPCA – Services

% change



Source: IBGE and BCB

November, an evolution that, although spread among its components, was particularly influenced by the behavior of the most volatile prices, such as corn (23.66 percent), oil derived products (17.19 percent) and soybeans (8.67 percent). In general, the recent dynamics of producer prices is consistent with the prospects of gradual increase of inflation in consumer prices for food and industrial goods, in the coming quarters.

The Extended National Consumer Price Index (IPCA) grew 0.86 percent in the quarter ended in November, reflecting increases of 2.56 percent in administered prices and 0.29 percent in free market prices. The IPCA variation in the quarter was slightly below than the historic median compatible with the center of the target (1.04 percent)[11], but higher than that registered in the same period of the previous year (0.52 percent), which resulted in the increase of the twelve month rate, from 2.46 percent in August, to 2.80 percent in November.

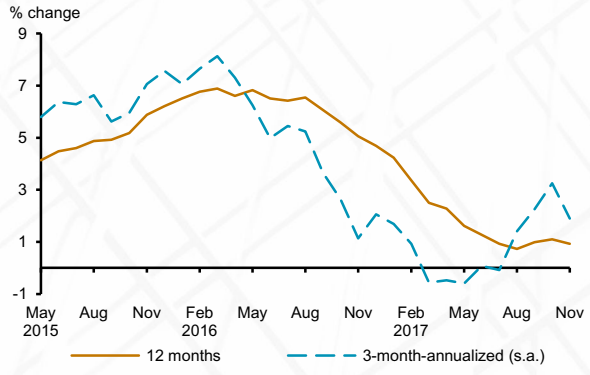
Despite the deceleration in the pace of falling prices, the food-at-home subgroup registered, for the fifth consecutive quarter, a variation lower than the seasonal pattern, expanding the deflationary surprise coming from this segment. Twelve months food inflation reached -5.30 percent in November, after reaching 5.20 percent in August 2017, in comparison to 11.56 percent in November 2016. Despite the still widespread deflation, the recent evolution of agricultural and livestock prices and the prospect of the La Niña climatic event suggest a less benign scenario for food inflation in the following months.

The slack in production factors and the dissemination of the current low inflation level continue to benefit the reduction of inflation of services, which registered 4.58 percent in November 2017, 4.81 percent in August 2017 and 6.82 percent in November 2016. Considering seasonally-adjusted quarterly variations, inflation of services showed a relative stability in November, amidst the slowing of the underlying components (notably food away from home and condominium fees) and acceleration in tourism and communications prices.

Despite occasional price pressures from ethanol and cigarettes in recent months, twelve-month inflation in the industrial goods segments remains low, reaching 0.92 percent in November, down from 0.73 percent

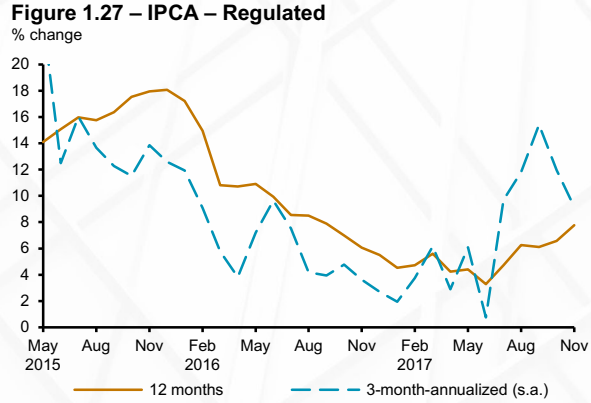
11/ Seasonal pattern obtained from monthly medians for the period from 2007 to 2016, adjusted so the twelve month total is around 4.5 percent.

Figure 1.26 – IPCA – Industrialized goods



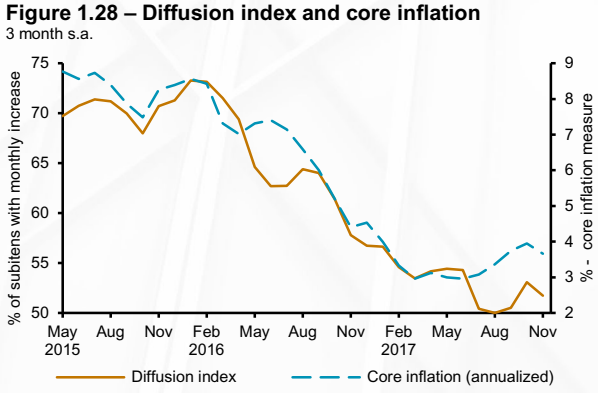
Source: IBGE and BCB

Figure 1.27 – IPCA – Regulated



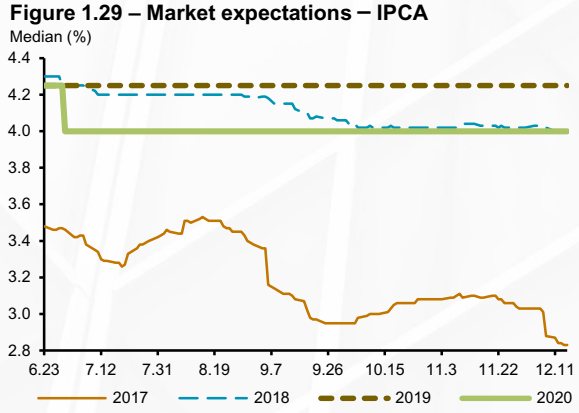
Fonte: IBGE e BCB

Figure 1.28 – Diffusion index and core inflation



Sources: IBGE e BCB

Figure 1.29 – Market expectations – IPCA



in August and 5.06 percent in November 2016. In this context, it is worth noting the favorable evolution of durable goods inflation, which registered -1.68 percent in the last twelve months.

Differently from other segments and inducing great volatility in the monthly IPCA rates, administered prices registered acceleration for the second consecutive quarter, reflecting the increase in electric power tariffs[12] and the effects of the raise in international oil prices over domestic gasoline and bottled gas prices. In the opposite direction, there was a deceleration in the prices of water and sewage services and urban transportation tariffs. Twelve-month inflation for administered prices was 6.26 percent in August and reached 7.76 percent in November.

Diffusion index and core inflation measures

The diffusion index, which measures the proportion of IPCA components with positive price variations, registered an average of 51.7 percent in the quarter ended in November, 45.1 in the quarter ended in August and 57.6 percent in the same period of the previous year. Considering seasonally-adjusted data, the recent evolution of the diffusion index suggests the exhaustion of the deflationary process in course.

The twelve month core inflation measures continued to decelerate, but showed some acceleration in the seasonally-adjusted series, a behavior consistent with the inflexion of the inflationary process. The average variation of five core measures reached 3.34 percent in the period of twelve month up to November, remaining in the interval of the inflation target.

Market expectations

According to the Focus survey, the median projections for the annual IPCA variation in 2017 declined from 2.95 percent on September 29th to 2.83 on December 15th. The median of projections for 2018 declined form 4.06 percent to 4.00 percent in the same period. The median of projections for 2019 and 2020 remained in 4.25 percent and 4.00, respectively. The median of expectations for the twelve-month inflation ahead – smoothed – declined from 3.97 percent to 3.91 percent, in the same period.

12/ Change from yellow to red flag (level 2) in October and, in November, revision of the respective additional value of R$3.50 to R$5.00 for each 100kWh consumed.

Table 1.5 – Summary of market expectations

	30.6.2017		29.9.2017		15.12.2017	
	2017	2018	2017	2018	2017	2018
In percentage						
IPCA	3.46	4.25	2.95	4.06	2.83	4.00
IGP-M	0.58	4.50	-0.80	4.44	-0.80	4.39
IPA-DI	-0.95	5.00	-3.61	4.56	-3.16	4.47
Administered Prices	5.10	4.70	6.50	4.70	7.90	4.90
Selic (end-of-period)	8.50	8.25	7.00	7.00	-	7.00
Selic (average)	10.22	8.25	9.84	7.00	-	6.75
GDP growth	0.39	2.00	0.70	2.38	0.96	2.64
In BRL/US$						
Exchange rate (end-of-period)	3.35	3.40	3.16	3.30	3.29	3.30
Exchange rate (average)	3.26	3.40	3.17	3.24	3.20	3.30

(continues)

Table 1.5 – Summary of market expectations
(concluded)

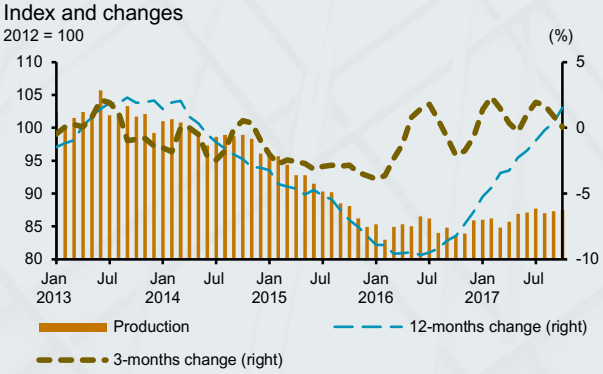
	30.6.2017		29.9.2017		15.12.2017	
	2019	2020	2019	2020	2019	2020
In percentage						
IPCA	4.25	4.00	4.25	4.00	4.25	4.00
IGP-M	4.50	4.50	4.25	4.00	4.30	4.00
IPA-DI	4.50	4.50	4.50	4.25	4.35	4.12
Administered Prices	4.50	4.25	4.25	4.00	4.25	4.00
Selic (end-of-period)	8.50	8.25	8.00	8.00	8.00	8.00
Selic (average)	8.50	8.33	8.00	8.00	8.00	8.00
GDP growth	2.50	2.50	2.50	2.50	2.75	2.50
In BRL/US$						
Exchange rate (end-of-period)	3.49	3.55	3.36	3.43	3.40	3.45
Exchange rate (average)	3.45	3.50	3.32	3.40	3.32	3.40

The median of expectations for the increase in administered prices in 2017 and 2018 reached, respectively, 7.90 percent and 4.90 percent on December 15th (6.5 percent and 4.7 percent on September 29th). Projections for 2019 and 2020 remained, respectively, 4.25 percent and 4.0 percent, in the period considered.

The exchange rate medians projected by the market for the end of 2017 and 2018 reached, respectively, R$3.29/US$ and 3.30/US$ on December 15th (R$3.16/US$ and R$3.30/US$ on September 29th). Medians relative to 2019 and 2020 increased, respectively, to R$3.40/US$ and R$3.45/US$ (R$3.36/US$ and R$3.43/US$ on September 29th).

2017 industry growth analysis

Figure 1 – General industrial production[1/]
Index and changes



Source: IBGE-PIM
1/ Index and 3-month change seasonally adjusted.

The Brazilian industry has grown again in 2017, after three consecutive years of retraction. Industrial production accelerated steadily throughout the year and recorded positive accumulated twelve-month change as of September (Figure 1). The purpose of this box is to investigate the characteristics of this reversal in the dynamics of industry, including the degree of dissemination and the allocation of the increase of production.

The change of industrial production was broken down into components related to changes in the domestic market, in the import penetration (IP) and in the export coefficient (EC)[1]. The EC of a given sector was calculated as the ratio between the sector's export and production, at 2015 constant prices. Similarly, also at 2015 prices, import penetration[2] was estimated as the ratio between imports and apparent consumption of industrial goods, the latter equals the sum of production with imports discounted from exports[3].

Industry output increased by 1.5 percent in the twelve-month period ended in October, chiefly because of the positive contributions of the EC (1.2 p.p.) and the domestic demand (0.9 p.p.), as observed in Figure 2. Of note, in this period, manufacture of

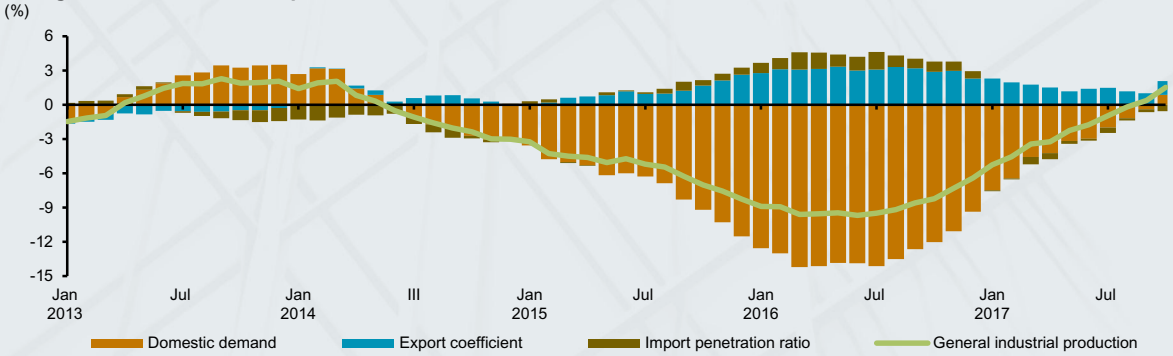
1/ Given the purpose of this box, the decomposition in terms of changes in export and import penetration coefficients is preferable to one relative to changes in their levels because, thus, the contribution of the external sector depends on their participation gains.

2/ The calculating methodology of the two indices is described in more detail in the box "Evolution of Manufacturing Industry Import and Export Coefficients" in the June 2016 Inflation Report. However, as the purpose of this box is to analyze the performance measured by the Monthly Industrial Survey (PIM), the calculation was modified so that the result is consistent with the changes of the PIM. First, imports and exports weights related to the value produced by each division of Industry are based on the 2015 data from the Resource and Usage Table (RUT) of the Brazilian Institute of Geography and Statistics (IBGE). Besides, the industry indexes were calculated as the aggregation of industry divisions indexes using PIM weights.

