Inflation outlook

6

This chapter of the *Inflation Report* shows the assessment by the Monetary Policy Committee (Copom) on the performance of the Brazilian economy and the international scenario since the release of the March 2008 *Report*. It also provides the analyses of the inflation prospects up to the second quarter of 2010 and for Gross Domestic Product (GDP) growth up to the end of 2008. One should highlight that, in this *Inflation Report*, Copom starts to systematically release inflation projections for a period of two years, with the first period being the one that immediately follows the *Report* release month. This procedure is similar to the one adopted in case of *Reports* released in each December. Thus, *Reports* published in March, June and September, which used to consider inflation forecasts only for the current year and the next, henceforth will contain forecasts for the next eight quarters. The inflation forecasts are presented in two main scenarios. The first, named reference scenario, presupposes that the Selic rate will remain unchanged during the forecast horizon, at 12.25% per year, the level decided by Copom in its last meeting on June 4 and 5, and that the foreign exchange rate will remain at R$1.65/US$. The second, named market scenario, uses the paths for Selic rate and for the foreign exchange rate based on the survey carried out by Brazilian Central Bank's Gerin with private sector analysts, until the cutoff date of June 13, 2008. One should highlight that these scenarios serve only to signal the monetary policy decisions, and its assumptions do not consist and cannot even be seen as Copom's forecasts about future behavior of interest and foreign exchange rates.

Inflation and GDP growth forecasts mentioned in this *Report* are not point estimates; they specify probability intervals which evince the degree of uncertainty prevailing in the above-mentioned cutoff date. The inflation forecasts do not depend only on the assumptions about interest and foreign exchange rate, but also on a set of assumptions about the behavior of exogenous variables. The most likely set of assumptions considered by Copom is used to construct the scenarios to which the Committee attaches the greatest weight on making the interest rate decision. By exposing them, the Committee seeks to foster transparency to monetary policy decisions, contributing to its effectiveness in controlling inflation, which is its primary target.

6.1 Inflation determinants

The IPCA measured inflation reached 2.88% over the year up to May, against 1.79% in the same period of 2007. Since January, the twelve-month rate stands higher than the target's center, with an increasing deviation since then. In fact, the twelve-month inflation up to May stands at 5.58% (against 4.56% in January and 3.18% in May 2007). In this way, the consumer inflation continues to follow the upward trend initiated in 2007, thereby changing the benign scenario existing in the previous year. Behind these increases there are structural factors which tend to be persistent, such as the major demand by big Asian countries – China and India – and the displacement of some crop productions, as maize, in favor of the biofuel production.

Additionally, transitory factors, such as weather conditions, also put pressure on food prices, as well as tariff and nontariff restrictions on the trading of specific products by several countries in the latest months. Recently, a more intensive increase of petroleum prices and high readjustments on prices of some nonagricultural commodities, for example, iron ore joined up with the above factors. Another important difference in the inflation dynamics, compared to the usual pattern, arises from the behavior the administered prices, which, in 2007, for the first time since the inception of the Inflation Targeting System in 1999, registered increases lower than that of market prices, a trend which persists in 2008. In fact, while the market prices grew 3.62% over the year up to May and the administered and monitored prices grew 1.18%. The behavior of nontradable prices indicates that the demand pressure continues to have a relevant impact on the inflation behavior. Therefore, market prices and nontradables increased 7.70% in twelve months up to May, while the increase in prices of tradable goods also stood higher than the target's center (7.90% in twelve months up to May). In the first five months of the year, market prices continued rising, while monitored prices stood contained. In the aggregated, however, the IPCA registered an important growth.

The GDP at market prices grew 5.8% in the first quarter of 2008 in relation to the same quarter of the previous year and, according to IBGE's seasonally adjusted data, 0.7%, in relation to the last quarter of 2007, when it grew

1.6% against the previous quarter. From the production viewpoint, one should note the industrial sector growth, of 6.9% compared to the same period of the previous year, while the agricultural sector and the services sector reached, 2.4% and 5.0% respectively. Concerning demand, highlighted was the gross fixed capital formation, which expanded 15.2%, against the same quarter of the previous year, followed by household and government consumption, expansions of 6.6% and 5.8% respectively, compared to the same quarter of the previous year. Just as occurred since the first quarter of 2006, the growth was dictated exclusively by domestic market. In fact, domestic demand contributed with -2.6 percentage points (p.p.) to GDP expansion of 5.8 p.p. in the first quarter of this year, the lowest value since the fourth quarter of 1996. Copom considers that, even with the weakening prospects of global economy compared to the situation depicted in the last *Report*, the current behavior of domestic demand activity should continue, with some moderation, in the next months, favored by several sustaining factors that still impact on economic activity, such as credit and employment expansion. Taking into account, additionally, the narrowing in the factor market observed in the latest quarters, the Committee assesses that the pace of demand expansion remains a dominant element in the balance of risks affecting the inflation behavior.

At a moment when the confidence in the pace of global economy expansion decreases, the dynamics in household consumption activity has contributed importantly for sustaining the domestic demand. In fact, in the first quarter of 2008, household consumption reached 6.6% as compared to the same period of the previous year. This robust performance may also be seen, and anticipated, by data related to retail sales. Retail sales grew 12.0% in the first quarter of 2008 and 10.2% in the last twelve months up to March. One should highlighted the increase in furniture and appliances sales (17.3%), favored by the continued growth of the total payroll and by improved credit conditions, as well as in sales of fabrics, clothing and footwear (13.3%). Additionally, sales of vehicles, motorcycles, auto parts and accessories, which are included only in the expanded sales index, increased a significant 21.4% in the first quarter.

Expansion of economic activity has produced positive effects on the labor market. The employed population, according to the PME, increased 4.3% as compared to April 2007, while the real average earnings usually received grew 2.8%, causing the total real payroll to reach 7.2%. On the other hand, also in April, the manufacturing industry employment level registered a 4.0% growth as compared to the same period in 2007, according to CNI data. Referring to formal jobs, data released by MTE indicated its growth intensification in 2008, with the creation of 849 thousand job positions up to April, more than a half of the number of positions created in 2007, when it registered the highest annual balance in Caged's historic series. In percentage terms, formal employment expansion in 2008 up to April was led by the construction industry (16.3%), trading (6.5%), manufacturing industry (6.4%) and services (5.5%). The favorable developments on the labor market, strengthened the perception, expressed by the Copom in previous *Reports*, that the total payroll will continue to be one of the pillars for sustaining aggregated demand. Among other reasons to this, there is the fact that the positive performance of the labor market has contributed to maintain consumer confidence indices at high levels.

The availability of household credit, favored by macroeconomic stability and institutional advances, notwithstanding the increase of funding costs by financial institutions, has been another important element of consumption incentive. In twelve months up to April, financing system's credit (with free resources) to individuals increased 34.1%, with emphasis to the expansion of leasing operations (124.1%). One should still mention that the credit expansion has been accompanied by the lengthening of the average term of the credit operations and by the stabilization in delinquency rates. Concerning the prospective scenario, market analysts and banking sector agents expect credit will continue to increase in 2008, however with some moderation, mainly in some segments, such as the real estate credit. This assessment finds support, for instance, in the labor market formalization process, in the increase of population's bankarization and improvements of the institutional environment, which have sustained personal credit growth in 2008.

Investment has proven to be the most dynamic component of domestic demand. After the growing 10% in 2006 and 13.4% in 2007, the Gross Fixed Capital Formation (GFCF) increased, in real terms, by 15.2% in the first quarter of 2008, against the same period of the previous year. As a GDP share, the GFCF moved from 17.4%, in the first quarter of 2007, to 20.0%, in the first quarter of 2008. The investment upturn mirrors the heating of activity in an environment of economic stability and increases of companies' earnings.

There is evidence that credit expansion would be helping sustain investment expansion. In fact, free resource credit to companies grew 35.7% in twelve months up to April, 10.3% only in this year. However, loan disbursements and financing through the BNDES system grew 45.4% in the first quarter of 2008 compared to the same period of the previous year. Besides, on the capital market, the volume of public offer (US$5.3 billion up to May) as well as the placement of debentures (R$1.6 billion up to May 2008, excluding issuances carried out by leasing companies) contributed to finance the investment in practically all sectors. In view of this, there are signs that capital market activity will be intensified in the second half of the year. On the one hand, the appreciation of the real also favored investment growth, in an important way, by reducing the cost of imported capital goods. On the other hand, the enhancement of PAC implementation process must expand public investments in infrastructure. In short, even in context of a moderate slowdown of world economy this year and greater volatility in the world markets since mid-2007, the combination of earnings and high confidence, linked to favorable financing conditions, should contribute to the continuity of an investment positive performance.

According to IBGE, government consumption grew 5.8% in the first quarter of 2008, in relation to the same period of 2007; this development was accompanied by strong increase in public revenues. In fact, despite not counting anymore on inflows from the Provisional Tax on Financial Operations (CPMF), the Central Government's revenues grew 18.1% up to April compared to the same period of the previous year. On the other hand, ICMS collection, the main state tax, increased 7.6%. Faced with the current budget-earmarking framework in the country and public policy guidelines, it is expected that growth of government consumption will continue in the next quarters, even with the downturn in the pace observed at the beginning of the year.

