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A Deep Dive into the Inflation Outlook

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Inflation dynamics have been unfavorable, as several shocks have had a more permanent effect than anticipated. After ending 2020 at 4.5%, consumer inflation is running at 9.7% for the last twelve months to August and should reach its peak in September (10.4%), before it begins to decline. The main result is a reflection of cumulative shocks that have taken place since the second half of 2020, and that continue to have an impact on consumers. In addition, the pandemic brought new challenges to inflation such as disruption to several production chains and a rapid recovery in demand, reflecting the significant increase in stimulus in the global and domestic economy. Finally, the reopening process has varied greatly among different sectors, leading to different rates of growth and price recovery.

Several intense shocks have impacted prices over the past twelve months. The first began in the second half of last year, as dollar commodity prices rose on the international market. The Commodity Index calculated by the Central Bank, IC-Br[1], measured in dollars, rose 37% from November 2020 to August 2021, while oil was up 60% over the same period. That increase was not offset by the exchange rate appreciation. On the contrary, the Brazilian currency remained on a depreciation trend, putting pressure on the food, fuel and manufactured goods prices. In the case of manufactured goods, supply shocks added even more price pressures, particularly when it comes to semiconductors, which are not expected to normalize until mid-2022.

In turn, regulated prices[2] are up 13.7% over the past 12 months, after a modest increase in 2020 (2.6%). During the worst days of the pandemic, some measures were adopted to limit price increases in some of these items in an effort to reduce the economic impact for families. Health insurance increases were postponed to 2021; the lowest level of electricity tariffs has been applied (the so-called "green flag") for most of the year, even though lower rainfall decreased the amount of hydropower produced; and water and sewage rate and city bus fare hikes were also postponed. Some of those prices have normalized in 2021.

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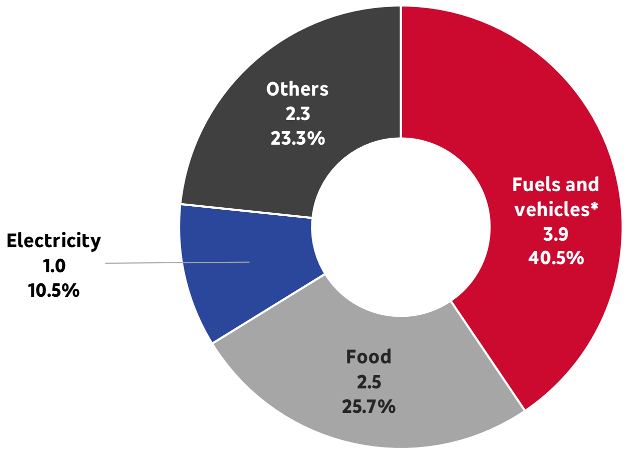
[1] The IC-Br is calculated by the Central Bank and published on a monthly basis. The index is a weighted average of Agricultural, Metal and Energy indicators, so that it is also affected by international fuel prices (Brent oil, natural gas and coal).

[2] These prices, also known as monitored prices, are those that are somehow established by contract, by a regulatory agency or by a government entity, and are generally less sensitivity to supply and demand factors. Examples include fuels, electricity rates, medicines, health insurance, city bus fares, among others.

Finally, recent weather patterns have also increased price pressures. The price of food, especially fresh produce, rose after frosts and there are risks to next year's crops, depending on the amount of rainfall in the coming months. In addition, a particularly dry season caused dam reservoirs levels to drop, leading to the creation of the water scarcity rate, which raised inflation by 31 b.p. in 2021. Chart 1 reinforces these points.

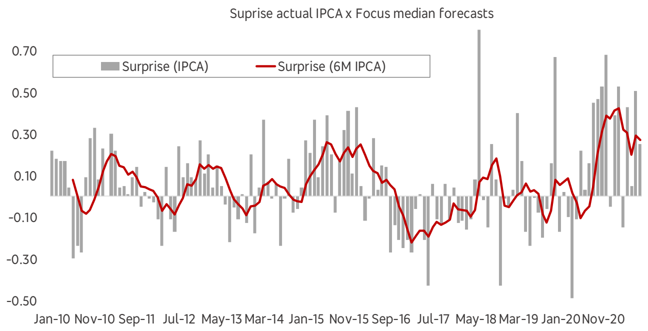
Chart 1: Key contributors to the IPCA
Contribution (in p.p.) and share of the full index (%), over the 12 months prior to Aug/21

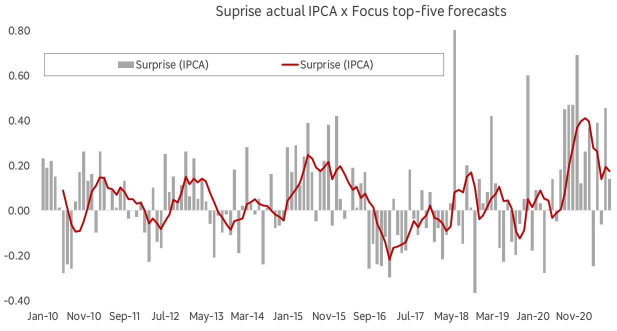


Source: Central Bank, IBGE and Bradesco
* New and used automobiles.