3/ Since production cannot be written as a linear function of the exports and import penetration coefficients, the relative share of each variable in the total derivative of production in relation to time was used, making the decomposition a linear function of the change in each of them. For that reason, the equality between supply and demand of the products of the industry was initially considered, $Y_t + M_t = C_t + X_t$, where Y_t is the industry production in the month t, M_t and X_t represent the industry's typical products imports and exports and C_t is the internal absorption, including internal consumption and inventories changes. Rewriting imports and exports on the basis of import penetration and the exports coefficient, the equation can be rewritten as $Y_t = C_t(1-m_t)/(1-x_t)$. Thus assuming by simplicity that the processes are continuous and adopting the notation $\dot{Z}_t = \partial Z_t/\partial t$ for any variable Z_t, the total production derivative in terms of time is given by: $\dot{Y}_t/Y_t = ((1-m_t)/(1-x_t))(C_t/Y_t)\,\dot{C}_t/C_t + \left((1-m_t)(C_t/Y_t)/(1-x_t)^2\right)\dot{x}_t - ((C_t/Y_t)/(1-x_t))\dot{m}_t$, where the three terms of the summation on the right-hand side of the equation are defined as the domestic demand contributions, the exports coefficient and the import penetration coefficient, respectively, for the production change. Calculations were made considering the average point between the instants t and $t+1$ for each variable, with the change contribution in the internal absorption calculated by residue.

automotive vehicle, benefiting from improvements in domestic demand and in export coefficient, and the extractive industry, with emphasis on the impact of increased participation of the respective export.

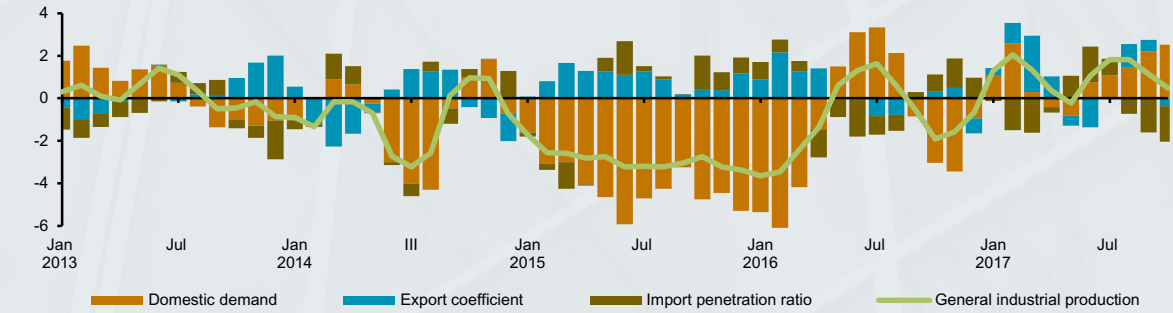
Figure 2 – Decomposition of 12-month accumulated change – General industrial production



Source: IBGE-PIM

Domestic demand was the main vector QoQ of the industry growth, with a positive contribution of 2.5 p.p. for the 0.5 percent change registered in the quarter ended in October, mainly because of the performance of vehicle, chemicals and refining sectors. The IP increased in the period, contributing negatively to the performance of the industry, especially in the segments of machines and equipment, pharmochemicals and pharmaceuticals (Figure 3).

Figure 3 – Decomposition of 3-month accumulated change – General industrial production[1/]



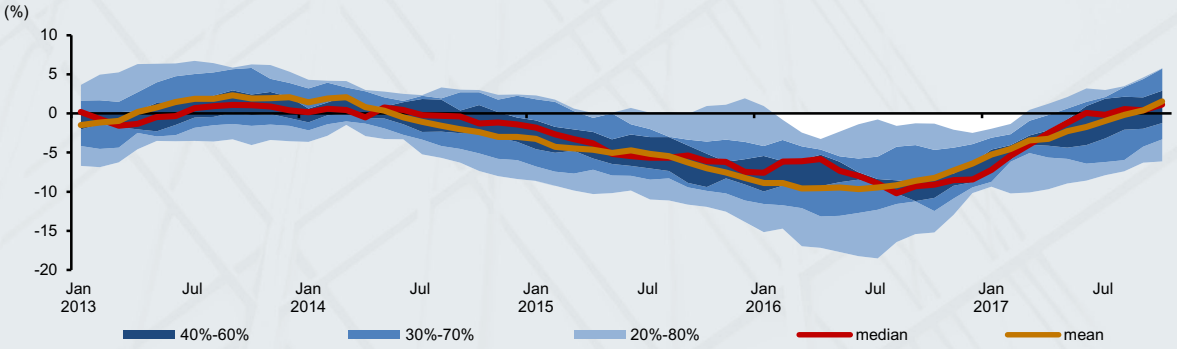
Source: IBGE-PIM
1/ Decomposition of seasonally adjusted data.

The recent industry recovery may be better understood by assessing its degree of dissemination and sectoral distribution. In this context, the dynamics of PIM disaggregated data were analyzed, comprising 83 sectors that represented 92.5 percent of the PIM in its base year[4]. Figures 4 and 5 show the evolution of the distribution of the changes in the

4/ For the analysis, data on activities, groups and industrial classes were combined, creating 83 non-overlapping sectors. In the selection of these sectors the analysis was limited to those with data available since 2002. The seasonal adjustment was made using the specification adopted by IBGE for the General Industry.

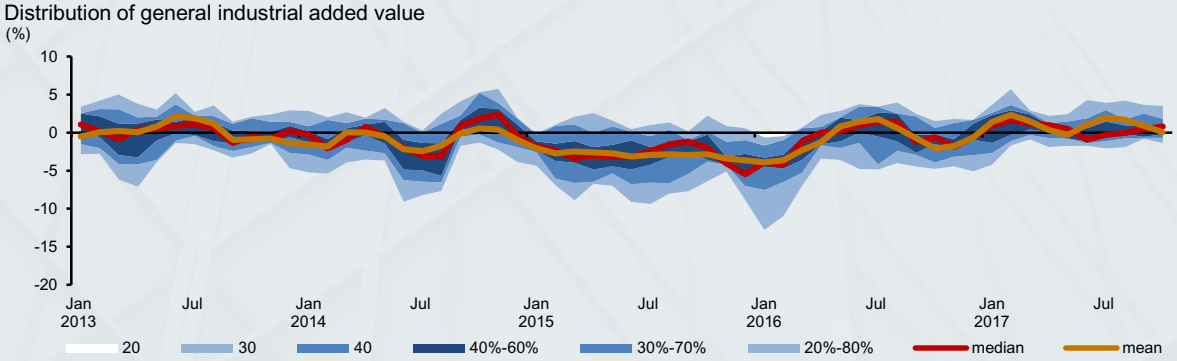
production of these sectors, accumulated in twelve and three months.

Figure 4 – Dispersion of 12-month accumulated change – General industrial production
Distribution of general industrial added value



Source: IBGE

Figure 5 – Dispersion of 3-month accumulated change – General industrial production[1/]
Distribution of general industrial added value



Source: IBGE
1/ Changes in seasonally adjusted data.

It should be noted that, up to the end of 2016, there was a negative 12-month accumulated change in sectors that represented 80 percent of the Manufacturing Added Value (MVA), and the median of the change was only slightly positive since August 2017. Considering the 3-month accumulated change, the median becomes predominantly positive in 2017, highlighting the more widespread growth of the industrial sector.

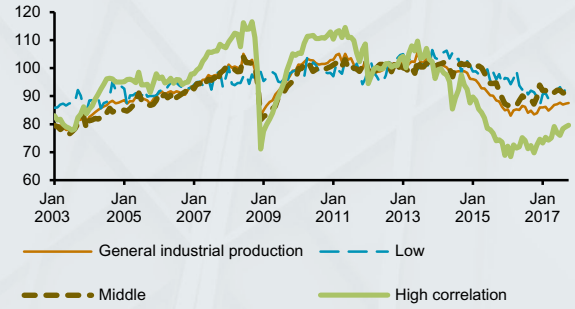
In addition, it was considered whether the recent expansion of the industry was driven by cyclical sectors or whether it results only from growth in sectors whose dynamics are dissociated from the industry as a whole. For that purpose, a cycle measurement was calculated for each of the 83 sectors using a standard Hodrick-Prescott filter correlating this measure with the industry's cycle discounted from its own sector[5].

5/ The objective of this last step was to control for the size of each sector, preventing those with larger weights from having a larger correlation simply because of their weight. However, the results were very close to those where the sector was not discounted from the industry.

Considering the correlation coefficients in descending order, the sectors were segmented into three groups, so that the weight of each of the groups represented about one-third of the sample. The "high correlation" group included the sectors whose correlation with the total industry cycle was between 0.60 and 0.81, with emphasis on the manufacturing of automobiles, trucks and utilities, iron and steel, and parts and accessories for automotive vehicles. The "mean correlation" group included the sectors with a correlation between 0.25 and 0.60, with emphasis on the extractive industry, slaughter of pigs, poultry and other small animals, and other metal products. In the "low correlation" group (from -0.45 to 0.25), – the activities of manufacturing oil products, manufacturing and refining sugar, and manufacturing of pharmaceutical and pharmochemical products were the highlights.

Figure 6 – General industrial production and groups according correlation with the Industry[1/]

2012 = 100



Source: IBGE
1/ Seasonally ajusted data.

Figure 6 provide the series of the three groups, with seasonally adjusted data. As expected, the "high correlation" group presents the greatest variability. Of note, this group had the greatest contribution to the contraction of industrial activity both during the crisis of 2008-2009 and in the recent period (2014 to 2016). In the margin, the General Industry and the "average" and "high correlation" groups registered growth since the first half of 2016, the latter registering a larger contribution. Throughout 2017, the largest contribution was from the "low correlation" group, with growth of 6.8 percent in relation to December, although the most cyclical sector continued to show growth.

Broadly speaking, there are several indications that the recovery of the industry observed throughout 2017 is more correlated to the cycle of the economy, with sales geared to the domestic market and recovery of the cyclical sectors. Additionally, there is a consistent dissemination across sectors, with the spread of accumulated growth in three months more favorable than that of accumulated twelve-month growth. In this context, the analysis corroborates the perspective of cyclical recovery of the industry in 2018.

Transition rates and recent developments in the labor market

The unemployment rate, estimated by the Continuous National Household Sample Survey (PNAD Contínua – IBGE), after recording successive increases between the second quarter of 2014 and the first quarter of 2017, when it reached 13.2 percent, declined in the two subsequent quarters and stood at 12.6 percent in the third quarter of 2017, considering seasonally adjusted[1] data.

The objective of this box is to quantify the potential impact that current labor market conditions – reflected in the transition rates – can exert on the path of the unemployment rate. The concept of transition rate, used here, can be understood as the probability of an individual of population category "i" to migrate to population category "j" within a 3-month horizon. The analysis utilizes the PNAD Contínua[2] micro-data pairing technique and a model with transition rates among the various population categories in the labor market. The categories of population considered here were:

1 – Non Working Age Population (NWAG)[3];
2 – Population Not in Labor Force (PNLF);
3 – Unemployed Population (UP);
4 to 9 – Occupied Population (OP):
- 4 – Formal Jobs at Private Sector (FJ);
- 5 – Non-registered Private Sector Workers (N-reg.);
- 6 – Domestic/Family (Others);
- 7 – Public Sector workers (Public);
- 8 – Employers (Employers);
- 9 – Self-employed workers (SE).

Of note, the decline mentioned in the unemployment rate, from the first to the third quarters of 2017, reflected a 3.5 percent decline in the unemployed population and a 1.8 percent growth in the employed population. The main contributions to the growth of employed population came from increases in the contingent of self-employed, non-registered

1/ Unless otherwise stated, seasonally adjusted data were used in this box. The seasonal adjustment was carried out by Banco Central do Brasil.
2/ For more details on pairing technique, see box "Labor market flows in the Brazilian labor market," published in the September 2016 Inflation Report.
3/ People under 14 years old at the survey cutoff date.

Table 1 – Recent evolution of population data

%

	2017 Q3 1/	Change Q/Q-1 2/	Change Q/Q-2 2/	Q/Q-2 (contribution in p.p.)
Unemployment rate (p.p.)	12.6	-0.3	-0.6	---
Working age population	168.8	0.4	.8	---
Workforce	104.3	0.8	1.1	---
Unoccupied	13.1	-1.3	-3.5	---
Occupied	91.2	1.1	1.8	1.8
Formal jobs	33.3	-0.1	-0.8	-0.3
Non-registered works	10.8	1.4	3.6	0.4
Self-employed	23.1	2.6	4.3	1.1
Employer	4.2	-0.7	0.8	0.0
Public sector	11.3	0.6	2.1	0.3
Other	8.5	3.3	3.4	0.3

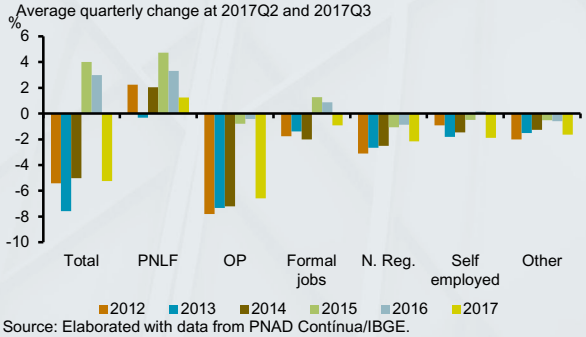
Source: PNAD Contínua/IBGE

1/ Seasonally adjusted data. Population data in million and unemployment in pencentage.