Regarding the external sector, after registering surplus of US$40 billion in 2007, balance of trade showed surplus of US$8.7 billion in the first five months of 2008, 48.4% lower than that observed in the same period of previous year. This result is due to an amount of US$72.1 billion in exports and imports of US$63.4 billion. Besides the relative reduction in the performance of exports, one should note that the partial results of this year were negatively affected by important facts such as the strike of Federal Revenue auditors, the delays in grain harvest and the lockout of farming products in Argentina. Actually, these factors were absent or very attenuated in May, apparently with immediate effects on the month's balance of trade, with surplus of US$4.1 billion. In this way, even if the balance of trade shows a new cutback in

2008, it is worth noting that forecasts based on extrapolations of recent balance of trade performance may overestimate the observed retraction in the year.

Still concerning external trade, after growing 5.5% in 2007 (against 3.3% in the previous year), the exports rose 6.9% in the first quarter, the first contraction since 2003, on this basis of comparison, reflecting external demand slowdown and the absorption of part of the previously exported production, by the domestic market. On the other hand, after expanding 22% in 2007 (against 16.1% in 2006), the imports expanded 18.4% in the first four months of the year. The fall in exports was partially offset by increases in export prices, which, even after rising 12.5% in 2006 and 10.5% in 2007, moved up a significant 22.1% in the first four months of the year. The import prices, which grew 8.2% in 2007 (against 6.9% in 2006), also strongly increased in the first four months of the year (21.3%). In this context, still anticipating for 2008 balance of trade lower figures than those observed in 2007 (strictly, partial results have already been registered), Copom does not foresee abrupt reversal in the balance of trade in the short term.

It is important to observe that the high growth in imports reflects, largely, the significant increase in external purchases of capital goods, which, after growing 32.1% in 2007, continues to accelerate on the margin. In fact, the growth in the first four months topped 33.6%. Partially mirroring these developments, net exports contribution to aggregate demand growth was negative by 2.6 p.p. in the first quarter of 2008, as occurred in previous years (-1.4 p.p. in 2006 and 2007). The evolution of net inflows mirrors the effects of domestic economic activity acceleration *vis-à-vis* the situation of our trade partners, as well as the strengthening of Brazilian assets prices, especially of the foreign exchange rate. Despite its relevance to mitigate inflationary pressures, evidence shows that net exports became less effective as an auxiliary instrument in the maintenance of price stability. On the other hand, still negatively biased by the mentioned factors in the penultimate paragraph, the Committee recognizes that, concerning current transfers, the most plausible scenario is that which considers an assumption of deficit for 2008. In fact, in the first four months, current transfers showed deficit of US$14.1 billion, which corresponded to 3.1% of GDP, against surplus of 2% registered in the same period of the previous year. In the last twelve months, deficit topped US$14.7 billion, meaning 1.08% of GDP, while direct foreign investments net inflows totaled an equivalent 2.75% of GDP.

Future paths of external accounts and of net external demand will not only depend on domestic economy developments, but also, in an important way, on the global economic context. Therefore, one should note that the external scenario remains characterized by a tendency of modest slowdown in activity, now accompanied by the renewed intensification of inflationary pressures.

The United States economy seems to go through a stagnation period since the final quarter of 2007, and continues to suffer the impact of the real estate crisis, with effects on the weakening labor market, which, coupled with high prices of petroleum derivatives, affects consumers' confidence, and contributes importantly to depress outlays. Though the influence of monetary and fiscal incentives may limit the risk of significant contraction in activity, the dominant scenario seems to indicate a more consistent recovery only in 2009. Even after significant strengthening of relevant financial institutions' assets, uncertainty remains about the extension and magnitude of the American mortgage crisis development within the USA and Europe banking system, as well as the impact they will have on the credit access conditions by companies and households. Therefore, doubts persist over the capacity of the monetary and fiscal policy measures implemented by USA authorities to soften in a timely manner the weaknesses of economy, against persistent financial system difficulties. Notwithstanding some reduction in systemic risk perception since mid-March, such difficulties might be aggravated by cyclic deterioration of credit quality, which would reinforce the already existing contractive tendency of financial conditions, which would increase the risk of slowdown intensification. Prospects on activity in Europe – notwithstanding favorable indicators in Germany – and in Japan also continue pointing to a negative direction, although, up to the moment, existing concerns are not as high as those with the USA economy.

One should observe that, notwithstanding the prospects of continuing slowdown in central economies, global inflationary pressures have intensified. Somehow, this mirrors the strong growth shown by emerging economies, which, up to now, apparently were barely affected by the USA mortgage crisis, counteracting the effects of slowdown in mature economies. Even in these economies, however, inflationary pressures have been intensified. The inflation up to May in the USA, United Kingdom and Euro Area, stood, respectively, at 1.5 p.p., 0.8 p.p. and 1.8 p.p. higher than the observed values in the same month of previous year. In the case of Japan, twelve-month inflation up to April stood at 0.8 p.p. higher than the one registered in the same period of 2007. In emerging economies, inflation slowdown has been even more significant. For example, the twelve months inflation up to May in Chile, Peru and South Africa stood, respectively, at 5.5 p.p., 4.5 p.p. and 4.1 p.p. higher than the value registered in the same period of the previous year. Depending on the region, these developments mirror, to a higher or lower extent, pressures from the demand growth relative to the availability of production factors and the tendency of price increase of raw materials.

Given this situation, tendency, in emerging economies, is one of continued contractionary monetary policy. In mature economies, inflation acceleration, which in some cases also starts to have effects on medium-term inflationary expectations, led to substantial change in the stance and communication by monetary authorities, who started to emphasize their respective worries about inflation. Despite the remainder risks of USA credit crisis, and the need for consolidating the systematic risk cutback, apparently limit the prospects for more incisive actions against inflation pressures in mature economies, also in these cases the general tendency must be one of gradual adoption of restrictive measures.

The volatility and risk-aversion indicators in international financial markets stood at relatively high levels since the last *Inflation Report*. However, the re-evaluation of the Brazilian sovereign risk to investment grade by important rating agencies tends to reduce the sensitivity of Brazilian assets prices to the international scenario, and contributes to mitigate, but not eliminate, the difficulties experienced by global economy on economic activity in Brazil, whose dynamics has been sustained essentially by domestic demand. In summary, since the release of the last *Inflation Report*, the central prospective scenario for the world economic activity continues pointing to a moderate slowdown, accompanied by important rises of inflationary pressures and by monetary policy reorientation towards containing price upsurges.

In this way, the prospects for the behavior of prices of the Brazilian main export products – especially of commodities – continue shrouded in considerable uncertainties. Generally, however, prices of commodities still remain at historically high levels; being subject to corrections as consequence of possible cutbacks in global demand, especially from the USA and Europe, despite the demand arisen from important emerging economies contributes to cool off this movement. On the other hand, interest rates at relatively low levels in mature economies, and the rising concern about inflation, may introduce a renewed search for commodities as a tool for anti-inflationary protection. While there is some controversy about the speculative role in recent behavior of commodities prices, the price trends of raw materials, not negotiated on the stock market, such as iron ore, indicates the underlying importance of supply and demand fundamentals.

In relation to aggregate supply, the three sectors showed positive performance in the first quarter of 2008. Industry was strongly accelerated, with growth rate (6.9%) markedly higher than the one observed in the previous year (4.9%). In fact, industrial production expansion, against the same period of the previous year, was the highest since the first quarter of 2005. The services sector also showed positive result, with increase of 5% (4.7% in 2007). On the other hand, the poorest performance was in the farm sector, which grew 2.4% (5.3% in 2007), which is due to some extent to the postponed harvest of some important crops.

After a sharp increase of 6% in 2007 – the highest rate in the latest three years and the second highest since 2001 – industrial production accelerated and expanded 7.3% in the first four months of 2008, the highest rate since 1996. In these months, manufacturing industries grew 7.4% and the mining sector, 5.9%. While the former still shows signs of increase on the margin, the latter suggests a stabilization pace. One should highlight in the recent behavior in industrial production – more common in recent years – the manufacturing industry has grown more than the mining sector, a position which is aligned to the greater domestic demand upturn. Data already released in the latest months point to the continuity of the industrial growth cycle, even at a pace conditioned by occasional limitations to the supply expansion.

While from a supply viewpoint GDP grew 5.8% in the first quarter, compared to the same period of previous year, from the demand side – excluding inventory variation – growth reached 5.2%. From the restricted viewpoint of the industrial sector, FGV´s May Outlook Survey shows that, after remaining for more than four months above 100 since last October, – a level higher than that in which a number of companies assesses that inventories are insufficient surpasses that which evaluates that they are oversupplied – the inventory level indicators is again around 100 since February, which suggests that stocks would have returned to the level planned by the surveyed companies. On the other hand, to CNI, at the end of March, inventories of final goods remained at a level higher than the one registered in the same period of 2007. Besides, the difference between observed and planned inventories, which had dropped to lower than 50 in the last quarter of 2007 – level which shows that the effective demand is higher than that anticipated – returned to a level higher than 50 (50.2) in the first quarter of 2008. Thus, there seems to have been the adjustment in inventory levels at the beginning of the year, which was forecasted in the last *Report*.

The Nuci (capacity utilization rate) average in the manufacturing industry stood at 82.2% in the first four months of 2008, according to CNI data, a level 1.3 p.p. higher than that verified in the same period of the previous year. One should note that, after reaching the maximum in April and November 2007 (1.8 p.p.), the difference has been decreasing marginally. On the other hand, according to FGV, the Nuci in the five first months of 2008 reached 85% on average, a level 1.3 p.p. higher than that observed in the same period of the previous year.