The accumulated effect of shocks has led to constant inflationary surprises in recent months. Both the median forecasts and the top-five market forecasts (set of institutions with the lowest inflation forecast error a month ahead), have underestimated inflation figures in the last twelve months. The errors reaffirm the strong impact of the shocks mentioned above, as well as their persistence.

Chart 2: IPCA surprise vs. market median and Focus top-five
Forecast error one month earlier (6-month moving average)





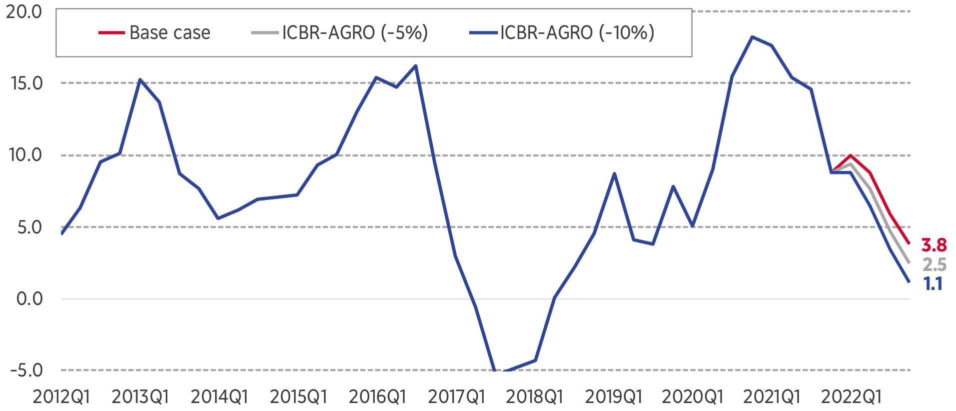
Source: Central Bank, IBGE and Bradesco

We expect the unfavorable inflation dynamics to continue through the end of the year, with the 2021 IPCA accelerating to 9.0%. Behind the final number, we have continued pressure from manufactured goods (10.4%), since supply shocks and commodity price increases suggest new hikes for consumers. In turn, food prices (9.3%) are impacted by commodity price increases and frosts in the month of August, especially when it comes to fresh produce. For regulated items (14.3%), in addition to the implementation of the "water scarcity" flag, we also have new inflationary pressures on gasoline, both due to the recent rise in oil barrel prices and the continued ethanol hikes. Last but not least, the reopening of the economy has caused service prices (4.4%) to bounce back.

Our 2022 IPCA forecast is currently at 3.8%, a strong drop from our 2021 forecast. Although we still see unfavorable inflation in the first quarter, the combination of higher interest rates, slowing economic activity, reduced fiscal stimulus and stable commodity prices in BRL should contribute to a disinflation trend in the economy over the next year. We expect the benchmark Selic rate to increase to 9.25% at the beginning of 2022, with GDP slowing to 1.6%.

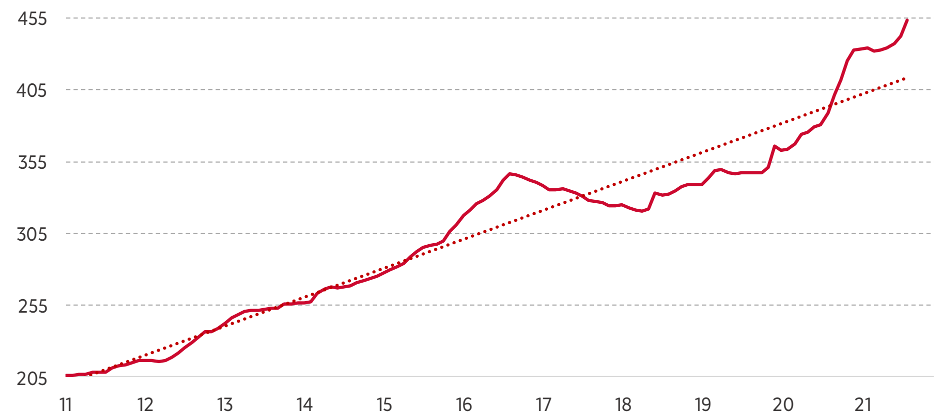
Detailing the determinants, we expect food at home to drop from 9.3% to 3.8% in 2022. After the strong price increases in 2020 and 2021, with weather patterns that affected global and domestic harvests, the expectation is for at least price stability, key to slowing down inflation in 2022. The outlook is for a superharvest for 2021/22, according to the first report published by Conab. The grains harvest is expected to be up 14%, driven by resumed productivity and an increase in planted area. If estimates are confirmed, it will be a new record, which could cause domestic prices to drop as early as next year. Despite the high probability of commodity prices falling in the coming months, we are working with a conservative scenario of stability for these prices. That said, we simulated two alternative scenarios: the first features a 5% drop in agricultural IC-Br and the second with a 10% drop for the same index. The results are shown in Chart 3. In the scenario with favorable shocks, food inflation would come in at 1.1%, amounting to a -40 b.p. contribution to our current inflation scenario. Another important point to consider is the current level of food prices, which is higher than a long-term trend would suggest. New pass-throughs are unlikely for some products, which also should also keep food inflation from reaching very high levels – unless there is a new crop failure, which is not considered very likely at this time (Chart 4).