2/ Changes in percentage points for unemployment rate and percentage for other variables.

Figure 1 – Net contribution to unoccupied population change

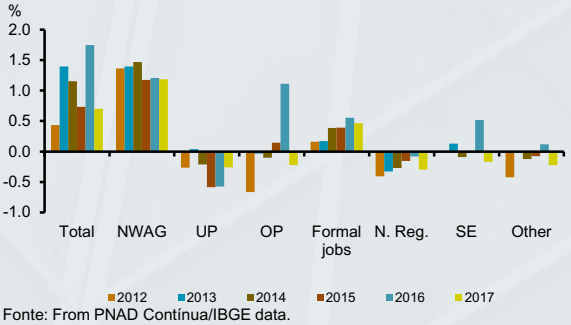
Average quarterly change at 2017Q2 and 2017Q3



Source: Elaborated with data from PNAD Contínua/IBGE.
Not seasonally adjusted data

Figure 2 – Net contribution in the changes of number of workers and workers not in labor force

Average quarterly Vchange in 2017Q2 and 2017Q3



Fonte: From PNAD Contínua/IBGE data.
Non seasonally adjusted data.

and public sector workers (Table 1). The number of formal jobs continued to decline during the period under analysis, but at lower rates than previously observed[4].

The increase in the employed population concomitant with the retreat in the number of unemployed suggests that there has been a net flow of people from the second to the first category. In addition, the greater growth of the labor force compared to the growth of the working age population indicates that there has been an increase in the net flow of people from outside the labor force to the labor force, particularly to the employed population.

The pairing technique shows that the decline in the unemployment rate was in fact a result of the positive net flow of individuals from the unemployed to the employed category during the second and third quarters of 2017, reversing the stability trend observed in the same periods of 2015 and 2016 (Figure 1, OP category). In the same sense, there was a reduction in the net flow of people from outside the labor force to unemployment (Figure 1, NWLF category). These two movements were the main determinants for the first decline in the number of unemployed people since the corresponding period of 2014 (Figure 1, Total). The analysis shows, in a complementary way, positive net flow for employed people coming directly from the category of individuals who were out of the labor market, reversing the pattern observed in the last two years (Figure 2, OP category).

Changes in the flows of individuals reflect shifts in the transition rates between different population categories. In order to quantify the effect of the recent evolution of each transition rate on the unemployment rate, a model was used to calculate the number of individuals in each population category in the quarter T + 1, from the quantities in quarter T and from the transition rates across categories. The description of the model and the categories in which the total population were divided are shown below[5]:

4/ Declines of 0.8 percent in the six-month period ended in Sep/17; of 1.6 percent in the six-month period ended in Mar/17; and of 1.9 percent in the six-month period ended in Sep/16.

5/ For more details on the model used, see box "Transition rates and evolution of unemployment", published in the December 2016 Inflation Report.

$$POP_j(t+\Delta t) = POP_j(t) + \Delta t \cdot \left[\sum_{\substack{i=1 \\ i \neq j}}^{9} f_{i,j} \cdot POP_i - \sum_{\substack{i=1 \\ i \neq j}}^{9} f_{j,i} \cdot POP_j \right]$$

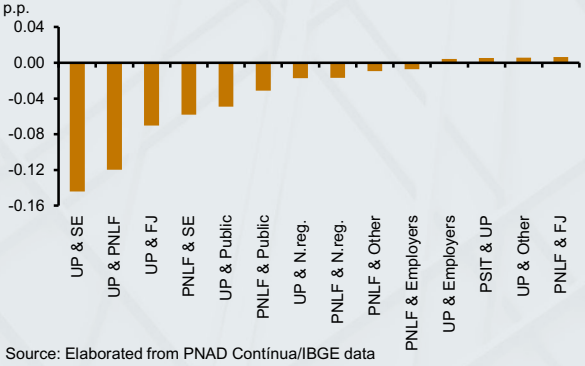
where:

fi,j is the transition rate from category i to category j;

POPj it is the amount of people at category j, where j = 1 to 9, as aforementioned.

The model described was used to calculate the evolution of the number of people in the different population categories and, as a consequence, the unemployment rate. In this exercise, we first calculated the unemployment rate variation between the first and third quarters of 2017 with all transition rates set at the level of the first quarter of 2017. Subsequently, alternative variations for the unemployment rate were calculated, with all transition rates at the level of the first quarter of 2017, except for one category, which varied between that period and the third quarter of the same year, as obtained with the use of the PNAD Contínua microdata. The difference between the changes in the initially calculated unemployment rate and the unemployment rates calculated according to the new criterion quantifies the impact of the evolution of each category's transition rate to the change in the unemployment rate over the last two quarters[6]. (Figure 3)

Figure 3 – Effect on transition rate changes on unemployment rate



Source: Elaborated from PNAD Contínua/IBGE data

Table 2 – Evolution of the transition rate and contribution to changes in the unemployment rate

%

	2017Q1	Average 2017Q2-2017Q3	Unempl. change rate (p.p.)
UD - SE	8.38	8.60	-0.14
SE - UD	4.26	3.90	
UD - PNLF	24.81	24.55	-0.12
PNLF - UD	5.61	5.40	
UD - Formal jobs	7.50	7.54	-0.07
Formal jobs - UD	2.91	2.74	
PNLF - SE	3.34	3.55	-0.06
SE - PNLF	10.22	9.64	

Souce: From PNAD Contínua/IBGE data.

The result indicates that about 70 percent of the change in the unemployment rate between the first and the third quarter of 2017 was due to shifts in the transition rates that occurred during this period. Of this total, a share of about 75 percent reflected in the transition rates between UP and SE, UP and PNLF, UP and FJ, and PNLF and SE[7] (Figure 3). The changes in migration probabilities between these categories – reflected in the transition rates themselves – show the improvement in labor market conditions in the period.

The increase of the transition rate from UP to SE combined with the reduction of the transition rate from SE to UP was responsible for 0.14 p.p. of the decrease in the unemployment rate between the first and third quarters of 2017 (Table 2). Similarly,

6/ In order to purge seasonal effects, we used seasonally adjusted population data and transition rates.

7/ In order to simplify data presentation, transition rate variations effects were presented in pairs. That is, by grouping the effects of variations in the transition rates from "i" to "j" and from "j" to "i".

changes in the transition rates between UP and FJ contributed to the unemployment rate decline in the period, since the decrease in the number of employees with formal job was lower than would have occurred had the transition rates remained at the level observed in the first quarter of 2017.

The recent improvement in population flows resulted in a decline in the unemployment rate. The average transition rates for the second and third quarters of 2017 are, however, worse than those for longer periods, especially from the beginning of the PNAD Contínua (2012) until the first quarter of 2014. In fact, according to Table 3, the average of the transition rate of unemployed persons that were employed in the second and third quarters of 2017 is lower than in other periods, while the transition rate from employed to unemployed is on a higher level. Additionally, the transition rates from out of the workforce to the unemployed and from out of the workforce to employed are respectively higher and lower than those observed in longer periods.

Table 3 – Transition and unemployment rates
Averages for the period

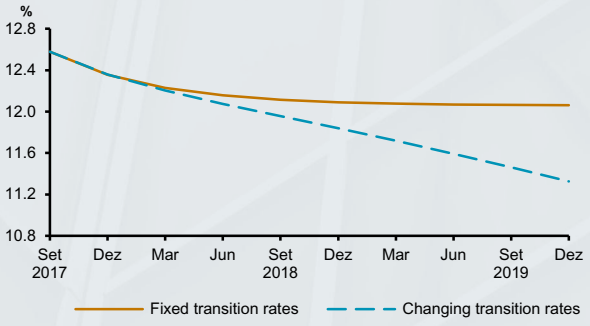
(%)

	UP-OP	OP-UP	UP-PNLF	PNLF-UP	PNLF-OP	OP-PNLF	Unempl.
2012Q1-2017Q3	33.1	2.8	27.9	4.2	9.8	7.1	8.9
2012Q1-2014Q1	35.7	2.4	29.3	3.4	10.5	7.3	7.2
2017Q2-2017Q3	29.3	3.6	24.5	5.4	9.1	6.4	12.7

Souce: From PNAD Contínua/IBGE data.

Prospectively, two scenarios were considered for the transition rates, in order to infer their impact on the evolution of the unemployment rate. In the first scenario, current labor market conditions were kept unchanged, considering the maintenance of the transition rates over the next quarters[8]. In this case, the unemployment rate would continue to decline until the beginning of 2019, stabilizing around 12.1 percent. Alternatively, in a scenario in which the transition rates evolve according to the variations observed between Sep/16 and Sep/17 – therefore, assuming that labor market conditions will continue to improve at a pace similar to what was observed in the last year. In this case, the unemployment rate would fall to 11.8 percent at the end of 2018 (s.a.) and 11.3 percent at the end of 2019 (Figure 4). In both cases, the unemployment rate would decline from the current level, but would remain above the historical average and the values observed at the beginning of the PNAD Contínua series.

Figure 4 – Unemployment rate
Prospective outlooks



Source: Elaborate from PNAD Contínua/IBGE data

8/ For this exercise, the average of the 2Q2017 and 3Q2017 transition rates were used.

These exercises do not constitute forecasts for the evolution of the unemployment rate. They only highlight the contribution of changes in transition rates to this process.

In summary, the recent improvement in transition rates has favored reductions in the unemployment rate after a prolonged period of successive increases and should further contribute in the same direction over the coming quarters. A sharper decline in the unemployment rate requires sharper improvements in transition rates. The consolidation of the process of economic activity recovery, as well as advances seeking macroeconomic rebalancing, partially achieved throughout this year, are factors that will contribute to this goal.

Methodological revision of the Commodities Index – Brazil (IC-Br)

The Brazilian Central Bank releases the Commodities Index – Brazil (IC-Br) monthly, whose weighting structure seeks to reflect the relevance of each commodity to the dynamics of domestic inflation[1]. This box revises the methodology of calculation of the IC-Br, taking into account the dynamism of the economic relations and the increase of the sample available to estimate the weights.

The revision includes the following changes:

i. Sample period used in the weights estimation was extended from 8 to 13 years;
ii. Use of information about intermediate consumption of commodities, from the Resource and Usage Table (RUT);
iii. Addition of a second step in the calculation of the weighting structure, which consisted of a procedure to optimize weights in terms of the correlation with the Broad National Consumer Price Index (IPCA);
iv. Inclusion of new commodities in the agricultural and livestock and metal segments[2]; and
v. Increase in the relative weight of oil in recent months, in line with the new pricing policy adopted by Petrobras[3].

Of note, the definition of IPCA weighting is not trivial, since commodities are, to a large extent, primary inputs for goods and services production in the consumption basket. Besides, the influence of commodities on Brazilian inflation is not limited to the increase in the cost of production, since fluctuations in the prices of these products tend to change the terms of trade, with implications on domestic income and demand.

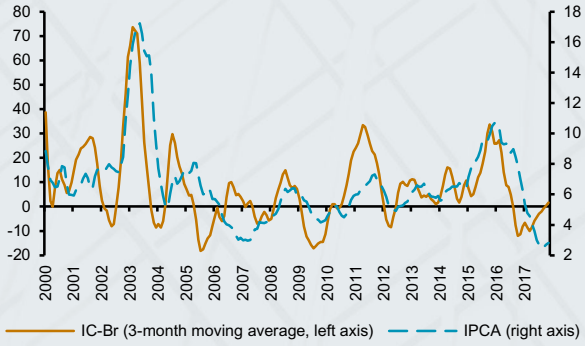
1/ The indicator is drawn from international commodity prices converted into Brazilian reais. The methodology for constructing the index was initially presented in the box "Transfer of Commodity Prices to the IPCA and Commodities Index-Brazil)", of the Inflation Report of December 2010, and subsequently updated in the box "Methodological Revision of Commodities Index – Brazil (IC-Br)", of the December 2011 Inflation Report.

2/ Cocoa, orange juice, gold and silver were also included.

3/ In October 2016, Petrobras changed its pricing policy, establishing monthly revisions of gasoline and diesel oil prices based on the international market parity. In June 2017, residential LPG prices also began to be revised monthly and in October 2017, the company informed that daily revisions in gasoline and diesel prices could be announced. At the beginning of December, Petrobras announced that it would revise its LPG pricing policy, which, however, would continue to be referenced to the international market prices.

Figure 1 – IC-Br x IPCA

% in 12 months



Source: IBGE and BCB

Particularly regarding the IC-Br, as commodity prices are considered in Brazilian reais, the indicator also captures the inflationary impact arising from changes in the exchange rate. In effect, the movements of the IC-Br anticipate a relevant part of the inflationary cycles in Brazil (Figure 1).

In this methodological revision, in order to obtain more appropriate pass-through estimates, the weights evolution based on the Laspeyres index[4] was maintained, but the sample used in the estimation of the initial weights was divided into two periods[5]. Similar to the previous versions, the determination of the weights was based on the estimation of VAR[6] models to obtain the estimates of the inflationary pass-through of each commodity, with the particularity of considering two samples.

At the same time, RUT data from National Accounts were used to estimate the weighting that mainly reflects the inflationary effect of commodities as a result of production costs changes[7]. Initially, the products whose description was closest to the commodities of IC-Br[8] were identified. Next, the weight of the intermediate consumption of the products in the value of the final production of each economic activity was estimated. The relevance estimation of each commodity in the prices formation of the goods and services consumed by the families was obtained by multiplying the weight of the intermediate consumption of commodities in each activity by the respective weights of the activities in the consumption of the families.