Generally, the high level of capacity utilization is due to the acceleration of economic activity and is expressed in several sectors, notwithstanding the substantial growth of the investment volume. The FGV’s Outlook Survey of the manufacturing industry indicates that, between January and April, there was an increase of 4 p.p. in the number of companies which mentioned facing limitations in production growth (36% against 40%, respectively). As concerns the capacity expansion, the capital goods absorption, which was already showing high growth rates (5.1% in 2005, 13.9% in 2006 and 19.6% in 2007), accelerated at the beginning of this year, registering sharp growth of 22% in the first four months, in relation to the corresponding period of the previous year. This development reflects not only the vigorous increase in capital goods imports (33.6% in volume), but also in their production (20.5%). One should also mention the 10.0% increase in production of inputs for the construction industry, the best four-month period since 1995. On the other hand, in view of the recent behavior of capacity use rates, the timely maturity of investment projects is a fundamental factor in avoiding the important deepening unbalance verified in the evolution of aggregated of supply and demand in the latest quarters, which has exacerbated the risk for the inflation dynamics. In general terms, however, against recent evidence it is plausible to assume that the sustainment of a more intense pace of economic activity also implies the increase of interest rates.

The National Cost of Construction Index – Domestic Availability (INCC-DI) showed increase in production costs linked to this sector. The INCC’s accumulated growth up to May reached 4.40% against 2.56% registered in the same period of the previous year. On the other hand, the increase in the last twelve months topped 8.06% in May, a value 2.9 p.p. higher than the one verified in the corresponding period of 2007. These developments have been raising worries about the emergence of possible supply restrictions in this segment, which, given its production structure, would hardly be alleviated by imports. In addition, the construction industry seems to suffer cost pressures given the apparent lack of specialized labor force. Remaining prospects of demand expansion in an environment where financing conditions remain unfavorable reinforces concerns with price evolution in the construction industry.

With the overcoming of the “encourage” effect, typical of initial phases of expansion cycles, the growth in the economically active population (PEA) has been decreasing. In twelve months up to April this growth reached 2%, against 2.8% registered in the same period of the previous year. This movement, linked to the acceleration of economic activity pace and the consequent expansion of employment, caused faster drops in unemployment rates. Actually, in April, unemployment rate stood at 8.5% against 10.61% and 10.4% in the same periods of 2007 and 2006. Consequently, average unemployment rate in the first four months of the year stood, on average, 1.4 p.p. lower than the one verified in the corresponding period of the previous year and, on margin, the difference has been increasing. When the average rate is analyzed in twelve months, it is observed that April registered its tenth consecutive cutback in this metrics. In the presence of strong upturn in demand for labor force, once the remaining trends for PEA are maintained, unemployment rates should maintain a declining trend in the next quarters, which could enable the emergence of pressures for more significant rise in wages, possibly higher than the growth of labor productivity.

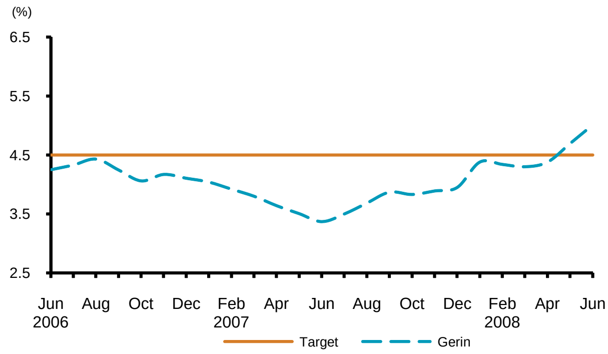
On the other hand, petroleum prices, systematic source of uncertainty in the external scenario, have been rising since the release of the last *Inflation Report* and continue highly volatile. This behavior is due to structural changes in the world energy market, which have hindered the traditionally observed recovery of stock levels, and generated geopolitical tensions. One should note that the impact of international prices of petroleum on domestic inflation is not exclusively transferred by fuel prices, but also, for example, by the petrochemical sector’s supply chain and by consumers’ and entrepreneurs’ expectations. The volatility of other important commodities prices continues equally high and with a general rising tendency, an effect of increased uncertainty in the prospects for world demand growth, and of major turbulence in the global financial markets.

After more than doubling in 2007 (7.89% against 3.79% in 2006), the broad inflation – measured by the IGP-DI – continued accelerating in 2008. Up to May, the IGP-DI grew 5.16%, against 1.19% in the corresponding period of the previous year, and in twelve months, 12.14%, a percentage 7.76 p.p. higher than the one verified in the same months of 2007. The strong acceleration of the index was due especially to the behavior of IPA-DI, which increased 15.36% in the last twelve months, against 4.29% in 2006. On the other hand, on the same basis of comparison, the IPC-Br and the INCC increased 5.59% and 8.06%, respectively, against 3.12% and 5.18% in the previous year. Still referring to the wholesale price index (IPA), one should note that the rising industrial prices, a process which began in the second half of 2007, was intensified in the latest months. In fact, between January and May 2008, the industrial IPA accumulated growth of 6.67%, against 1.61% in the same period of 2007. As a result, the twelve-month inflation of industrial prices grew from 4.42% in December 2007 to 9.63% in May 2008. As verified in previous *Reports*, Copom assesses that effects of the behavior of wholesale prices on consumer inflation will depend on the actual and future conditions of demand and price-setters expectations with regard to the future inflation trend.

The benign scenario for consumer prices, which was intensely materialized in 2006, began to decline in 2007 and showed even higher deterioration at the beginning of this year. These developments were referred to in the risk balance conducted by the Committee in previous *Reports*, which forecasted that the twelve-month inflation could accelerate this year. Similarly to what occurred in 2007, market prices this year have risen more than the monitored and administered ones, with the latter mitigating, at least for one more year, the IPCA acceleration. While market prices grew 3.62% in the first five months of 2008 (7.14% in twelve months), administered prices increased only 1.18% (1.50% in twelve months). In the set of market prices, nontradable goods topped 3.89% up to May (7.70% in twelve months), while tradable goods grew 3.33% (7.09% in 2007).

The three measures of core inflation calculated by the Central Bank registered, up to May, values higher than the ones verified in the same period of the previous year. Besides, with exception of the non-smoothed trimmed mean core, the twelve months inflation stands higher than the target's center. In fact, in the accumulated in the year up to May the core that excludes monitored prices and food at home prices registers inflation of 2.70% (1.80% in the same period of 2007), the smoothed trimmed mean core stands at 2.03% (1.52% in the same period of 2007) and the and the non-smoothed trimmed mean core shows inflation of 2.15%. In twelve months, the values are 5.03%, 4.56% and 4.39%, respectively.

Graph 6.1 – Inflation target path and market expectations for twelve-month ahead inflation



As mentioned in the last *Inflation Report*, inflation expectations for 2008 continues rising and actually stands at 5.80%, against 4.40% in March. For 2009, expectations also deteriorated, increasing from 4.30%, in March, to 4.63%. For 2010, the expectations rate moved from 4.40%, where it stood for a long time, to 4.50%. In the Committee's assessment, these developments, as well as the inflation acceleration in 2007 and in the first five months of the year, indicate that the convergence of the Brazilian inflation to the target, even against inflationary pressures in global scale, requires a timely action by the monetary authority, through adjustments to the basic interest rate.

6.2. Main scenario: associated risks and monetary policy implementation

The forecasts considered by the Copom are based on a set of assumptions about the behavior of the main macroeconomic variables. This set of assumptions, as well as the risks associated to it, make up the main prospective scenario based on which the Committee makes decisions.

In general terms, this scenario considers a slow down on the pace of expansion of the global economy, on the external side, followed by slight downturn in the expansion of the Brazilian economy, on the domestic side. Forecasts considered in this scenario will be presented in the following section. The scenario also encompasses the deterioration of the current and expected inflation dynamics due to rising inflation risks, both on the domestic and external sides. In this context, the main challenge of monetary policy is to prevent the current deterioration of inflation from spreading and consolidating.

The main scenario for the external sector incorporates a worse deceleration of the North-America economy than assessed in the last *Inflation Report*. Besides the impact caused by the USA economic deceleration to the global economy, one must consider the potential negative effects of this deceleration on mature economies in Europe and Asia, and the consequent deepening of the current negative growth trend. On the other side, equally important, there are increasing concerns about the evolution of inflation, in various regions. To some extent, it reflects the direct and secondary effects (due to rising inflation expectations) of increases in the prices of energy and foodstuffs. In this sense, some economies already face a situation that combines economic deceleration with significant inflationary pressures. The distribution of the external risks impacts on economic activity and inflation around this main scenario, as assessed by the Committee, changed since the release of the last *Inflation Report*. Monetary policy decisions taken by the central banks of mature economies, followed by fiscal incentives in the case of USA, seem to have been successful in limiting the risk of economic downturn, but the period of deceleration may extend into 2009. To the extent that the size and allocation of losses derived from the North-American real estate crisis among the financial institutions from mature economies are not fully known, and important segments of the financial market in these economies have not yet resumed normal liquidity conditions, the perception of systemic risk persists. However, this perception is less intensive than it was at the beginning of this year.

While the process of recapitalization of financial institutions proceeds, the credit supply conditions remain restrictive, which tends to feed back into the dynamics of demand deceleration. Note, however, that the ongoing deceleration of the global economy does not seem to be sufficient to contain the inflationary pressures that started off by the behavior of the raw materials prices but are now, apparently, intensifying and spreading. Considering all that, the main risks coming from the external sector tend to more balanced. On the one hand, there is a possible intensification of the contractive trends of the economic activity, which predominated up to March, and on the other, the deterioration of the global inflationary outlook seems to be worse in the latest months.

