## **Breakdown of 2008 Inflation**

Following the procedure adopted in previous years, this Box examines the behavior of inflation rate in 2008 and shows the estimates of the major factors contributing to explain its dynamics. The procedure consists in decomposing total variation of the Broad National Consumer Price Index (IPCA) for the calendar-year into the following components: (i) exchange rate variation; (ii) inertia from the difference between previous year's target and actual inflation; (iii) difference between inflation expectations of agents and inflation target; (iv) market prices inflation, excluding the impacts of the three previous items; and (v) inflation of contractually administered and regulated prices, excluding the impacts of the models of items "(i)" and "(ii)". It is worth highlighting that these estimates are approximations, based on models, and are subject to the uncertainties inherent in the process.

IPCA inflation reached 5.90% in 2008, thus registering an increase compared to 4.46% observed in the previous year. Considering the two large groups of prices which make up the IPCA, market prices inflation closed the year at 7.05%, and the variation of the regulated prices reached 3.27%. Thus, as it occurred in the four previous years (Table 1), excluding the combined impact of pass-through, inertia, and expectations, the major contribution to IPCA's variation was due to the behavior of market prices and regulated prices. In fact, considering the above exclusions, market prices contributed with 3.77 p.p. to the 2008 inflation, and the regulated ones, with 1.05 p.p. In relative terms, the effect of market prices and the regulated prices on inflation reached 63.9% and 17.8%, respectively (Figure 1).

Table 1 – Inflation decomposition: 2002 – 2008 (p.p.)
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Component	2002	2003	2004	2005	2006	2007	2008	
IPCA inflation (variation %)	12.53	9.30	7.60	5.69	3.14	4.46	5.90	
Inertia	0.93	5.92	0.28	0.77	0.47	0.01	0.23	
Expectations	1.65	1.71	0.37	0.27	-0.13	-0.43	0.22	
Pass-through	5.82	-1.11	-0.34	-2.06	-0.55	-1.12	0.63	
Market prices inflation*	2.28	1.12	4.35	3.41	1.76	5.03	3.77	
Administered prices inflations**	1.85	1.66	2.93	3.31	1.60	0.96	1.05	

\* Excluding the effects of the pass-through, inertia and expectations.

\*\* Excluding the effects of the pass-through and inertia.

Figure 1 – Inflation decomposition: 2008



IPCA Inertia Expect. Pass-through Market prices\*Adm. prices\*\* \* Excluding the effects of the pass-through, inertia and expectations. \*\* Excluding the effects of the pass-through and inertia. With an opposite effect, the set of items described in "(i)", "(ii)", and "(iii)", is estimated to have contributed to an increase of 1.08 p.p. in IPCA, differently from what occurred in the previous three, when the estimated contribution of these three components was negative – a variation basically due to the impact of pass-through.

According to Figure 1 and to data on Table 1, it is noted that, in contrast with that verified in the five previous years, in 2008 the variation of the exchange rate would have contributed to raising inflation rate, but on a scale considerably lower than that observed in 2002, for instance. Specifically, in 2008 the variation of the exchange rate was accountable for 0.63 p.p. of the IPCA increase, equivalent to 10.7% of total inflation - in 2002 the pass through had accounted for 46.4% of total inflation. On the other and, despite the deterioration in expectations, notably since the second quarter of 2008, the contribution of the component, given by the difference between the inflation expectations of agents and the target, was relatively small, though positive. Even in view of the strong uncertainty derived from the global markets and exchange rate depreciation observed in 2008, the relatively modest impact of these components on inflation may be associated, at least in part, to the policy of strengthening of economic defenses against external shocks - for instance, via accumulation of reserves –, as well as to the agents' confidence in the management of the monetary policy, focused on the objective of maintaining inflation at levels compatible with the targets' trajectory, and which has rapidly adjusted during the year to the changes in the prospective scenario for the inflationary dynamics. This assessment finds support in the fact that the inflation expectations for longer horizons have remained well anchored.



Figure 2 – Inflation decomposition: 2007

IPCA Inertia Expect. Pass-through Market prices\*Adm. prices\*\*
\* Excluding the effects of the pass-through, inertia and expectations.
\*\* Excluding the effects of the pass-through and inertia.

Finally, the analysis of Figures 1 and 2 indicates that the component associated to the inertia contributed to inflation in a less intensive manner than verified in 2007. It is worth highlighting that, from total inertia estimated for 2008, 71% corresponds to the inertia of market prices, an item with greater contribution (63.9%) in the 2008 inflation.