Later, for each period of the sample, the respective arithmetic means of the weights vectors estimated in the previous steps were used as initial condition for the process of optimization of the weights[9]. In this step, the optimal weights structure that maximizes the average of the correlations between the index and the six-

4/ The estimated weights are attributed to the sample median month, which serves as reference for the monthly weights updating, according to changes occurred in the relative prices in the previous month.

5/ From July 1999 to June 2007 and from July 2007 to October 2017. The cutoff choice was based on the criterion mentioned in the box "Commodity Prices Influence on the Exchange Rate Pass-through", of the March Inflation Report 2015. In that box, it is argued that as of mid-2007, the exchange rate pass-through into inflation has declined, in line with the higher negative correlation between foreign exchange and commodity prices observed in the period.

6/ The VAR models used aim to correlate the individual impact of commodities on the IPCA, controlling for foreign exchange, activity and interest rate variables.

7/ For the two sample periods the averages of the weights calculated with RUT from 2010 to 2015 were used.

8/ Examples: the product "Corn grain" was used for the corn commodity; "Beef meat and other meat products" was attributed to the beef cattle commodity; and the product "Non-ferrous metal ores" has also been divided into aluminum, copper, lead, nickel, tin, zinc, gold and silver; and the product "Oil, natural gas and support services" was distributed between oil and natural gas according to the weight of its derivatives in the IPCA.

9/ The weights were allowed to vary within a range around the values found in the previous steps.

month inflation[10] ahead was calculated in a recursive way. Thus, the weights final vector is defined by:

$$W_{final} = \arg\max \bar{\rho}$$

where $\bar{\rho} = \frac{\sum_{t=1}^{6} \rho_t}{6}$

Finally, in order to consider the increase in the transfer of international oil prices to the prices of its domestic derivatives, the weighting was adjusted from October 2016 onwards, as a result of Petrobras' new pricing policy[11].

Figures 2 to 5 present the IC-Br and its segments calculated with the new methodology, compared with the previous versions. The evolution of the indexes followed a similar pattern, with occasional divergences, concentrated in the power sector index. The new weighting structure did not significantly change the relative weight of the segments in the formation of the IC-Br. In the average of the period between October 2016 and November 2017, the respective weights of the agricultural and livestock, metal and power sectors went from 71%, 19% and 10%, in the previous version, to 64%, 18% and 18% in the new version.

As illustrated by Figure 6, the correlation between the new IC-Br and inflation highlights an improvement over the previous index and, as expected in relation to other commodity indices (all measured in Brazilian reais). In the considered lags, the new IC-Br generated an average correlation 18% higher than the previous index.

Further evidence of the efficiency gain with the adoption of the new IC-Br is illustrated in Figure 7, which compares adjusted R^2 results from alternative inflation regressions using different commodity indexes. International indexes in general do not add information in relation to a non-commodity model, in contrast to the IC-Br, whose coefficient of determination of the new version was higher than in the old series[12].

In short, this box updates the IC-Br calculation methodology, aiming to adapt the index to structural

Figure 2 – Commodity Price Index – Brazil (IC-Br)
Dec/2005 = 100 (monthly average)

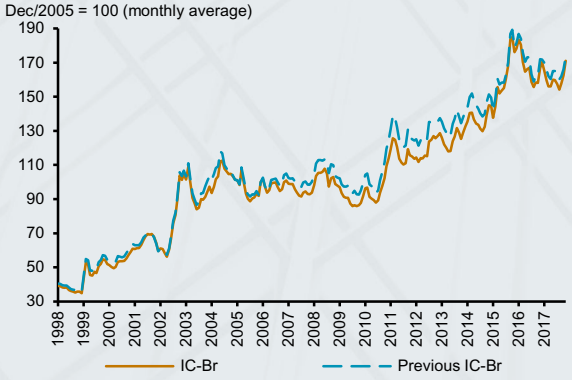


Figure 3 – IC-Br Agriculture
Dec/2005 = 100 (monthly average)

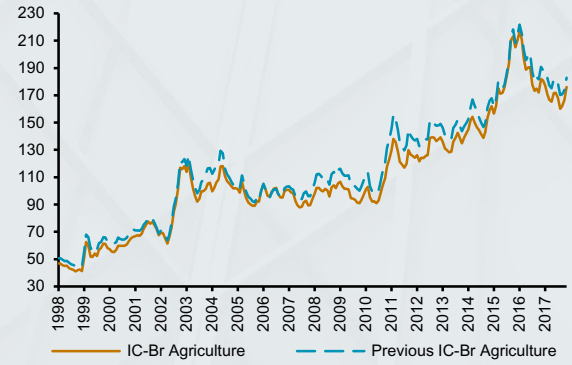
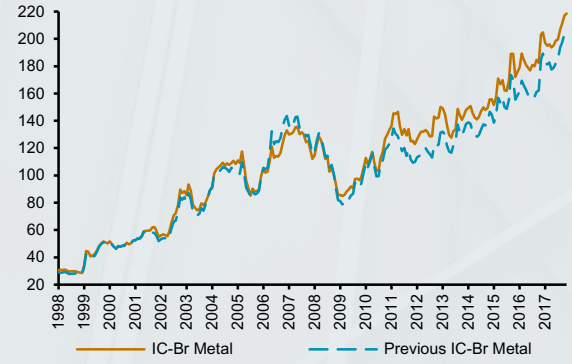


Figure 4 – IC-Br Metal
Dec/2005 = 100 (monthly average)



10/ The IPCA historical series recalculated with the classification and weighting structure of POF 2009, implemented in January 2012, was used.

11/ The adjustment consisted in withdrawing the maximization effect of the correlations from the weight of the oil, and the consequent increase of the weight of this commodity.

12/ For this exercise a simple linear regression of inflation with some explanatory variables (such as gap, exchange rate and seasonal dummies) was estimated using quarterly data from 2004 to 2017. The final result was robust to variables changes.

changes observed in the Brazilian economy and to maximize its correlation with the IPCA, considering the commodity prices relevance for inflationary cycles in Brazil. The results given by the exercises explain the efficiency gain of the revision, in terms of the identification of the impacts of international commodity price changes on the IPCA dynamics.

Figure 5 – IC-Br Energy
Dec/2005 = 100 (monthly average)

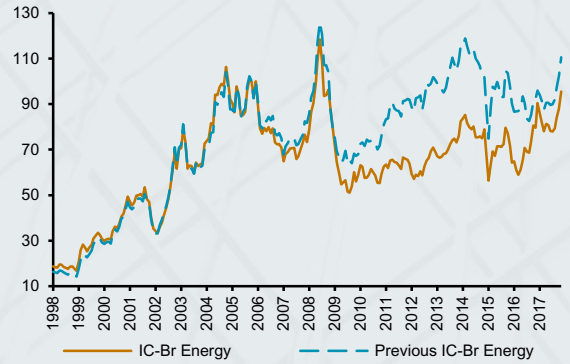
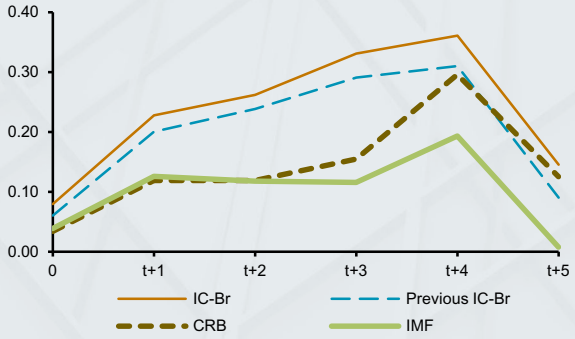
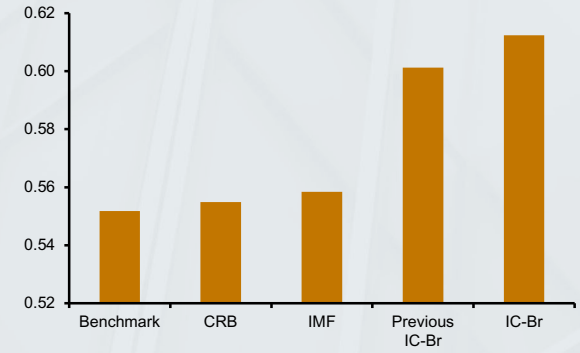


Figure 6 – Correlation with the IPCA
Months ahead



Sources: BCB, IBGE, Commodity Research Bureau and IMF

Figure 7 – Commodity Index adjustment
Adjusted R-squared



Revision of 2017 and 2018 GDP projections

This box updates the projections of the Central Bank for GDP growth in 2017 and 2018.

2017 GDP projection review

The September Inflation Report revised the projection for GDP growth in 2017 from 0.7% to 1.0%. The increase mainly reflects the impact of the results of the Quarterly National Accounts released by the IBGE for the third quarter of the year, the revision of the historical series of GDP and the sectoral statistics available for the current quarter.

Agricultural and livestock production is expected to grow 12.8%, compared to a previous estimate of 12.1%, in line with updated grain production projections and positive reviews of the quarterly accounts. The projection for the performance of the secondary sector went from -0.6% to -0.3%, mainly reflecting the improvement in the manufacturing industry, from 0.6% to 1.3%.

The services sector is expected to grow faster than previously forecasted (0.3% vs. 0.1%), especially because of reviewed projections of trade from 0.8% to 2.0%; of real estate activities and rent, from 0.7% to 1.1%; and of financial intermediation, insurance and related services, from -1.6% to -1.1%.

Within the domestic components of aggregate demand, the improvement in the projection of Gross Fixed Capital Formation (GFCF), from -3.2% to -2.5%, was associated to the recent reaction of the capital goods absorption. In addition, the revision of household consumption, from 0.4% to 1.2%, is in line with the stronger-than-expected expansion in the third quarter.

Regarding the external component of aggregate demand, the annual increase in exports was revised to 5.5%, and in imports, to 4.6% representing increases of 1.6 p.p and 2.7 p.p, respectively, in relation to previous projections, consistent with the

Table 1 – Gross Domestic Product
Accumulated in 4 quarters

% growth

	2017		2018
	III Q	IV Q[1/]	IV Q[1/]
Agriculture and livestock	11.6	12.8	-0.4
Industry	-1.4	-0.3	2.9
Mining	5.4	4.3	3.0
Manufacturing	-0.6	1.3	3.4
Construction	-6.6	-5.2	2.5
Public utilities	2.0	0.7	1.1
Services	-0.8	0.3	2.4
Commerce	-0.3	2.0	4.2
Transportation	-1.9	0.9	3.2
Communications	-2.5	-1.6	2.1
Financial institutions	-2.4	-1.1	3.1
Other services	-0.5	0.8	3.1
Rents	0.7	1.1	0.7
Public administration	-0.8	-0.9	0.8
Value added at basic prices	-0.1	0.9	2.4
Taxes on products	-0.5	1.6	3.8
GDP at market prices	**-0.2**	**1.0**	**2.6**
Households consumption	-0.5	1.2	3.0
Government consumption	-0.4	-0.8	1.0
Gross fixed capital formation	-4.2	-2.5	3.0
Exports	1.1	5.5	4.0
Imports	2.7	4.6	6.0

Source: IBGE
1/ Estimated

expansion that has been observed in the country's trade flow.

The contributions to GDP growth from the domestic demand and external sector in 2017 are estimated at 0.9 p.p and 0.1 p.p., respectively.

2018 GDP projection

The projection for GDP growth in 2018 was revised from 2.2% to 2.6%, in line with the gradual recovery of economic activity throughout the year and the prospects of its continuity in the coming quarters.

Of note, on the supply side, the revision of the projection for agricultural production, from 1.5% to -0.4%; a decline consistent with the first prognosis of the IBGE crop released in November. The industry growth was revised from 2.6% to 2.9%, reflecting expansion in all its components, especially the performance of the manufacturing and construction sectors. The latter is expected to register the first growth since 2013. The projection for the tertiary sector considers a growth of 2.4%, compared to 1.9% in the September report, mainly reflecting the positive performance of commerce (4.2%), transportation, storage and postal services (3.2 %) and other services (3.1%), compatible with the resumption of industry and consumption.

Within the domestic demand components, the expansion of household consumption is estimated at 3.0%, against 2.5% in the previous projection, considering the favorable evolution of the expanded wage bill and credit to individuals, and the increase in statistical carry over of 2017. It is worth noting the expected growth of 3.0% for GFCF, consistent with the expansion of absorption of capital goods and the expected improvement for the construction sector.

Exports and imports of goods and services in 2018 are estimated to grow by 4.0% and 6.0%, respectively, influenced by the impact of favorable outlook for global economic growth on exports and the strengthening of domestic demand on imports. The contributions of internal and external demands for the GDP growth in the year are estimated at 2.8 p.p. and -0.2 p.p., respectively.