Copom reaffirms its assessment that the possible scenario of more intensive and generalized world deceleration would have an ambiguous impact on domestic inflation. Besides, by reducing net exports, a stronger world deceleration helps to contract aggregated demand. On the one hand, the potential cooling off of prices of some important commodities could contribute to lower domestic inflation. On the other, the above-mentioned possible scenario could impact unfavorably the prospects of inflation by means of two mechanisms. In the case of deceleration of mature economies, which are the center of the global financial market, the risk aversion could rise, thereby reducing the demand for Brazilian assets and depreciating their respective prices. However, the higher evaluations of the Brazilian sovereign risk by important rating agencies tends to reduce the sensitivity of the prices of Brazilian assets in face the international scenario.

This contributes to mitigate the effects of the global economy slowdown on the economic activity in Brazil, whose dynamics has been sustained essentially by domestic demand. The second mechanism is a similar, but medium run impact, of a possible reduction in net exports on the sustainability of some Brazilian asset prices that would probably have repercussions on the inflationary dynamics. In this context, even though the Brazilian economy has shown repeated signs of greater resistance to the international financial markets moods, it is possible that the capacity of external sector to help mitigating the inflationary risks ends up being limited.

As indicated above, under the current circumstances, this additional alternative scenario of an intensification of the global inflationary pressures should be considered. As registered in the March *Report*, Copom assesses that the behavior of international petroleum prices may pose some risks on the inflation trajectory. The rising prices of oil is an inflation risk factor associated to the domestic prices of fuels and to the potential impact over the domestic price of other by-products, especially those utilized during the productive chain of the petrochemical sector. Also, further impact may occur due to the rise in the prices of fertilizers over the cost structure of the agricultural sector. One cannot disregard, either, that the excessive volatility of oil prices generate even further uncertainties, which may influence negatively the evolution of economic agents' expectations, in general, and of the price setters, in particular. In summary, under the current situation, additional increases in oil prices or even their maintenance at the current levels may be transmitted to domestic prices, either via an increase in fuel prices or in the prices of other by-products that are part of the productive chain. The prices of other commodities, such as grains and minerals continue, with few exceptions, to rise over the year, despite the increasing pessimism involving the growth prospects for the world economy.

Apart from all this, the Brazilian economic growth has been relatively little dependent of the external trade and, therefore, its economic cycle has little synchronization with the mature economies, and has been led by the vigorous expansion of the domestic demand. Nevertheless, lately, the external sector has played an important role in maintaining inflation within a trajectory that is consistent with the targets set in advance by the CMN.

This has occurred, mainly, by means of the discipline imposed over the prices of tradable goods and via the expansion of investments in an environment of heated demand. However, the consistent increase in global inflation, which has been registered since the end of last year, has led to further rises in the price of imports, reducing the external sector´s contribution for inflation control. One should highlight that the rising of import prices is not restricted to fuels and other raw materials. For instance, the prices of imported capital goods climbed 6.2% in the twelve months period ended in May, against 5.3% up to March and 0.6% up to May 2007 (Funcex data, for total imports shows that the respective variations are 15.2%, 12.2% and 5.3%).

Despite the intensification of external inflationary pressures, Copom maintains the assessment that the main inflationary risk comes from internal factors. The central scenario indicates a relative accommodation during the year, against the expansion of 5.4% observed in 2007. However, it is expected that domestic demand continues growing at vigorous rates. In fact, the robustness of the domestic demand has exerted pressure on the supply capacity of basically all sectors of the economy, especially on those not exposed to external competition. This assessment becomes more certain upon the analysis of the data related to economic activity, such as, the high level of capacity utilization and the sustained growth of retail sales. In addition, it is worth considering that the performance of payroll, credit, as well as the fiscal impulses expected for 2008, although less intense than previously anticipated, constitute an additional strength to boost domestic demand, which already grows at robust rates. In this context, in line with the assessment made by Copom in previous documents, the uncertainty regarding the future dynamics of consumer inflation remains high. This assessment is supported by the deterioration of expectations, the reduction of the idle capacity, and also by the pressures on the wholesale market prices, among others.

Beyond the risk derived from the unbalance between the pace of expansion of domestic demand and supply, it is also important to consider the risks derived from the movements of wholesale prices and their possible effects on the consumer price index. Considering the magnitude and persistence of these increases in the wholesale prices, the chances that they are going to be translated into a significant increase in the consumer price index has expanded since the last *Report*. The wholesale agricultural prices still exert considerable pressure, and prospects for their accommodation should be analyzed in the light of the trends of world increase of food demand and the relative scarcity, especially in mature economies, of resources for food production. The worse risk, however, comes from the industrial prices because it is closer to the stages of final consumption and, therefore, it disseminates more rapidly toward consumer prices. Also, industrial prices usually demonstrate greater persistence.

Additionally, these prices are exactly the ones constantly accelerating since the second half of 2007, reflecting both the afore-mentioned external inflationary pressures and the strong economic activity in Brazil. If we consider that the significant growth in wholesale prices happens in an environment of exchange rate appreciation, the role which economic activity has played in the dynamics of prices becomes very clear.

Evidence shows that, in Brazil, there is a high pass-through from wholesale prices to consumer prices and with at a relative small time lag. The Committee understands that the impact of the variation of wholesale prices over consumer prices will depend essentially on the prospective conditions of supply and demand and, in a critical manner, on expectations from the price setters in relation to the future trajectory of inflation. In any case, regarding the scenario prevailing in March, the probability that inflationary pressures will materialize is high. These pressures that were initially limited, will end up being a risk for the domestic inflation trajectory because the upturn in demand and in the factor market, as well as the possibility of sectoral supply restrictions may lead to an increase of the pass-through to consumer prices. Actually, the behavior of the consumer price index in the latest months is, in part, due to the materialization of this risk. It was already mentioned in previous *Reports* and now it calls for monetary policy reaction.

Despite the recent rise in general price indices, for the short-term horizon, there is a contrast between the negative risks that outline the dynamics of free prices and the benign scenario that is still foreseen for the evolution of administered prices. In fact, in 2008 the administered prices may sustain its contribution to mitigate the pressures on the full index, however, less intensively than it did in 2007. Specifically, regarding energy, specialists assess that the tariffs should be well behaved again in 2008, even if there are concerns in some segments as to the prospects for expansion of supply in the medium term. Therefore, it should not be the case that substantial negative immediate risks will come from the performance of administered prices. The important exception, though, refers specifically to the price of gasoline, as highlighted before. Specialists are concerned with the magnitude of the impact of the increase in the general price indices, observed this year, on the set of administered prices, in 2009. Nevertheless, this impact is associated to contracts ruling the readjustments of some administered prices, so it is worth noting that the direct contribution of the overall inflation in the indexation of monitored prices is limited. Inflation being a monetary phenomenon, it is expected that, on the medium run, the variation of administered prices converges towards the average variation of free prices and, therefore, ceases to contribute to the pressures overall inflation.

Despite the inflationary acceleration observed since the end of 2007, the annual comparison of the average real income growth has been robust. Besides, partly due to macroeconomic stability, employment expansion has supported and tends to sustain the growth in real payroll at a good pace. In fact, the deceleration in the pace of the labor force growth, associated to the continued expansion of employment, will result in reduced unemployment, which could lead to acceleration of wage gains, with potential impact both on domestic demand and on the costs in various sectors.

In these circumstances, the behavior of wages, given the growth of labor productivity, should be carefully monitored. On the other hand, the more consistent growth of inflation in the latest months became an important factor of reduction in the real labor income gains. This tends to cause pressure on nominal earnings, which would end up feeding back into inflation. If part of the firms readjusts wages decoupled from productivity growth, it would reinforce inflation acceleration increasing the risks for the prospective scenario.

The expansion of credit has been another important factor supporting aggregated demand. In principle, the rise in credit operations interest rates verified since the beginning of the year, as well as in the costs of funding by financial institutions, should act to cool off the growth of credit during the next quarters. Besides, the growth of especially dynamic modalities, such as payroll-deducted loans, could be facing natural limitations. However, the significant increase of income and employment, and the prospects of continuity of this process, in an environment in which banks seek to preserve their market shares, has worked as an important driving force of credit expansion. In addition, one cannot disregard that the introduction of institutional changes aimed at stimulating credit market competition should keep credit concessions at a strong pace. So far, the expansionist efforts have prevailed in determining the credit dynamics. From now on, taking into account the above-mentioned factors, some moderation in the pace of credit expansion is expected.

The possibility that changes in inflation dynamics, which in a preliminary assessment seems transitory, may have effects on the agents' expectations on medium and long run inflation prospects constitutes a permanent risk for monetary policy implementation. Taking into account the inflation performance in the recent past, Copom considers that there is a significant probability that inflationary pressures, which were initially localized, may pose risks to the domestic inflation trajectory. Actually, this assessment is supported by the recent inflation behavior. The Committee understands that this risk tends to become higher in moments such as the current one, when domestic demand is heated and exposed to expansionist impulses, and the production factor market is clearly tight. Evidence shows that the inflation acceleration episodes are not uniformly distributed among the different components of the price indices. To some extent, the behavior of cores, diffusion indices of IPCA and of the prices of services and of industrial wholesale prices in the latest months confirms the view that inflationary pressures, initially limited, would be disseminating. It is up to monetary policy, therefore, to be alert in order to prevent this scenario from materializing. In particular, one should be aware to the dissemination of second round effects, since significant variations in relative prices that validate the high inflation indices tend to generate reactions to recompose agents' real income, which, in turn, feeds back the inflationary process. The international experience, as well as the very history of inflation in our country, recommends that the monetary authority, by means of the adjustment of the basic interest rates, should counteract potential secondary effects. Note, also, that increases in prices of items, such as energy and foodstuffs, which have high visibility but not a high weight at the inflation index, tend to have a more than proportional effect on how agents form inflation expectations.

In this regard, Copom's assesses that the prospects of inflation has deteriorate and are surrounded by great uncertainty, since the last *Report*. Additionally, the risk of materialization of a less benign inflation scenario, in the medium run, has risen since then.

Considering the whole picture of the robust domestic demand, as confirmed by the 2008 first quarter national accounts, and the increase on inflation expectations, there are relevant risks that the positive results in terms of inflation observed in recent years will not be sustained. In fact, inflation expectations for 2008 increased significantly in the last quarter, followed by an undesirable growth in expectations for 2009 and for 2010. This behavior is an important indication that the factors underlying the recent acceleration of inflation may have a more persistent character than anticipated, in line with the concerns expressed in the latest *Reports*. Differently from that registered in the March *Report*, the expectations for 2008 and 2009 are above the central level of the target and, even if there is no additional deterioration, this upturn represents a risk for the prospective scenario, meriting attention and response on the part of monetary authorities.

In summary, the Committee assesses that, since the release of the last *Report*, the balance of risks for the expected inflation trajectory became less favorable, both from the viewpoint of external factors, and mainly, from the internal ones. In the external context, the developments of the recent quarters suggest that the contribution of imports for the maintenance of a benign inflation scenario became less effective. In the domestic context, the accelerated pace of demand growth continues to be an important source of risk for inflation dynamics, despite the robust behavior of investment, restrictions to the expansion of supply could be emerging. From another perspective, the additional increases in the rate of aggregated demand growth could be conditioned to rises of the rate of investment, a process undoubtedly slow. In this context, Copom assesses that the reduction consistent with the unbalance between the pace of expansion of supply of goods and services and of demand continues to be a central element in the assessment of the different possibilities, which are presented to the monetary policy.

Inflation rates consistent with the inflation target trajectory, which result from the consolidation of a sustained and stable macroeconomic scenario, will contribute for the continuity of the process of progressive reduction of the perception of macroeconomic risk, which has been occurring in the latest years. In order to turn this in concrete results, however, it is necessary for the prospective inflation indicators, in particular the trajectory of aggregated demand and supply, to evolve in a harmoniously. Copom assesses that the persistence of a careful and timely action of the monetary policy has been fundamental to increase the probability that inflation continues evolve according to the target trajectory.

Copom considers fundamental to highlight, once more, that there are important lags between the implementation of monetary policy and its effects over the level of activity and over inflation. Therefore, the assessment of alternative decisions of monetary policy should be concentrated, necessarily, on the analysis of the prospective scenario for inflation and on the risks associated to it, instead of prioritizing the current values observed for this variable.

By the way, during the next quarters, the expansion of payroll and of credit will continue to drive the aggregated demand. Besides these factors, the effects of the government transfers on the expanded domestic demand, which are still mitigated, should be added. Besides this scenario, within the set of information considered by the Committee, it is also considered the evidence that the domestic demand is already heated and the fact that the current decision of the monetary policy will have concentrated impacts on the second half of 2008 and in 2009.

In the light of these considerations, Copom decided to raise the Selic rate by 0.5 p.p. in its meetings of April and June, setting it at 12.25%.

Aiming to consolidate an environment of stability and predictability, the Committee adopts a strategy that seeks to avoid a volatile inflation trajectory. Such a strategy takes into account the lags of the transmission mechanism. It has proved to be the most adequate way to deal with the uncertainty inherent to the process of formulation and implementation of the monetary policy, and will have its results evidenced over time. That is the reason for the importance attached to the forecasts of inflation, to the balance of risks associated to the prospective scenario and, in a fundamental way, to the preventive action in the decision making process of Copom. Prudence plays an even more important role in this process, in moments such as the current one, characterized by deterioration of the current and expected inflation dynamics. In the current circumstances, there is a risk that the economic agents give a high probability to the fact that increases in inflation may persist, which would reduce the efficacy of the monetary policy. Therefore, in the Committee's assessment, supported by international experience, monetary policy actions tend to be more effective when it is consolidated. It is up to the monetary policy to act so that the impacts, initially limited to the price indices, do not carry on through the worsening of inflation expectations to a persistent deterioration of inflation dynamics. Copom understands that the current monetary policy stance, to be maintained while it is necessary, will ensure the convergence of actual inflation to the inflation target trajectory. Evidently, in the event of alteration of the risks profile that implies changes of the basic prospective scenario forecasted for inflation by the Committee at this moment, the monetary policy strategy will be promptly adequate to the circumstances.

6.3 Inflation forecasts

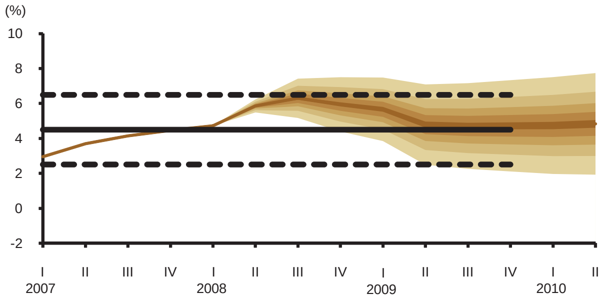
According to the traditionally adopted procedures, and taking into account the available information up to the cutoff date of June 13, 2008, the benchmark scenario assumes the exchange rate constant over the forecast horizon at R$1.65/US$, and the target for the Selic rate at 12.25% – set on the Copom meeting of June – against R$1.70/US$ and 11.25% considered in last March *Inflation Report*. The projection for the variation, in 2008, of the set of regulated and administered prices was maintained at 4.0%. This projection is based on the hypotheses of nil variation in gasoline and bottled gas prices, for the accumulated in 2008 (adjusted by the effects of changes in specific taxes); of 1.1% in prices of electricity; and of 3.5% in the fixed telephone prices. The items for which more information is available price changes were estimated individually, whereas, for the others, the projections are based on models of endogenous determination of regulated and administered prices, which considers seasonal components, exchange rate variations, market price inflation and General Price Index (IGP) inflation. According to these models, the readjustment projection of the regulated and administered prices for 2009 and 2010 stands at 4.5%, which is the same level used in the March *Report*.

The market scenario, on the other hand, is based on data from the survey carried out by Gerin with a representative group of institutions up to the cutoff date. In this scenario, the evolution of the average exchange rate expectations decreased in comparison to the values released in the March *Inflation Report*. For the last quarter of 2008, these expectations moved from R$1.74 to R$1.68, and for the last quarter of 2009, from R$1.84 to R$1.77. For the second quarter of 2010, average survey expectations project an exchange rate of R$1.81. The average expectations about the Selic rate evolution significantly increased compared to the values registered in the last *Report*. For the last quarter of 2008, it moved from 11.25% to 13.66%, while for the last quarter of 2009 it went from 10.61% to 12.94%. For the second quarter of 2010, the projection for the average Selic rate is 12.13%. In the market scenario, the pre-DI swap of twelve months model – used in replacement of the Vector Autoregression (VAR) model, based on levels of the Selic rate and of the pre-DI swap of six months – projects a pre-DI swap of twelve months spread of 264 b.p., 136 b.p. and 58 b.p., considering the current Selic rate, in the last quarter of 2008 and 2009, and in the second quarter of 2010, respectively. Additionally, reflecting especially the effects of the expected depreciation of the nominal exchange rate, the market scenario assumes variation of 4.1% for the group of regulated and administered prices in 2008, and of 4.9% and 5.0%, in 2009 and 2010, respectively.

With regard to the fiscal policy, the projections presented in this *Report* are based on the working hypothesis of a primary surplus of 3.8% of GDP in 2008 and 2009, increased by 0.5 p.p.

Figure 6.2 – Forecasted IPCA-inflation with interest rate constant at 12,25% p.a. (Benchmark scenario)

Inflation fan chart



Note: Accumulated inflation in 12 months (% p.a.).

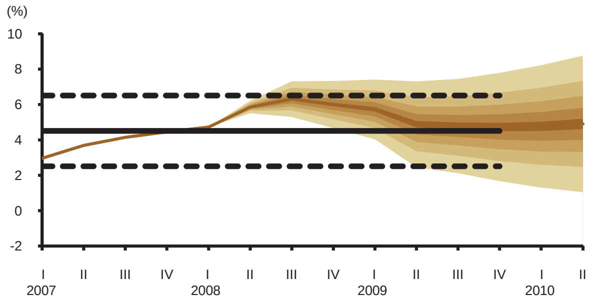
Table 6.1 – IPCA-inflation with interest rate constant at 12.25% p.a.
(Baseline scenario)

Year	Q	Probability Interval 50%	30%	10%	10%	30%	50%	Central projection
2010	1	5.7	5.8	5.8	5.9	5.9	6.0	5.9
2010	2	5.8	6.0	6.2	6.4	6.6	6.8	6.3
2010	3	5.3	5.6	5.8	6.1	6.3	6.6	6.0
2010	4	4.9	5.2	5.5	5.8	6.1	6.4	5.7
2011	1	3.8	4.3	4.6	5.0	5.3	5.7	4.8
2011	2	3.7	4.1	4.5	4.9	5.3	5.7	4.7
2011	3	3.7	4.1	4.5	4.9	5.3	5.8	4.7
2011	4	3.6	4.1	4.5	5.0	5.4	5.9	4.7
2012	1	3.6	4.2	4.6	5.1	5.5	6.0	4.8

Note: accumulated inflation in 12 months (% p.a.).