Recent evolution in corporate credit

Figure 1 – Credit outstanding
% change YoY

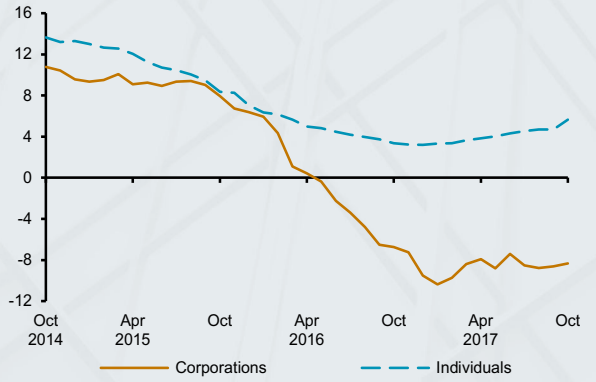


Figure 2 – Credit outstanding by debt value
Credit outstanding – R$ billions

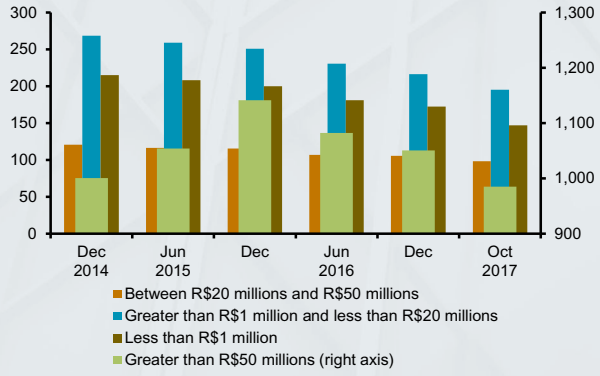
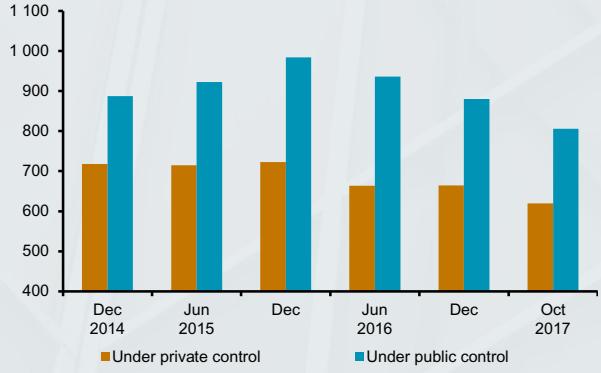


Figure 3 – Credit outstanding by origin of the capital
Credit outstanding – R$ billions



The credit market has recorded performance more consistent in the segment of credit for individuals than in the segment of corporate credit (Figure 1). The objective of this box is to identify the central aspects of the corporate credit dynamics, especially the influence of company size and the substitution of funding sources.

An interesting analysis path is that which approaches the subject of lending to corporations by its size. For that matter, it was initially considered the period from December 2014 to October 2017, which was broken down into two intervals: (i) December 2014 to December 2015 and (ii) December 2015 to October 2017.

Analysis from the point of view of borrowing shows, in the first period, an expansion of 14 percent in the balance of credit operations above R$50 million[1] (Figure 2), in contrast with generalized declines in the balance of operations below R$1 million, from R$1 million to R$20 million and from R$20 million to R$50 million. It is clear, therefore, that the major credit operations were determinant for the growth in the corporate credit portfolio, as registered in this period of deceleration in economic activity.

The increase in the balance of corporate portfolios from December 2014 to December 2015 reflected, mainly, the growth of loans granted by the financial institutions under public control, notably the R$58 billion increase in loans of the Brazilian Development Bank – BNDES (Figure 3)[2].

The period started in 2016 was characterized by an increase in uncertainties associated, mainly, with the negative impact caused by non-economic events. In this context, the total balance of corporate credit portfolio decreased R$282 billion from December

1/ This increase reflected, especially, the evolution of a portfolio of 34 companies within a sample of around 4,300 borrowers with operations above $50 million, concentrated in the segments of oil, mining, power, paper manufacturing and slaughtering.

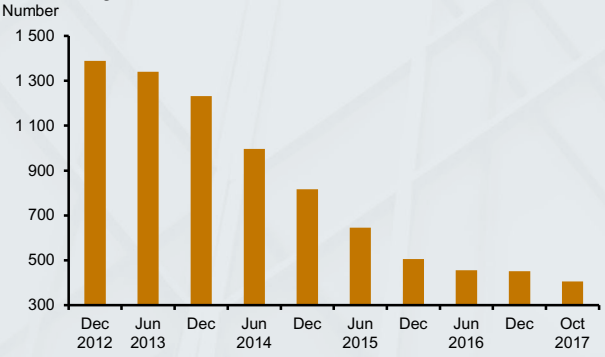
2/ It is worth mentioning that part of the increase in the balance of corporate credit portfolio reflected the impact of exchange rate variation of around 50 percent in the period, relative to operations exposed to foreign currencies. These operations represented 15.0 percent of the entire corporate credit portfolio, as of December 2015 (11.0 percent in December 2014).

2015 to October 2017, especially due to a contraction of R$156 billion in the balance of operations above R$50 million. The reduction in the portfolio of 36 borrowers – several of them pertaining to the same corporate conglomerate – explains 80 percent of this variation.

In the same way, as observed from December 2014 to December 2015, the balance of credit operations from R$20million to R$50 million, from R$1 million to R$20 million and less than R$1 million also retreated during the period.

The sectors where the sharpest reductions in borrowing occurred were, as expected, the same where the most expressive expansions occurred in the period previously analyzed.

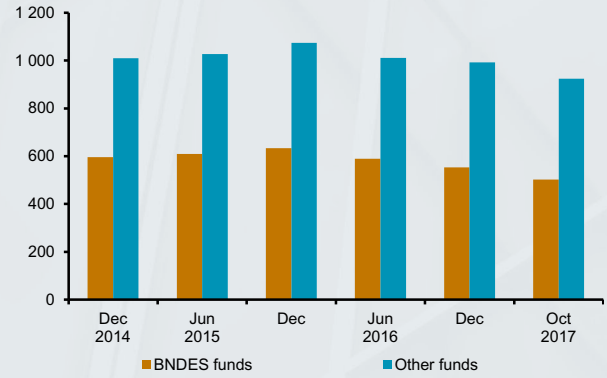
Figure 4 – Credit outstanding – corporations
Number of borrowers that represents 50% of the credit outstanding



It is worth noting the decline in the number of borrowers that represent 50 percent of the entire corporate credit portfolio (Figure 4).

It is also worth noting that, despite major banks showed a contraction in their stock of corporate credit from 2016 on, a sharper reduction occurred in the portfolio of public banks, which represented approximately 63 percent of the fall between December 2015 and October 2017 (R$178 billion). This behavior was influenced by the concentration of their operations on larger companies, exactly the segment that registered the sharpest contraction in credit from 2016 on. In turn, private banks contributed to a reduction of R$104 billion in the period, a smaller rate of shrinkage.

Figure 5 – Credit outstanding – corporations
R$ billions



From the point of view of the origin of resources, the highlights are the operations with resources from BNDES (direct and intermediated) which presented the most intense retraction (-21 percent) between December 2015 to October 2017, when compared to the decrease in other operations (-14 percent) in the same period (Figure 5).

Another relevant aspect in the recent context of financing of enterprises is the growth of capital markets, partly influenced by the reduction of the basic interest rate, by changes in costs, by credit approval policy with earmarked resources, by the National Financial System (SFN) requirements for conceding credit, and by the process of resumption of economic activity which contributes to improve balance sheets. Data from the Brazilian Financial

Figure 6 – Capital market
Transactions through october – R$ billions

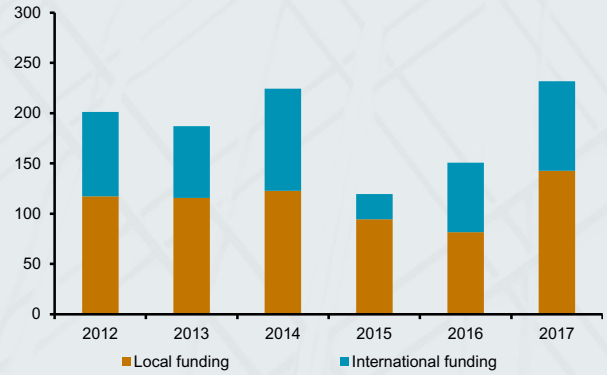
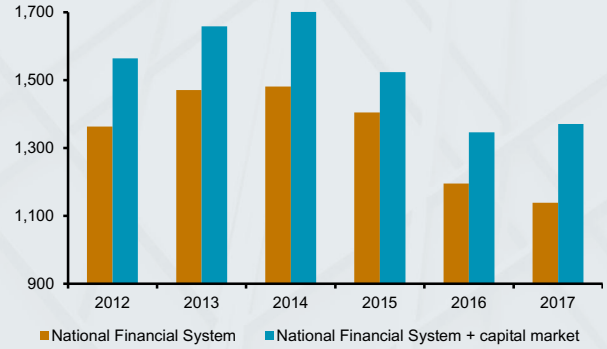


Figure 7 – New operations – corporations
Through october
R$ billions



and Capital Markets Association (Anbima) (Figure 6) make evident the significant increase in capital market funding this year – domestic emissions grew[3], up to October 2017, 75 percent in comparison to the same period of 2016, and external emissions increased 29 percent in the same period. Thus, whereas the corporate credit market shows a 4.7 percent decline during the first 10 months of the year when compared to the same period of 2016, the consolidation of these new loans with market funding capital growth reveals a growth of 1.8 percent in the same period (Figure 7). This fact suggests that the greater dynamism in capital markets compensates, in a large extent, the retraction in credit markets. It is important to observe that, depending on the profile required to operate in this market, this movement tends to be led by large companies.

In short, the evolution of credit market in the corporate segment was, in both periods analyzed, conditioned by the credit operations for larger companies and, on the side of credit supply, by the financial institutions under public control. It is worth noting that the greater dynamism in capital markets compensated the slower growth in the segment of corporate credit.

3/ Includes: Debenture, Promissory notes, Certificate of Agribusiness Receivables (CRA), Certificates of Real Estate Receivables (CRI), Receivables Investment Funds (FIDC) and stocks.

Direct investment statistics by immediate and ultimate investing country

Globalization has meant more internationalization and more complex organizational structures of transnational corporations. Among others, global value chains, differences in taxation and incentives to create companies in several countries directly impact the investment flow from these corporations to their subsidiaries and branches. In cases where the relationship between mother companies and their associates are intermediated by other companies in the same group, financial holdings or special purpose entities (SPEs) located in third countries, which act as financial conduit or pass-through or capital in transit for these flows.

This reality has relevant impacts on the statistics of direct investments, on the identification of the direct nonresident investor and on the bilateral comparisons between the statistics of the different countries. This box shows the concepts of immediate investing country and ultimate investing country, used in a complementary way to reflect the origins of direct investments, and shows their application to the statistics of foreign direct investment (FDI) in Brazil.

The international standard for the compilation and dissemination of FDI statistics guides the use of the **immediate investing country**[1] criterion. It is a simple concept: an immediate investing country is the country of domicile of the nonresident company that invested directly in the subsidiary or branch in Brazil. This criterion facilitates the comparability of bilateral statistics, since, unlike Brazil, the data sources available in most countries only allow the identification of the immediate origin of the direct investment[2].

Considering the complex organizational structures of transnational corporations, economic reasons and

1/ Paragraph 4,156 of the 6th edition of the Balance of Payments and International Investment Position Manual (BPM6), of the International Monetary Fund (IMF), and paragraphs 49, 263 and 346 of the 4th edition of the Benchmark Definition of Foreign Direct Investment (BMD4), of the Organisation for Economic Co-operation and Development (OECD).

2/ If not for this alone, this is the criterion used in the IMF's Coordinated Direct Investment Survey (CDIS), which compiles active and passive positions with the participation of 105 countries in 2016. The results of the CDIS are available at http://data.imf.org/?sk=40313609-F037-48C1-84B1-E1F1CE54D6D5.

the interests of the statistics users,, the statistical standard also contemplates the disclosure of the FDI by the **ultimate investing country**[3] criterion, in a complementary way. The ultimate investing country is the country of a nonresident investor that holds the effective economic interest in the company invested in Brazil, chiefly determined by influence over management decisions. The ultimate investor is identified by using the following analysis: starting from the resident associate, one should move up the chain of direct investment relationships until the nonresident company that has no other company as a direct investor is found.

Finally, it is worth noting that the international standard for compiling macroeconomic statistics – including those of the external sector, like direct investment statistics – aims to record **economic transactions actually occurred**, as they are carried out, and assets and liabilities positions actually incurred in the reference period.

The growing interest in complementary direct investment statistics is confirmed by the number of countries, mainly from the OECD, which have recently compiled and disseminated inventories by country of the ultimate investor. Studies with methodology and comparison of the results considering the two criteria for Canada, United States[4], United Kingdom, Italy and Japan, as well as for international bodies (IMF and OECD) are referenced in this box.

The comparison of bilateral direct investment statistics by country of the immediate and ultimate investor, based on the results of the studies cited, provides some conclusions. In all cases analyzed, the reduction of direct investment inventories by the ultimate investing country criterion allows the identification of in transit countries – not the ultimate destination – of these flows, whether or not tax havens, and the measurement of their impact. In this comparison, for example, Luxembourg stocks are reduced regarding Canada, France (approximately one-third), Italy (almost 25%) and Japan. In Netherlands, the stocks are reduced regarding Canada, France (just under 50%), Italy, England (65%) and Japan (75%).

There are also reductions regarding Switzerland (statistics reported by Canada), Belgium (France

3/ Paragraph 4,157 of BPM6 and paragraphs 54 and 55, 279 to 281, chapter 7 and annex 10 of the BMD4.

4/ The United States releases its bilateral direct investment statistics by the ultimate investing country standard, using the ultimate beneficial owner (UBO) concept.

and Italy), Jersey (United Kingdom) and Hong Kong and Singapore (Japan), which seems to indicate that there are transit countries with global performance and others with regional impact.

Conversely, the largest developed countries stand out among the countries that present a higher stock measured by the ultimate investing country criterion. The stock of direct investments of the United States rises in all analyzed countries, ranging from 5% for Italy to 75% for France. Germany's investments rise up 316% on the statistics reported by Japan. The United Kingdom, France, Japan, Italy and Canada are also often cited countries. In short, the use of intermediary companies in the completion of investment flows of investors located in developed countries to their branches and subsidiaries in the countries of destination is frequent.