Figure 6.3 – Forecasted IPCA-inflation with market expected interest and exchange rates

Inflation fan chart



Note: Accumulated inflation in 12 months (% p.a.).

Based on the above assumptions and using the information set until the cutoff date (June 13, 2008), projections were constructed for four quarters of the accumulated IPCA inflation, given the benchmark and market scenarios interest and exchange rates trajectories.

The central projection associated with the benchmark scenario indicates inflation of 6.0% in 2008, increase of 1.4 p.p. in comparison to the projection presented in the March *Report*, and higher than the central value of 4.5% for the target established by the CMN. According to the data shown on Table 6.1, the twelve-month accumulated inflation moves from 5.9% in the second quarter of 2008, reaches 6.3% in the third one and slows down to 6.0% in the last quarter of 2008. For 2009, the projected twelve-month accumulated inflation moves from 5.7% in the first quarter and ends the year at 4.7%. In this scenario, the initial projection for the first quarter of 2010 remains at 4.7% and for the second one reaches 4.8%. One should highlight that the decline of inflation projection throughout 2009 essentially reflects the fact that inflation expectations, both for 2009 and for 2010, are below the respective expectations for the current year.

Data on Table 6.1 indicates, for 2008, an increase of 0.4 p.p. in the twelve-month accumulated inflation in the third quarter, compared to the second quarter; and a decrease of 0.3 p.p. in the fourth quarter, when compared to the third one. In the first case, the movement reflects a projection for the inflation of regulated and administered prices, for the third quarter of 2008, higher than the inflation observed for these prices in the same period of 2007. In the second case, the decrease reflects a lower projection for market price inflation in the fourth quarter of 2008, when compared to the observed inflation in the same quarter of 2007, which is more than sufficient to offset the effects of the projected regulated and administered price inflation, also for the fourth quarter of 2008, and higher than the observed one in the same period of 2007. According to the confidence interval illustrated on Table 6.1, which is based on the benchmark scenario, the estimated probability of the inflation surpassing the upper limit (6.5%) of the target in 2008 stands around 25%.

In the market scenario, the inflation projection of 2008 (6.0%) is 1.3 p.p. higher than that registered in the last *Report*. As can be seen on Figure 6.3 and on Table 6.2, the projections indicate an increase in the inflation accumulated in twelve months in the third quarter of 2008 and a slight decrease in the last quarter, but still ending the year at 6.0%, quite higher than the central value of 4.5% for the inflation target. When

Table 6.2 – Projected IPCA-Inflation with market interest and exchange rates expectations[1/]

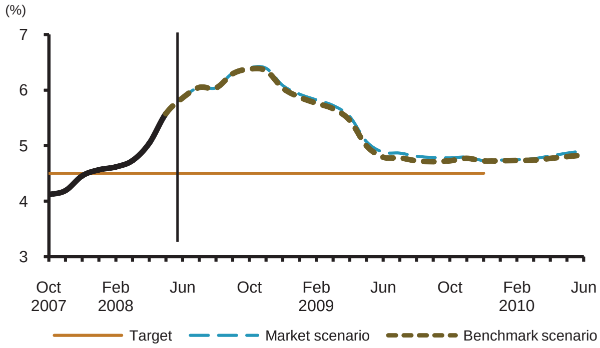
Year	Q	Probability Interval 50%	30%	10%		30%	50%	Central projection
2010	1	5.7	5.8	5.8	5.9	5.9	6.0	5.9
2010	2	5.9	6.1	6.2	6.4	6.5	6.7	6.3
2010	3	5.5	5.7	5.9	6.1	6.3	6.5	6.0
2010	4	5.0	5.3	5.6	5.9	6.1	6.4	5.7
2011	1	3.9	4.3	4.7	5.1	5.5	5.9	4.9
2011	2	3.7	4.2	4.6	5.0	5.4	5.9	4.8
2011	3	3.5	4.0	4.5	5.0	5.4	6.0	4.7
2011	4	3.3	4.0	4.5	5.0	5.6	6.2	4.8
2012	1	3.3	4.0	4.6	5.2	5.8	6.5	4.9

Note: accumulated inflation in 12 months (% p.a.).
1/ According to Gerin.

Table 6.3 – March 2008 *Inflation Report* forecasts

Period	Benchmark scenario	Market scenario
2008 I	4.6	4.6
2008 II	4.7	4.7
2008 III	4.9	4.9
2008 IV	4.6	4.7
2009 I	4.3	4.5
2009 II	4.5	4.8
2009 III	4.4	4.9
2009 IV	4.4	4.8
2010 I	4.3	4.7

Figure 6.4 – Forecasts and target path for twelve-month cummulative inflation

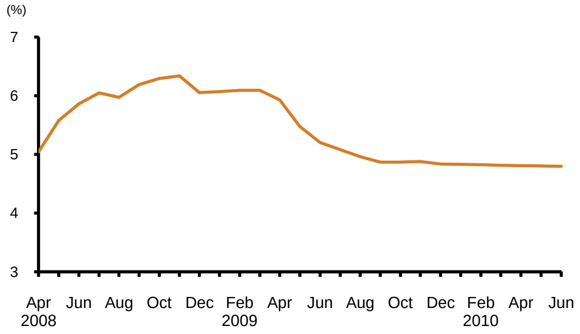


comparing this projection with that of the benchmark scenario (6.0%), which after rounding are equivalent, it should be noted that in the market scenario there is essentially a balance of effects over the inflation projections, regarding the devaluation of real against the US dollar and the increase of Selic rate, according to analysts' expectations. Still according to the market scenario, the projection of the accumulated inflation in twelve months decreases during 2009 and ends the year at 4.7%, therefore, higher than the central value of 4.5% for the target determined by CMN. For the second quarter of 2010, the projection for the twelve-month accumulated inflation stands at 4.9%. This slight increase in comparison to the projected value for the end of 2009 basically comes from the combination of expectations of exchange rate depreciation and of reduction in Selic rate. According to the confidence interval presented on Table 6.2, the estimated probability of the inflation surpassing the upper limit of the target in 2008 also stands at a level close to 25%.

Comparing the trajectories shown in this *Report* with those released in the previous *Report*, which projections are reproduced on Table 6.3, indicates that there was an increase of the projections, in both scenarios, for 2008. In these two scenarios, the inflation projection stands at 6.0%, a value 1.4 p.p. higher than the one presented in the last *Report*, in the benchmark scenario, and 1.3 p.p., in that of market scenario. Besides incorporating the effects of the inflation rates for the recent months higher than the projections prevailing on occasion of release of the last *Report*, the current projections reflect the effects of significant increase of inflation expectations for 2008 and 2009, despite the maintenance of the regulated and administered prices inflation projection for 2008 (4.0%). For 2009, in comparison to the ones presented in the previous *Report*, it is noted an increase of 0.3 p.p. in the projection associated to the benchmark scenario and a relative stability in the market scenario.

Figure 6.4 shows the evolution of twelve-month accumulated inflation, according to the benchmark and market scenarios, up to the second quarter of 2010, as well as the target trajectory up to the end of 2009. By May 2008, the values are related to inflation occurred in twelve months and, after June, the trajectories consider the projections according to the two scenarios. In both scenarios, the projections rise up to the final months of 2008, slow down during 2009 and turn to increase in the first quarter of 2010. In the two scenarios, projections remain higher than the current central target (4.5%) up to the end of the forecast horizon.

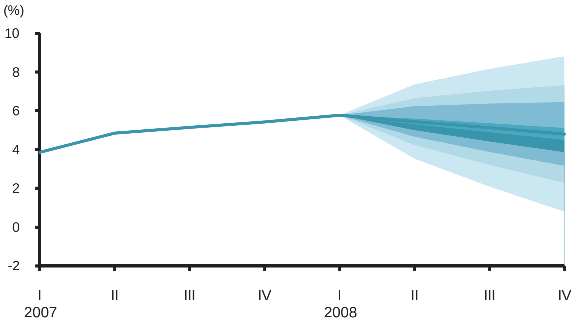
Figure 6.5 – Inflation Forecast: VAR Models



Note: accumulated inflation in 12 month (% p.a.). Average forecast generated by the VAR models.

Figure 6.6 – GDP growth with interest rate constant at 12.25% p.a. Benchmark scenario

Output fan chart



The forecast generated by the VAR models, incorporated as of this *Inflation Report*, follows the methodology discussed in the box "Vector Autoregression Models" presented in the last *Report*, where it is registered that these models exhibit better performance in shorter horizons. Up to May 2008, the values refer to inflation occurred in twelve months and, as of June, refer to the average forecast of the VAR models. According to Figure 6.5, the VAR models indicate an increase of inflation up to the third quarter of 2008, since when a decrease trend is forecasted. Nonetheless, the forecast for the twelve-month accumulated inflation remains above the current central target (4.5%) up to the end of the forecast horizon.

Figure 6.6 illustrates the output growth fan chart built on the benchmark scenario assumptions. Considering that the model which generates GDP growth projections uses two variables not directly observable, potential output and output gap, the forecast errors associated to these projections are considerably higher than the errors related to the inflation projections. According to this scenario, the GDP growth projected for 2008 remains at 4.8%, the same value projected in the March *Inflation Report*.

Preemptive Action and Inflation Fighting

There is consensus that the choice of timing for implementing monetary policy actions is a crucial step in the monetary policy framework. One reason that makes this choice hard is the existence of relevant lags in the monetary transmission mechanism. Evidence suggests that in mature economies a change in the monetary policy instrument may take up to two years to significantly affect the path of inflation and real output. The evidence for Brazil does not differ much from the international experience, though the lags are shorter. Another reason is that the monetary action directly depends on the nature of the shocks (demand versus supply shocks) and on their persistence (transitory or permanent). In this context, the measurement of lags and the precise identification of the shocks determine, to a large extent, the effectiveness and the cost of implementing monetary policy[1]. For example, inflationary pressures arising from excess demand tend to be more easily controlled at its early stages, before having long-lasting effects over agents' expectations and on wage and price decisions. In such circumstances, a preemptive monetary policy action is potentially more effective in terms of controlling inflation and less costly in terms of real output loss [2].

Preemptive policy actions have been successful in both mature and emerging economies. The goal of this box is to identify stylized facts associated with the international experience. Therefore, we analyzed episodes of monetary policy tightening implemented by 26 central banks, since the adoption of their inflation targeting regimes – New Zealand (1990),

1/ This is not a trivial task. "… economies rarely evolve as expected. Surprises are the norm, not the exception, and they would induce the central bank to alter its expected path in obvious ways." (Blinder, 1998, pp. 16-17).

2/ See Mishkin (1997) for a discussion about the advantages and disadvantages of preemptive monetary policy actions.

Chile (1990), Canada (1991), England (1992), Israel (1992), Sweden (1993), Australia (1993), Czech Republic (1998), South Korea (1998), Poland (1998), Euro Area (1999), Mexico (1999), Brazil (1999), Switzerland (2000), South Africa (2000), Thailand (2000), Iceland (2001), Norway (2001), Hungary (2001), Philippines (2002), Peru (2002), Slovakia (2005), Indonesia (2005), Romania (2005), Guatemala (2006) and Turkey (2006). The sample also includes data from the U.S. economy (which for some analysts has an implicit inflation target of 2%) since the beginning of the Greenspan era (1987).

The main goal of this analysis is to verify whether there exist significant differences between preemptive and reactive actions. To this goal, we first identified those tightening cycles related to inflationary pressures, therefore excluding episodes associated with financial crises or other shocks that did not significantly affect the path of inflation. Moreover, we also discarded very short cycles, under the assumption that only relatively long tightening cycles significantly affect the inflation dynamics. Therefore, the resulting sample includes only those tightening cycles that lasted at least eight months. Finally, we define preemptive actions as those implemented before the average inflation in the six months prior to its implementation exceeded the center of the target[3]. Altogether, we identified 50 tightening cycles, of which 22 we considered preemptive and 28 reactive[4].

On Table 1, $\Delta\pi_0$ denotes the mean deviation of inflation from the target in the six months before the start of monetary tightening cycle. Moreover, in order to compare preemptive and reactive policies, we selected the following four variables:

(1) Cycle duration – it measures both the duration of the tightening cycle (the period of increase in the policy interest rate) and the period required to bring inflation close to the target (for each country in the sample, T_r represents the time required to increase the policy interest rate, while T_π denotes the average time required to control inflation, both in months);

3/ Alternatively, we could have used the target range instead of the target center. However, some central banks pursue inflation targets without fluctuation bands. For those countries whose targets are the ranges themselves we considered the midpoint of the range as the center of the implicit target.

4/ It is important to mention that a country may have implemented the two policies on different occasions.

(2) Mean deviation from the target of the 12-month inflation – for each country and episode, according to:

$$\Delta\pi = \frac{1}{T_\pi}\sum_{t=1}^{T_\pi}\left(\frac{\pi_t - \bar{\pi}_t}{\bar{\pi}_t}\right)$$

where, Δπ represents the variation of the inflation rate and denotes the inflation target.

(3) Magnitude of the increase in the policy rate – for each country and episode, the magnitude of the tightening cycle was defined as the difference between the peak of the policy interest rate (r_{max}) and the rate prevailing in the month immediately preceding the beginning of the cycle (month 0), according to:

$$\Delta r = \frac{r_{max} - r_0}{r_0}$$

where, r_0 is the policy interest rate prevailing in month 0.

(4) Economic activity indicator – for each country and episode we measured the acceleration or deceleration of the average growth rate of industrial production during the period required to control the inflation, as below:

$$\Delta y = \frac{1}{T_\pi}\sum_{t=1}^{T_\pi}\left(y_t - \bar{y}_0\right)$$

where y_t denotes the 12-month growth rate of industrial production and denotes the average growth rate of industrial production in the semester immediately before the start of the monetary tightening.

The last variable is taken as an indicator of the cost of fighting inflationary pressures. We opted for the industrial production, rather than the unemployment rate or the growth rate of Gross Domestic Product (GDP), because the indicators of industrial production tend to be more homogeneous across countries, and are available on a monthly basis.

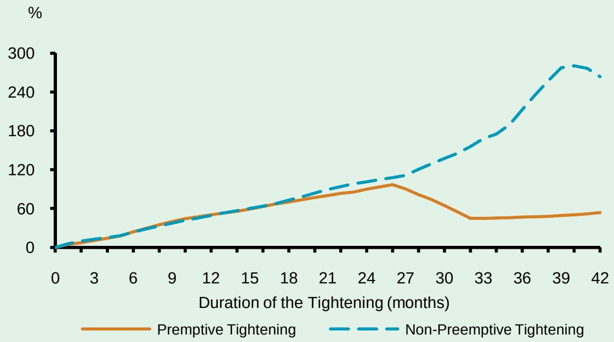
Table 1 shows the average (across countries) of the variables of interest for both preemptive and reactive cycles. The table highlights: (1) countries that have acted preemptively initiated the tightening cycle when the average level of inflation in the semester preceding the cycle was 26% *lower* than the target, while countries that have only reacted to the surge in inflation began their tightening cycle when the average level of inflation in the semester proceeding the cycle was 36% *higher* than the target; (2) the average duration of preemptive cycles was approximately four months lower than that of reactive cycles and, in addition, the time required to control inflation was much smaller in the first case; (3) the average increase in the policy interest rate required to control inflation was substantially smaller in the countries that acted preemptively; (4) despite implementing a tighter monetary policy, for having acted with delay, the reactive countries experienced larger deviations of inflation from the target during the tightening cycle; and (5) real output reduced only in the reactive cycles.

Table 1 – Preemptive and Non-Preemptive Interest Rate Cycles (mean values)

Features	Symbol	Preemptive Tightening	Non-Preemptive Tightening
Number of episodes		22.0	28.0
Deviation of inflation from target prior to the tightening	$\Delta\pi_0$	-26.5%	36.3%
Duration of the tightening (in months)	T_r	17.3	21.5
Time required for inflation to converge to target (in months)	T_π	20.4	26.4
Accumulated change in the interest rate over the tightening	Δr	68.6%	91.8%
Deviation of inflation from target after the tightening	$\Delta\pi$	24.6%	52.3%
Dynamics of industrial production	Δy	0.79%	-0.12%

Banco Central do Brasil. Original sources: central banks, *Global Financial Data* and IMF.

Figure 1 – Change in the Interest Rate
Accumulated



Complementing Table 1, Figures 1, 2 and 3 show, respectively, the paths of the average values of the cumulated interest rate increase (Δr), inflation deviation from the target ($\Delta\pi$) and the variation in industrial output (Δy), in the three cases, considering six-month moving averages. Figure 1 indicates that despite the average increase in the interest rate being identical in the first half of the cycle for both preemptive and reactive countries, monetary policy started to ease first in the preemptive ones. In turn, Figure 2 shows that the inflation deviations from the target were systematically higher in the reactive cycles. Finally, Figure 3 suggests that the cost of fighting inflation was higher in the reactive cycles.

The above analysis does not identify the nature of the inflationary pressures, that is, whether they were caused by demand or supply shocks. Despite this caveat, overall, this boxe presents

Figure 2 – Deviation of Inflation from Target

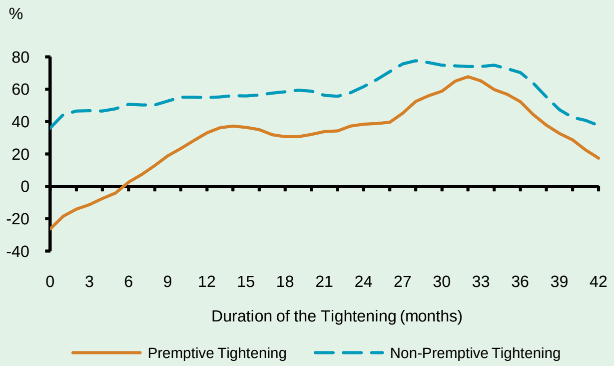
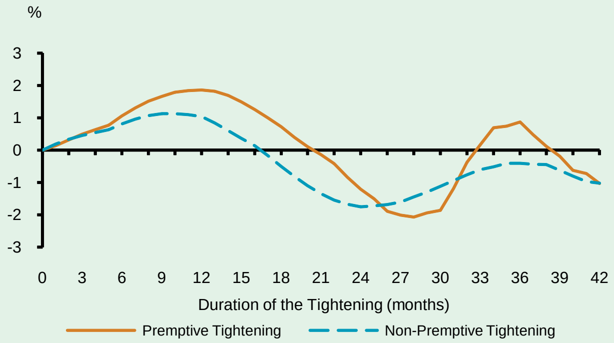


Figure 3 - Change in the Growth Rate of Industrial Production



evidence that preemptive monetary actions are shorter, milder, more effective and less costly than the reactive ones. Therefore, in line with the theory, the international experience suggests that, in inflation-targeting economies, preemptive policies seem to be more effective in terms of controlling inflation and imply fewer costs in terms of output. These considerations reflect the available empirical evidence, but do not represent, nor should they be interpreted as forecasts by the Monetary Policy Committee about the ongoing monetary adjustment.