In Brazil, FDI statistics compilation follows, strictly, the international methodological definitions[5]. Accordingly, FDI in the Brazilian balance of payments reflects the actual constitution of these external liabilities, verified by the Electronic Declaratory Registration, Foreign Direct Investment (RDE-FDI) module, and, usually, by the respective currency flow (chiefly through foreign exchange contracts)[6]. From these data sources, the individualized transactions microdata are used to compile the FDI.

Brazil's bilateral FDI statistics are disclosed for both flows (measured on monthly frequency) and inventories (on an annual basis), using the **immediate investing country criterion**. However, the additional compilation of direct investment statistics according to the **ultimate investing country criterion** is useful in dealing with transnational corporations operating in several countries and holding complex organizational structures with a large number of branches, subsidiaries or affiliated companies.

The source of the **FDI stock** statistics in Brazil is the Census of Foreign Capitals in the Country (Census)[7], an annual survey that collects information about both the immediate and ultimate investing country. Methodologically, the stock of FDI measured by the Census varies from year to year as a function of net inflows of direct investments and of: i) accumulated profits or losses; ii) changes in the companies' market

5/ For further details, refer to box "What is Direct Investment? How does it work in Brazil?", released with the Inflation Report of June/2017.

6/ Regarding stock conveyance and relocation of transnational corporations there is no effective inflow of foreign exchange.

7/ For further information access: http://www.bcb.gov.br/rex/censoCE/port/censo.asp?idpai=cambio.

Table 1 – Major increases in the positions of FDI – equity
By country of the immediate and ultimate investor
Positions as of December 31, 2015

US$ million

Country	Immediate	Ultimate	Change
United States	69 048	77 046	7 998
China	1 366	8 606	7 240
Italy	4 258	10 824	6 566
United Kingdom	15 549	21 894	6 345
Germany	8 323	12 472	4 149
Switzerland	11 063	14 761	3 698
France	18 437	21 309	2 872
Canada	7 574	9 791	2 217
Bermudas	2 626	4 714	2 089
Japan	17 110	18 914	1 804

Table 2 – Major reductions in the positions of FDI – equity
By country of the immediate and ultimate investor
Positions as of December 31, 2015

US$ million

Country	Immediate	Ultimate	Change
Netherlands	90 332	51 353	-38 979
Luxemburg	27 063	10 977	-16 086
Belgium	3 607	935	-2 672
Chile	7 200	5 363	-1 836
Spain	39 044	37 472	-1 572
Sweden	3 049	1 673	-1 375
Uruguay	2 436	1 432	-1 005
British Virgin Islands	2 304	1 501	-803
Cayman Islands	2 978	2 181	-797
Ireland	1 614	842	-772

value; and iii) changes in exchange rates, since companies in Brazil are valued in Brazilian reais but the statistics of the Brazilian external sector are expressed in United States dollars.

Tables 1 and 2 present the results of the comparison of the immediate and ultimate investing country criteria using the 2015 Census data. As expected, and according to international experience, countries whose stock of "FDI – equity participation" increases in the measurement by final investing country are the largest global economies and with greater commercial and financial relation with Brazil (with exception of Bermuda). Conversely, countries known as investment chanelers and tax havens figure in the list of countries whose stocks decreased the most.

This box introduced the immediate and ultimate investing country concepts, present in the international statistical standard, detailed the methodology and data sources for the compilation of bilateral inventories of FDI under these two criteria in Brazil. The results obtained for the Brazilian case are in line with the international standard, according to statistics and studies of selected countries. The conclusion is that both concepts are relevant and complementary for a more detailed analysis of the FDI.

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2017 and 2018 balance of payments projection

Table 1 – Balance of payments forecasts

US$ billion

Itemization	2016		2017		2018
	Jan-Nov	Year	Jan-Nov	Year[1/]	Year[1/]
Current account	-17.6	-23.5	-5.4	-9.2	-18.4
Balance on goods	40.8	45.0	59.4	64.0	59.0
Exports	168.6	184.5	199.7	217.0	225.0
Imports	127.7	139.4	140.3	153.0	166.0
Services	-27.1	-30.4	-30.2	-33.1	-37.7
Travel	-7.5	-8.5	-12.1	-13.5	-17.3
Other	-19.5	-22.0	-18.1	-19.6	-20.4
Primary income	-34.1	-41.1	-36.7	-42.5	-42.1
Interest	-18.8	-21.9	-19.7	-21.3	-16.9
Dividends	-15.5	-19.4	-17.3	-21.5	-25.5
Others	0.3	0.3	0.3	0.3	0.3
Secondary income	2.7	2.9	2.1	2.4	2.5
Capital account	0.3	0.3	0.3	0.4	0.4
Financial account	-10.4	-16.4	-0.6	-8.8	-18.0
Investments – assets[2/]	33.9	45.7	59.3	68.8	77.5
DI assets	7.9	12.8	2.9	5.0	5.0
Port. inv. exc. banks	-0.9	-0.7	9.7	11.0	10.0
Banks' assets	-4.7	-1.7	-4.7	-0.2	8.5
Other assets	31.5	35.3	51.4	53.0	54.0
Investments – liabilities	52.1	70.3	72.6	84.6	103.4
DI liabilities	62.9	78.2	65.0	75.0	80.0
Total shares[3/]	9.3	10.6	2.9	3.0	5.0
Debt sec. in Brazil	-24.6	-26.7	0.7	-	-
Loans and debt sec. abroad long term	-18.0	-15.5	-8.3	-7.3	-2.6
Debt sec. public	1.9	1.8	-2.7	-2.7	-
Debt sec. private	-5.2	-5.5	1.7	-	-
Direct loans	-11.5	-13.4	-1.6	-	-
Other[4/]	-3.1	1.6	-5.7	-4.6	-2.6
Loans and debt sec. abroad short term	3.0	4.4	-3.5	-5.0	-
Other liabilities[5/]	19.6	19.4	15.8	18.9	21.1
Financial derivatives	-1.1	-1.0	0.1	-	-
Reserve assets	8.9	9.2	12.5	7.0	8.0
Errors and omissions	7.0	6.9	4.5	-	-
Memo:					
Current account/GDP (%)	-1.1	-1.3	-0.3	-0.4	-0.9
FDI/GDP (%)	3.8	4.4	3.5	3.7	3.8
Rollover rate (%)	64.6	63.7	100.2	100.0	100.0

1/ Forecast.
2/ Includes direct investment, portfolio investment and other investments.
3/ Includes equities traded in stock exchanges in Brazil and abroad.
4/ Includes banks', buyers', bilateral and multilateral loans.
5/ Includes trade credit liabilities and other liabilities.

This box presents the revision of the projections for the balance of payments in 2017 and 2018. The new estimates take into account statistics released since the September Inflation Report, the evolution of domestic and international economies and the most recent data on stock and service of the country's external indebtedness.

A more favorable than expected trade balance in 2017 – sustained by price behavior, volume of commodities and gains in the terms of trade – and lower payments of interest – based on the update of the external debt position from June 2017 to September 2017 – conditioned the revision of the current account transactions deficit from US$16 billion to US$9.2 billion (0.4 percent of GDP).

The trade surplus is projected at US$64 billion, a consequence of annual expansions of 17.6 percent in exports and 9.7 percent in imports, estimated at US$217 billion and US$153 billion, respectively. The revision of trade balance reflected, mainly, the positive performance of external sales of oil, iron ore, the soybean complex and automobiles, in this order.

The estimate for the services account deficit remains at US$33.1 billion. Projections for net expenses on the leasing of equipment for international travel remained unchanged at US$17 billion and US$13.5 billion, respectively.

The projection for net interest payments in 2017 was estimated at US$21.3 billion (US$23.5 billion in the previous projection), considering the new debt service payment schedule based on the September 2017 position. Estimates for net remittances of profits were revised to US$21.5 billion (US$23 billion in the previous projection). The estimates for net inflow of secondary income remained unaltered.

The projection for net inflows of direct investment in the country (IDP) during 2017 was kept at US$75 billion (3.7 percent of GDP) largely surpassing the funding requirements forecasted for current account

transactions. The estimate for direct investments abroad (IDE) was increased from US$3 billion to US$5 billion, considering the recent flows, which showed more expressive outflows in the recent months.

With regard to portfolio investments, it is worth noting the significant build-up of assets abroad in the form of securities and, mainly, in the form of funds. This fact resulted in a forecast revision from neutral position to net outflow of US$11 billion in the year. In the scope of the portfolio investment liability, the projections for net inflows in equity and investment funds remained in US$3 billion, in line with the gradual recovery of expectations regarding the Brazilian economy.

The rollover rate for 2017 was 100 percent, calculated according to the long-term loans and securities traded, in line with the recent results and the international market outlook.

The projection of the current account deficit for 2018 changed from 1.4 percent of GDP to 0.9 percent of GDP, a result that shall be easily compensated by the projected inflow of direct investment.

The trade balance surplus is estimated at US$59 billion, an increase of US$8 billion in relation to the previous projection, due to estimates of a 8.5 percent expansion in imports and a 3.7 percent expansion in exports, which are expected to totalize US$166 billion and US$225 billion, respectively.

In the considered scenario, there were no alterations in projections for net services expenditures, which shall grow 14 percent relatively to the forecast for 2017. Net travels expenses are estimated at US$17.3 billion, in comparison with US$13.5 billion in 2017, evolution consistent with the prospects of continuity of domestic income recovery. The projection for net primary income expenditures changed from US$45.8 billion to US$42.1 billion, especially the revised debt service payments, which reduced net interest expenditures from US$20.5 billion to US$17.9 billion.

The projection for net inflows of foreign direct investment (IDP) in 2018 remained at US$80 billion (3.8 percent of GDP), standing as the major funding resource of the balance of payments. The expected investments reflect the favorable prospects for the Brazilian economy in the long-term. Brazilian investments overseas are estimated to reach

US$5 billion in 2018 (US$3 billion in the previous projection), a historically low level.

On the side of assets, the projection for portfolio investments was reviewed from neutral to net outflows of US$10 billion. The alteration reflects the prospect of continuity of the movement observed in the second half of 2017. Net inflows from non-resident investors in portfolio instruments shall reach US$5 billion in 2018, whereas net investments in securities in the country shall remain stable. The projection for the rollover rate for direct loans and long-term securities in the international market remained at 100 percent, same level expected for 2017.

The projection for the balance of payments financial gap reaches a surplus of US$3 billion, compared to a surplus of US$10 billion in the previous Inflation Report. The change incorporates the decline, from US$7.2 billion to US$3.2 billion, in the results of the Central Bank's repo credit line operations. In this context, it is projected that banks operating in the Brazilian exchange market shall reduce in US$0.2 billion the balance of its deposits held abroad.

Table 2 – Balance of payments – Financial gap[1/]

US$ billion

	2016*		2017*		2018
	Jan-Nov	Year	Jan-Nov	Year[2/]	Year[2/]
Current account	-17.6	-23.5	-5.4	-9.2	-18.4
Interest on debt securities issued in the country – expenses	-6.0	-6.0	-6.2	-6.2	-5.5
Interest on international reserves – receipts	2.7	3.0	3.4	3.8	4.0
Reinvested earnings – receipts	1.2	1.3	1.4	1.6	2.0
Reinvested earnings – expenses	-8.6	-9.1	-4.7	-5.2	-8.0
Current account – financial gap	-7.0	-12.8	0.6	-3.2	-10.9
Financial account	-7.4	-16.2	-2.0	-6.2	-23.3
Assets	37.4	46.0	62.5	67.4	67.0
Direct investment assets, other than reinvestment of earnings	6.7	11.5	1.4	3.4	3.0
Portfolio investment, except banks	-0.9	-0.7	9.7	11.0	10.0
Other investment, except banks	31.5	35.3	51.4	53.0	54.0
Liabilities	37.5	55.2	61.7	73.2	89.9
Direct investment liabilities, other than reinvestment of earnings	54.3	69.0	60.4	69.8	72.0
Portfolio investment, except reinvested interest	-24.5	-25.8	-3.9	-5.9	-0.5
Other investment	7.8	12.0	5.2	9.3	18.4
Others	-7.2	-6.9	-2.8	-0.4	-0.4
Financial gap[3/]	0.4	3.4	2.6	3.0	12.5
Net Banco Central interventions[4/]	5.1	5.1	7.2	3.2	4.0
Banks: asset changes[5/]	-4.7	-1.7	-4.7	-0.2	8.5

1/ Excludes all transactions settled through international reserves or in domestic currency, except for foreign exchange market interventions, and domestic transaction settled in reais.

2/ Forecast.

3/ + = surplus in the foreign exchange market; - = deficit in the foreign exchange market.

4/ + = increase of international reserves; - = decrease of international reserves.

5/ + = increase in the assets owned by banks; - = decrease in the assets owned by banks.

* Preliminary data.

The scenario for 2018 implies a financial gap surplus of US$12.5 billion in the balance of market payments, in comparison with a previous projection of a surplus of US$20.7 billion. The Central Bank of Brazil repurchases shall reach US$4 billion and the balance of deposits held abroad by banks shall increase US$8.5 billion.

Inflation outlook

2

This chapter presents an analysis of inflation prospects up to 2020, hence covering all calendar years for which inflation targets have been set by the National Monetary Council (CMN).

Conditional inflation projections are presented under four scenarios, depending on the conditioning assumptions for the paths of the exchange rate and the Selic rate over the forecast horizon. The conditioning assumptions may be paths originated from expectations of the Focus survey, carried out by the BCB, or paths in which these variables assume constant values over the forecast horizon.