References

BLINDER, Alan S. (1998). *Central Banking in Theory and Practice*. The MIT Press.

MISHKIN, Frederic S. (1997). “Strategies for Controlling Inflation”. *NBER Working Paper Series*, No. 6122.

The Impacts of the Interest Rate Term Structure on the Economy

The boxes "Interest Rate, Cost of Credit and Economic Activity" and "The Term Structure of Interest Rates and the Cost of Credit", published in the September 2003 and March 2005 Inflation Reports respectively, examined the impact of the interest rate term structure on the cost of credit, and this on the demand level of the Brazilian economy. This box revisits the theme, showing some of the graphics then presented, and updating the analysis in the light of recent developments in monetary policy.

In summary, the points raised in those boxes were: (a) the monetary authority only determines the nominal short-term interest rate (overnight rate or base rate) and, thus, even atrelatively short tenors, other rates may deviate from the short-term rate, as when the market players anticipate changes in the monetary policy stance, (b) the term structure of interest rates determines the nominal cost of credit for the different contractual instruments and terms, (c) the decisions of consumption and private investment are affected by, among other factors, the real expected cost of credit , and (d) there are lags in the transmission mechanism of monetary policy, so that changes in the base rate does not instantly affect the real cost of credit and, therefore, the actual demand.

In the September 2003 box there was evidence of economic activity recovery, in response to falling long-term interest rates from March of that year on, which in turn was due to the anticipation by private agents of the monetary easing started in June of that year by the Copom. Indeed, the market yield curve became negatively tilted in the second quarter of 2003. This created conditions for the reduction of the interest rate applied in credit operations, boosting the resumption of economic activity from the third quarter of that year on. It was noted in the March 2005 Box that the long-term rates anticipated, some months before, the process of monetary tightening initiated by the Central Bank in mid-2004. However, there was a rapid return to a negative slope of the yield curve in the second half of 2005, which was followed, thereafter, by the reduction of the spread between long-term rates and the short-term rate, ushering in a strong economic growth driven by credit expansion, which had reached around 34.7% of Gross Domestic Product (GDP) in the end of 2007.

As occurred in previous years, the recent movements in the term structure of interest rates and lending rates are consistent with the stance of the monetary policy currently under way, and do not constitute an abnormal situation. Regarding the term structure, Figure 1 shows that from the end of 2007 on, the market long-term interest rates once again diverged from the base rate, anticipating the process of monetary contraction initiated by the Central Bank in last April.

The recent evolution of the term structure, besides not representing a completely new behavior, does not indicate a loss of effectiveness of the monetary policy. Indeed, what has happened since the end of last year is a process similar to that seen in early 2001, and in the second halves of 2002 and 2004. On the other hand, it is opposite to what was seen in the second quarter of 2003, and during the period from March 2005 to mid-2007, when the market interest rates anticipated the easing of the monetary policy due to a better environment concerning inflation.

With respect to the movement of lending rates and, therefore, the banking spread, one must distinguish between changes of medium and long term and short-term changes. In the former case, it is known that the banking spread has followed a downward trend in recent years. This downward trend has been favored by several factors, all of them acting in the same direction. For example, there has been rapid growth of credit supply, as well as innovations in the credit sector, with the beginning of new forms of loans to individuals (payroll loans). The latter helped to reduce the average spread, because they involved lower credit risk. It should also be mentioned the scenario of greater confidence of economic agents in

Figure 1 – Over Selic, 180-day and 360-day swap rates (%)

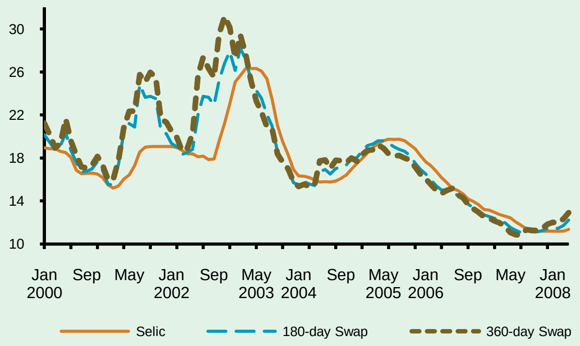


Figure 2 – Market interest rates and credit cost (%)

Discounting of trade bills

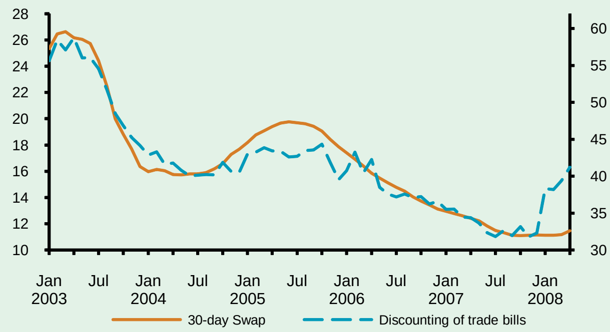


Figure 3 – Market interest rates and credit cost (%)
Vendor

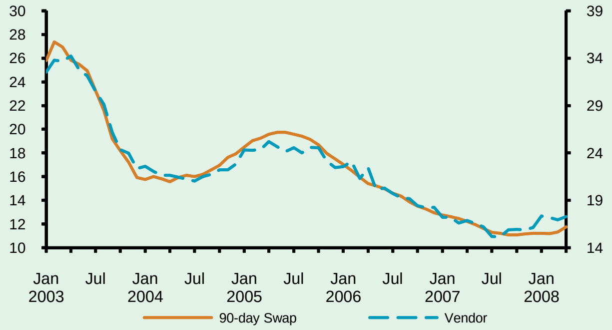


Figure 4 – Market interest rates and credit cost (%)
Personal credit

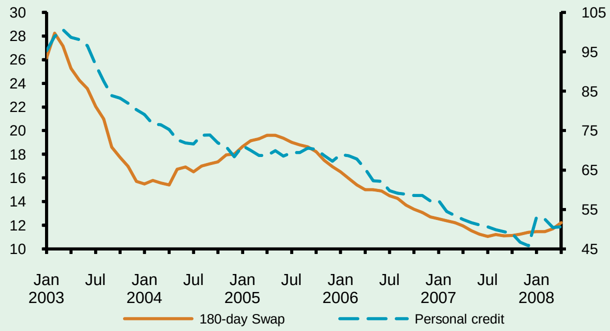


Figure 5 – Market interest rates and credit cost (%)
Auto loans

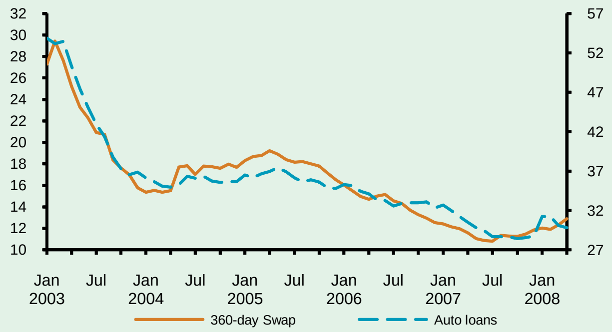
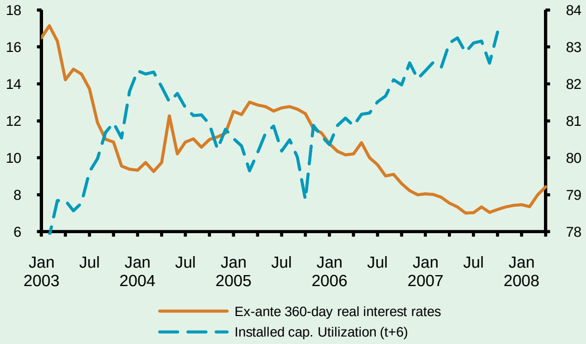


Figure 6 – Market interest rates and credit cost (%)
360-day real interest rates and installed capacity utilization



the performance of the economy, which allowed an increase in the average maturity of credit operations.

On the other hand, the movements of short-term lending rates are more closely related to the monetary policy instance and especially to the behavior of the market interest rates. Figures 2, 3, 4 and 5 illustrate the links between market interest rates for different maturities, with the cost of credit to the borrower in specific modalities. The graphs show clearly that there is a close correlation between the various curves specified, although there was an increase in Financial Operations Tax (IOF) at the beginning of the year (Decree No. 6339 of 3 January 2008) to compensate for the end of the Provisional Contribution on Financial Transactions (CPMF), which contributed significantly to explain the recent increase in loan interest rates.

These figures show, in the first quarter of 2008, that there has been a more pronounced impact of the IOF increase on the discounting of trade bills and vendor costs of operations. The reason is that this tax is proportionately greater for shorter maturity operations and the interest swaps for these maturities have changed little in the period. On the other hand, for longer operations such as personal credit and vehicles finance, it is clear the effect of the anticipated increase in long-term rates, in response to the prospect of a raising Selic.

Finally, in relation to the response of economic activity to monetary policy stimuli, there is no evidence to support any pattern of abnormality in the recent past. As shown in Figure 6, which presents a comparison between the 360-day real interest rate (deflated by expected inflation) and the seasonally adjusted installed capacity utilization (ICU), lagged six months and measured by the National Confederation of Industry (CNI), it is noted that the monetary policy implemented in recent years has allowed to adjust the output growth at the rate of expansion of productive capacity.