The first two scenarios employ the interest rate path of the Focus survey, with the first one also assuming the exchange rate path of the same survey and the second one assuming that the exchange rate remains unchanged.

Two alternative scenarios assuming a constant Selic rate are presented as well. The first one assumes a constant exchange rate, while the second one employs the path originated from the Focus Survey.

All conditional projections are based on the information set available at the cutoff date of December 15, 2017, unless otherwise indicated.

It is important to highlight that the conditional inflation projections released in this Report consist of probability intervals that embody the existing degree of uncertainty at the aforementioned cutoff date. The projections depend not only on assumptions about the interest rate and the exchange rate, but also on a set of assumptions about the behavior of exogenous variables.

In its decision-making process, the Copom analyses a wide range of variables and models, for which it makes assessments based on the available information set. In exposing some scenarios that inform its deliberations, the Copom seeks to foster transparency to monetary policy decisions, thereby

contributing to its effectiveness in controlling inflation, which is its primary objective.

2.1 Revisions and short-term projections

Despite the unanticipated pressure on the administered prices, consumer price inflation remained in a path below what was expected in the last months, still reflecting the atypical evolution of food prices. In the three-month period ending in November 2017 the IPCA inflation was 0.18 p.p. below the Copom's baseline scenario as of the September Inflation Report (Table 2.1).

Table 2.1 – IPCA – Inflation surprise

% change

	2017				
	Sep	Oct	Nov	In the quarter[2/]	12 months up to Nov
Copom's scenario[1/]	0.17	0.46	0.40	1.04	2.98
Observed IPCA	0.16	0.42	0.28	0.86	2.80
Surprise (p.p.)	-0.01	-0.04	-0.12	-0.18	-0.18

Sources: IBGE and BCB
1/ Scenario at the cutoff date of the June 2017 Inflation Report
2/ Differences between monthly and accumulated values are due to rounding

After recording inflation in line with that expected in September, the IPCA again surprised in the months of October and, especially, November. In those two months, there were changes below those predicted in components of the services segment – both "underlying" and "ex-underlying" – and, mainly, of the subgroup food at-the-home. It is worth noting that the increase in electricity tariffs[13] and the rise in fuel prices mitigated part of the disinflationary surprise in the quarter.

Short-term projections

Table 2.2 – IPCA – Short-term projections

% change

	2017	2018			
	Dec	Jan	Feb	In the quarter	12 months up to Feb
Copom's scenario[1/]	0.29	0.53	0.47	1.30	3.09

Sources: IBGE and BCB
1/ Projections as of the cut-off date.

The short-term projections in the Copom's baseline scenario consider changes of 0.29 percent, 0.53 percent and 0.47 percent for the IPCA in the months of December 2017 to February 2018, respectively. This evolution would bring inflation in twelve months to 3.09 percent at the end of the period (Table 2.2), compared to 2.80 percent in November.

Despite the benign effect of switching from the second to the first level of the red flag on electric energy tariffs, the IPCA in December should show a variation close to that observed in November, due to the perspective of a slower pace of the fall in food prices and seasonal elevation of airfare prices. In January and February, the gradual normalization of food price inflation, increases in urban bus fares in several capital cities and annual adjustments in

13/ In October, the second level of the red flag was triggered (compared to the first level in September), and in the following month, the respective additional value was adjusted.

education fees tend to cause the monthly IPCA rates to accelerate.

The inflation rate in the quarter ending in February 2018 (projected at 1.30 percent) should be higher than the one observed in the same period of the previous year (1.01 percent), fostering the increase in the year-on-year (YoY) inflation rate. The acceleration in the twelve-month comparison still reflects mainly the discard of the atypically low changes occurred in the same period of the previous year.

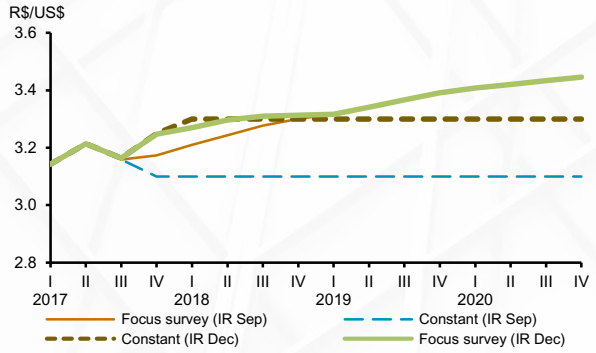
2.2 Conditional projections

When compared to the values considered in the September 2017 Inflation Report, exchange rate expectations in the Focus survey increased from R$3.20/US$ to R$3.29/US$ for the end of 2017, and remained at $3.30/US$, R$3.40/US$ and R$3.45/US$ for the end of 2018, 2019 and 2020, respectively (Figure 2.1).

In comparison to the values considered in the previous Inflation Report, expectations for the Selic rate in the same survey remained at 7.00 percent p.a. for the end of 2017 and 2018 (Figure 2.2). The expectations of the Focus survey assume that the Selic rate hits a trough of 6.75 percent p.a. at the beginning of 2018 and begins an ascent path in December of the same year, reaching 8.00 percent p.a. in April 2019, remaining at this level until the end of 2021.[14] Consistent with this Selic rate path, the projected pre-DI swap rate hits a trough in the first quarter of 2018, and increases gradually over the subsequent quarters until stabilizing in the second quarter of 2019.

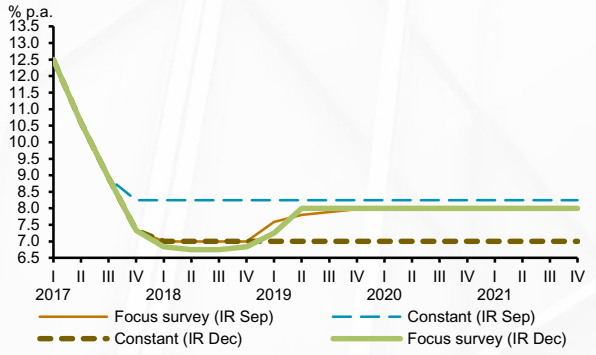
In comparison with the values considered in the previous Inflation Report, in a scenario with the Selic interest rate and the exchange rate from the Focus survey, the projection for the change in administered prices increased from 7.4 percent to 8.0 percent for 2017, and dropped from 5.2 percent to 4.9 percent for 2018. The projection for the change in administrated prices is 4.3 percent for 2019 and 4.2 percent for 2020.

Figure 2.1 – Exchange rate assumptions for projections



Note: the values refer to quarterly means.

Figure 2.2 – Interest rate target assumptions for projections

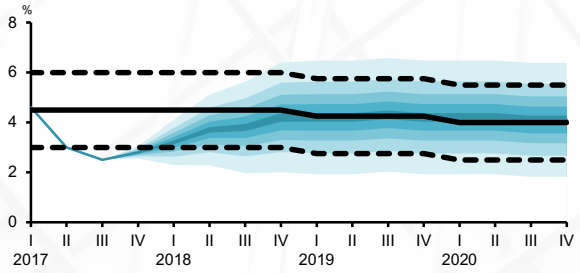


Note: The values refer to quarterly means.

14/ As described in the box "Small-scale aggregate model – 2017" (June 2017 Inflation Report), the trajectory of the 360-day pre-DI swap rate depends on the Selic rate trajectory – used as a constraint for the same period – and the trajectory of the premium (the difference between the swap rate and the expected rate for the Selic). Therefore, the swap rate throughout 2020 also depends on the Selic trajectory over 2021.

Figure 2.3 – Projected inflation with interest and exchange rates from the Focus survey

Inflation fan chart



Note: Year-on-year IPCA inflation (%).

Table 2.3 – Projected inflation with interest and exchange rates from the Focus survey

Central projection and probability intervals

Year	Q	50%		30%		10%	Central			
2017	4	2.7	2.7	2.8	2.8	2.8	2.9	2.9
2018	1	2.8	3.0	3.1	3.2	3.3	3.4	3.6
2018	2	3.1	3.4	3.6	3.7	3.8	4.0	4.3
2018	3	3.0	3.4	3.7	3.8	3.9	4.2	4.6
2018	4	3.3	3.7	4.0	4.2	4.4	4.7	5.1
2019	1	3.3	3.7	4.0	4.2	4.4	4.7	5.1
2019	2	3.3	3.7	4.0	4.2	4.4	4.7	5.1
2019	3	3.4	3.8	4.1	4.3	4.5	4.8	5.2
2019	4	3.3	3.7	4.0	4.2	4.4	4.7	5.1
2020	1	3.3	3.7	4.0	4.2	4.4	4.7	5.1
2020	2	3.3	3.7	4.0	4.2	4.4	4.7	5.1
2020	3	3.2	3.6	3.9	4.1	4.3	4.6	5.0
2020	4	3.2	3.6	3.9	4.1	4.3	4.6	5.0

Note: Year-on-year IPCA inflation (%).

The projections presented herein also depend on considerations about the evolution of reforms and necessary adjustments in the economy. The projections capture their effects through asset prices, degree of uncertainty, expectations from the Focus survey, and the structural interest rate of the economy. In addition to these channels, fiscal policy influences the conditional inflation projections through impacts on aggregate demand.

The presented projections acknowledge that the evolution of reforms – such as fiscal and lending reforms – contributes to the gradual reduction of the structural interest rate.

Projections for the four-quarter IPCA inflation rate were produced based on the combination of the above assumptions. These projections are based on a set of models and available information, combined with the exercise of judgment.

The central projection in the scenario with the interest rate and the exchange rate from the Focus survey indicates that after the YoY inflation hit 2.5 percent in 2017Q3, it rises to 2.8 percent at the end of 2017 (Figure 2.3 and Table 2.3).

The disinflation process has been broad, reaching different segments, and was accentuated by the behavior of food-at-home prices. The 12-month inflation of these prices, after reaching a peak of 16.79 percent in August 2016, pivoted, entering the deflationary field. Between November 2016 and November 2017, the 12-month home food price inflation went from 11.56 percent to -5.30 percent. This drop of approximately 16.9 p.p. contributed with about 2.7 p.p. to the IPCA inflation reduction of almost 4.2 p.p. over the same period, from 6.99 percent to 2.80 percent.

As previous quarters affected by disinflationary shocks in food prices are discarded from the calculation of the four-quarter inflation rate, the projections increase, reaching approximately 4.2 percent in 2018Q4. In this respect, the accomodative monetary policy benefits the narrowing of the level of economic slack, thus contributing to the increase of inflation and its convergence to the target.

Still in the scenario with the interest rate and the exchange rate from the Focus survey, expected inflation also reaches around 4.2 percent in the end of 2019, and reduces to 4.1 percent in 2020.

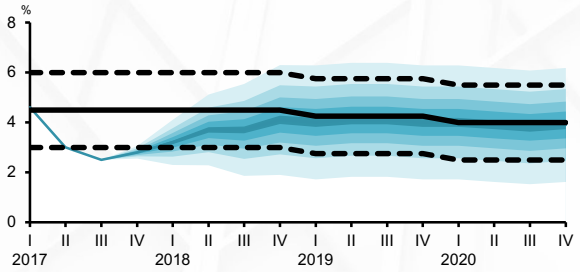
Table 2.4 – Projections in the previous and current Inflation Report – scenario with interest and exchange rates from the Focus survey

Year-on-year inflation (%)

Year	Q	September Inflation Report	December Inflation Report
2017	4	3.2	2.8
2018	1	3.6	3.2
2018	2	4.3	3.7
2018	3	4.3	3.8
2018	4	4.3	4.2
2019	1	4.3	4.2
2019	2	4.2	4.2
2019	3	4.2	4.3
2019	4	4.2	4.2
2020	1	4.1	4.2
2020	2	4.1	4.2
2020	3	4.1	4.1
2020	4	4.1	4.1

Figure 2.4 – Projected inflation with interest rate from the Focus survey and constant exchange rate

Inflation fan chart



Note: Year-on-year IPCA inflation (%)

Table 2.5 – Projected inflation with interest rate from the Focus survey and constant exchange rate

Central projection and probability intervals

Year	Q			50%				
			30%					
		10%						
				Central				
2017	4	2.7	2.7	2.8	2.8	2.8	2.9	2.9
2018	1	2.8	3.0	3.1	3.2	3.3	3.4	3.6
2018	2	3.1	3.4	3.6	3.7	3.8	4.0	4.3
2018	3	2.9	3.3	3.6	3.7	3.8	4.1	4.5
2018	4	3.2	3.6	3.9	4.1	4.3	4.6	5.0
2019	1	3.1	3.5	3.8	4.0	4.2	4.5	4.9
2019	2	3.2	3.6	3.9	4.1	4.3	4.6	5.0
2019	3	3.2	3.6	3.9	4.1	4.3	4.6	5.0
2019	4	3.1	3.5	3.8	4.0	4.2	4.5	4.9
2020	1	3.1	3.5	3.8	4.0	4.2	4.5	4.9
2020	2	3.0	3.4	3.7	3.9	4.1	4.4	4.8
2020	3	2.9	3.3	3.6	3.8	4.0	4.3	4.7
2020	4	3.0	3.4	3.7	3.9	4.1	4.4	4.8

Note: Year-on-year IPCA inflation (%).

By 2019 and 2020, several factors contribute to the projections being consistent with the inflation target, such as the favorable starting point for the projected inflation for 2018 (inertia effect), inflation expectations anchored at the target, the paths for interest rates and exchange rates from the Focus survey and the benign behavior expected for world economy variables and for administered prices. It is also assumed that the effects of shocks on inflation and activity dissipate over time.

In this scenario, the estimated probabilities that inflation will breach the upper and lower tolerance levels of the 2017 target are close to 0 percent and 90 percent, respectively. For 2018, the probabilities are around 9 percent and 18 percent for the upper and lower levels, respectively. and for 2019, the probabilities are around 13 percent and 15 percent, respectively.

In comparison with the September 2017 Inflation Report (Table 2.4), the projections for 2017 receded to around 0.4 p.p. mainly due to the lower-than-expected inflation rate for the three-month period of September to November (0.86 percent vs. 1.04 percent) and the revised projection for December.

For 2018, the projections fell about 0.1 p.p, mainly because of the lower inertia stemming from the lower 2017 inflation projection and the fall of administered prices projections. As for 2019, the inflation determinants offset.

In comparison with the December Copom Meeting (211th Copom meeting), the projections were reduced by approximately 0.1 p.p. for 2017 (see 211th Copom Minutes), as a consequence of the lower-than-expected inflation for November and the revised projection for December. For 2018 and 2019 the projections remained stable.

The hybrid scenario with constant exchange rate assumes the Selic rate from the Focus survey, but is conditioned on a constant exchange rate at R$3.30/US$ throughout the forecast horizon. The inflation projection for 2017, around 2.8 percent (Figure 2.4 and Table 2.5), is similar to the previous scenario (Table 2.6) basically because of the short projection horizon. For 2018, 2019 and 2010, inflation projections are around 4.1 percent, 4.0 percent and 3.9 percent, respectively. These projections are lower than in the previous scenario because of the

Table 2.6 – Central projections in different scenarios

Year	Q	Interest and exchange rate from Focus survey	Interest rate from Focus survey and constant exchange rate	Constant interest and exchange rate	Exchange rate from Focus survey and constant interest rate
2017	4	2.8	2.8	2.8	2.8
2018	1	3.2	3.2	3.2	3.2
2018	2	3.7	3.7	3.7	3.7
2018	3	3.8	3.7	3.7	3.7
2018	4	4.2	4.1	4.0	4.1
2019	1	4.2	4.0	4.0	4.1
2019	2	4.2	4.1	4.1	4.3
2019	3	4.3	4.1	4.2	4.4
2019	4	4.2	4.0	4.1	4.4
2020	1	4.2	4.0	4.2	4.4
2020	2	4.2	3.9	4.2	4.4
2020	3	4.1	3.8	4.1	4.3
2020	4	4.1	3.9	4.2	4.4

Note: Year-on-year IPCA inflation (%).

Table 2.7 – Projected inflation with constant interest and exchange rates

Central projection and probability intervals

Year	Q	50%		30%		10%	Central			
2017	4	2.7	2.7	2.8	2.8	2.8	2.9	2.9		
2018	1	2.8	3.0	3.1	3.2	3.3	3.4	3.6		
2018	2	3.1	3.4	3.6	3.7	3.8	4.0	4.3		
2018	3	2.9	3.3	3.6	3.7	3.8	4.1	4.5		
2018	4	3.1	3.5	3.8	4.0	4.2	4.5	4.9		
2019	1	3.1	3.5	3.8	4.0	4.2	4.5	4.9		
2019	2	3.2	3.6	3.9	4.1	4.3	4.6	5.0		
2019	3	3.3	3.7	4.0	4.2	4.4	4.7	5.1		
2019	4	3.2	3.6	3.9	4.1	4.3	4.6	5.0		
2020	1	3.3	3.7	4.0	4.2	4.4	4.7	5.1		
2020	2	3.3	3.7	4.0	4.2	4.4	4.7	5.1		
2020	3	3.2	3.6	3.9	4.1	4.3	4.6	5.0		
2020	4	3.3	3.7	4.0	4.2	4.4	4.7	5.1		

Note: Year-on-year IPCA inflation (%).

depreciation trajectory of the exchange rate from the Focus survey considered in the previous scenario.

In this scenario, the estimated probabilities that inflation will breach the upper and lower tolerance levels of the 2017 target are around 0 percent and 90 percent, respectively. For 2018, the probabilities are around 8 percent and 21 percent, respectively, and for 2019, the probabilities are around 10 percent and 18 percent, respectively.

This Inflation Report also presents conditional projections that assume a constant Selic rate. In this case, the Selic rate is assumed to remain at 7.00 percent p.a., which corresponds to the rate determined at the Copom's December meeting.

In the scenario with constant interest rate and exchange rate (throughout the projection horizon), the inflation projection is around 2.8 percent in 2017 and 4.0 percent in 2018 (Table 2.7). The projection for 2018 is lower than that in the previous scenario, because the constant Selic rate path leads to higher swap pre-DI rates, resulting in higher real interest rate and, therefore, lower inflation. Conversely, projections for 2019 and 2020 at 4.1 percent and 4.2 percent, respectively, are higher. The reason is that, in the previous scenario, the Selic rate extracted from Focus survey exceeds 7.00 percent p.a. in the beginning of 2019, which leads to higher swap pre-DI rates and, as a consequence, to lower inflation.

Finally, in the hybrid scenario with exchange rate from the Focus survey and constant Selic rate, the inflation projection is approximately 2.8 percent in 2017 and 4.1 percent in 2018 (Table 2.8). Compared with the previous scenario, the inflation projection for 2018 is higher, because of the path with exchange rate depreciation extracted from the Focus survey. For this same reason, the projections of inflation in this scenario, for 2019 and 2020, are higher, around 4.4 percent in both years.

2.3 Monetary policy conduct and balance of risks

The set of economic activity indicators reported since the last Copom meeting shows signs consistent with a gradual recovery of the Brazilian economy.

Table 2.8 – Projected inflation with exchange rate from the Focus survey and constant interest rate

Central projection and probability intervals

Year Q			50%				
			30%				
			10%				
				Central			
2017 4	2.7	2.7	2.8	2.8	2.8	2.9	2.9
2018 1	2.8	3.0	3.1	3.2	3.3	3.4	3.6
2018 2	3.1	3.4	3.6	3.7	3.8	4.0	4.3
2018 3	2.9	3.3	3.6	3.7	3.8	4.1	4.5
2018 4	3.2	3.6	3.9	4.1	4.3	4.6	5.0
2019 1	3.2	3.6	3.9	4.1	4.3	4.6	5.0
2019 2	3.4	3.8	4.1	4.3	4.5	4.8	5.2
2019 3	3.5	3.9	4.2	4.4	4.6	4.9	5.3
2019 4	3.5	3.9	4.2	4.4	4.6	4.9	5.3
2020 1	3.5	3.9	4.2	4.4	4.6	4.9	5.3
2020 2	3.5	3.9	4.2	4.4	4.6	4.9	5.3
2020 3	3.4	3.8	4.1	4.3	4.5	4.8	5.2
2020 4	3.5	3.9	4.2	4.4	4.6	4.9	5.3

Note: Year-on-year IPCA inflation (%).

The economy continues to operate with a high level of economic slack, reflected in the low industrial-capacity utilization indices and, mainly, in the unemployment rate.

The global outlook remains favorable, as the global economic activity has been recovering without excessively pressuring the financial conditions in the advanced economies, which helps to maintain risk appetite towards emerging economies.

Inflation expectations from the Focus survey stand around 2.8 percent for 2017. For 2018, 2019 and 2020, expectations remain at around 4.0 percent, 4.25 percent and 4.00 percent, respectively.

The baseline scenario for inflation has evolved, to a large extent, as expected. Inflation developments remain favorable, with diverse measures of underlying inflation at low or comfortable levels, including inflation components that are most sensitive to the business cycle and monetary policy.

At the December Copom meeting (211th meeting), the Committee unanimously decided to reduce the Selic rate by 0.5 percentage point, to 7.0 percent p.a., without bias. The Committee judges that convergence of inflation to the target over the relevant horizon for the conduct of monetary policy, which includes 2018 and 2019 calendar years, is compatible with the monetary easing process.

On that occasion, the Committee conveyed that the baseline inflation scenario involves risk factors in both directions. On the one hand, the combination of (i) possible second-round effects of the ongoing favorable food price shock and of low current levels of industrial goods inflation, and (ii) the possible propagation of the low level of current inflation through inertial mechanisms, including the components that are most sensitive to the business cycle and monetary policy, may lead to a lower-than-expected prospective inflation trajectory. On the other hand, (iii) frustration of expectations regarding the continuation of reforms and necessary adjustments in the Brazilian economy may affect risk premia and increase the inflation path over the relevant horizon for the conduct of monetary policy. This risk intensifies in the case of (iv) a reversal of the current benign global outlook for emerging economies.

The Committee judges that economic conditions prescribe an accommodative monetary policy,

i.e., interest rates below the structural level. The Committee emphasizes that the evolution of reforms and necessary adjustments in the Brazilian economy contributes to a reduction of its structural interest rate. The Committee will continue to reassess estimates of this rate over time.

The Copom stresses that the evolution of the baseline scenario, in line with expectations, and the stage of the monetary easing cycle made it appropriate to reduce the Selic rate by 0.5 percentage point at its December meeting. Regarding the next meeting, provided the Committee's baseline scenario evolves as expected, and taking into account the stage of the monetary easing cycle, at this time the Copom views an additional moderate reduction of the pace of easing as appropriate. The Committee views this guidance as more susceptible to changes in its baseline scenario and balance of risks than in the previous meeting. Going forward, the Committee judges that the current stage of the cycle recommends caution in conducting monetary policy. The Copom emphasizes that the monetary easing process will continue to depend on the evolution of economic activity, the balance of risks, possible reassessments of the extension of the cycle, and on inflation projections and expectations.

Appendix

Banco Central do Brasil Management

Monetary Policy Committee (Copom)

Banco Central do Brasil Management

Board of Governors

Ilan Goldfajn
Governor

Carlos Viana de Carvalho
Deputy Governor for Economic Policy

Isaac Sidney Menezes Ferreira
Deputy Governor for Institutional Relations and Citizenship

Maurício Costa de Moura
Deputy Governor for Administration

Otávio Ribeiro Damaso
Deputy Governor for Regulation

Paulo Sérgio Neves de Souza
Deputy Governor for Supervision

Reinaldo Le Grazie
Deputy Governor for Monetary Policy

Sidnei Corrêa Marques
Deputy Governor for Licensing and Resolution

Tiago Couto Berriel
Deputy Governor for International Affairs and Corporate Risk Management

Members of the Monetary Policy Committee (Copom)

Members

Governor
Ilan Goldfajn

Deputy Governor
Carlos Viana de Carvalho

Deputy Governor
Isaac Sidney Menezes Ferreira

Deputy Governor
Maurício Costa de Moura

Deputy Governor
Otávio Ribeiro Damaso

Deputy Governor
Paulo Sérgio Neves de Souza

Deputy Governor
Reinaldo Le Grazie

Deputy Governor
Sidnei Corrêa Marques

Deputy Governor
Tiago Couto Berriel

Heads of Department Participating in the Copom Meetings (Circular nr. 3,868/2017)

Department of Banking Operations and Payments System – Deban
Flávio Túlio Vilela

Department of Economics – Depec
Tulio José Lenti Maciel

Department of Foreign Reserves – Depin
Ariosto Revoredo de Carvalho

International Affairs Department – Derin
João Barata Ribeiro Blanco Barroso

Open Market Operations Department – Demab
João Henrique de Paula Freitas Simão

Research Department – Depep
André Minella

Acronyms

Anbima	Brazilian Financial and Capital Markets Association
BCB	Central Bank of Brazil
BMD4	OECD Benchmark Definition of Foreign Direct Investment
BNDES	Brazilian Development Bank
BoP	Balance of Payments
BPM6	IMF Balance of Payments 6ª Issue
Caged	General File of Employed and Unemployed Persons
CCI	Consumer Confidence Index
CDIS	Coordinated Direct Investment Survey
Censo	Census of Foreign Capitals in Brazil
Copom	Monetary Policy Committee
Depec	Department of Economics
Depep	Research Department
Derin	International Affairs Department
DIA	Direct Investment Abroad
Dstat	Department of Statistics
EC	Exports Coefficient
EP	Employed Population
FDI	Foreign Direct Investment
FDI	Foreign Direct Investments
Fed	Federal Reserve
Fenabrave	National Federation of Automotive Vehicle Distribution
FGTS	Employment Compensation Fund
FGV	Getulio Vargas Foundation
FOMC	Federal Open Market Committee
GFCF	Gross Fixed Capital Formation
IBGE	Brazilian Institute of Geography and Statistics
IC-Br	Commodities Index – Brazil
ICI	Industrial Confidence Index
ICOM	Commerce Confidence Index
ICS	Services Confidence Index
IMF	International Monetary Fund
INSS	National Social Security Institute
IP	Imports Penetration
IPA-DI	Broad Producer Price Index – Domestic Supply
IPCA	Extended National Consumer Price Index
MTb	Ministry of Labor
Nuci	Installed Capacity Utilization Level
NWAP	Non Working Age Population
OECD	Organisation for Economic Co-operation and Development
p.p.	Percentage points

PIM	Monthly Industrial Survey
PIM-PF	Monthly Industrial Survey – Physical Production
PJ	Corporations, Corporate entities
PMS	Monthly Service Survey
PNAD Contínua	Continuous National Household Sample Survey
PNLF	Population Not in Labor Force
POF	Consumer Expenditure Survey
PPI	Broad Producer Price Index
PSND	Public Sector Net Debt
RDE	Electronic Declaratory Registration
SE	Self-employed workers
SFN	National Financial System
SPE	Specific Purpose Society
TRU	Table of Resources and Uses
UBO	Ultimate Beneficial Owner
UP	Unemployed Population
USA	United States of America
VAR	Autoregressive Vector
VTI	Cost of Industrial Transformation