Chart 3: Different scenarios for food prices
12-month change (%)



Source: Central Bank, IBGE and Bradesco.

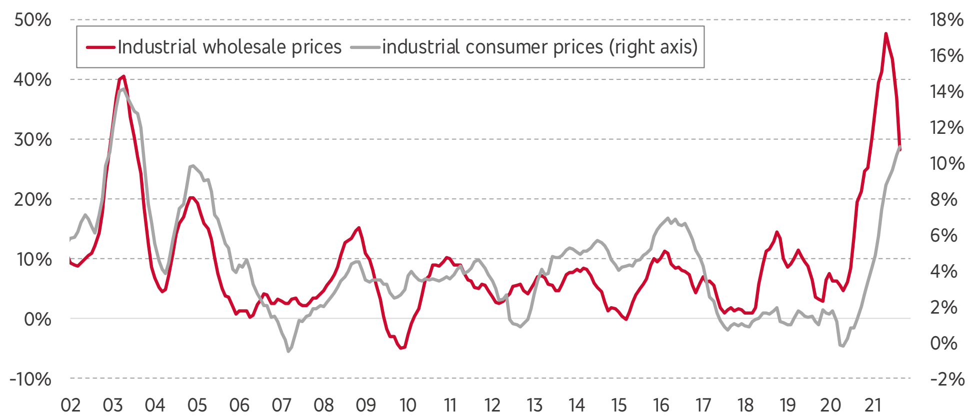
Chart 4: Food prices: level vs. trend



Source: Central Bank, IBGE and Bradesco

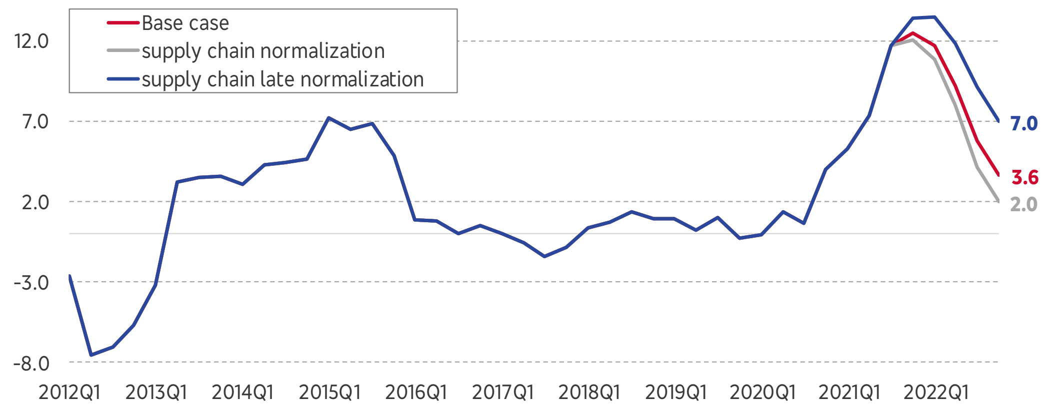
We expect manufactured goods to slow to 3.5% in 2022, after prices rose 10.4% in 2021. Prices are likely to remain under pressure early next year, but we should see a more pronounced slowdown starting in the second quarter, as household demand shifts to services and wholesale shocks dissipate. In fact, wholesale prices have already begun to show signs of slowing, highlighted by the fall in iron ore prices in the international market (Chart 5). Although our scenario does not foresee a quick solution to global supply issues, some normalization is expected. Given the uncertainty about the pace of this adjustment, we ran some simulations, more focused on vehicles. In our scenario for manufactured goods (3.5%), we included a 3.6% increase for "new automobiles". As with food prices, we ran two alternative scenarios: the first one assumes that global chains will normalize as early as 2022, and the second one assumes that we will continue to face problems throughout next year. The results are shown in Chart 6. The lower case scenario, vehicles would rise around 2.0%, while in the scenario featuring higher inflationary pressures, the increase would be around 7.0%, resulting in industrial goods rising around 4.2%. In this scenario, vehicles would contribute +17 b.p. to the IPCA forecast, amplified by a stronger increase in "used cars".

Chart 5: Industrial wholesale goods (IPA) vs. industrial consumer goods (IPCA)
12-month change (%)



Source: Central Bank, FGV, IBGE and Bradesco

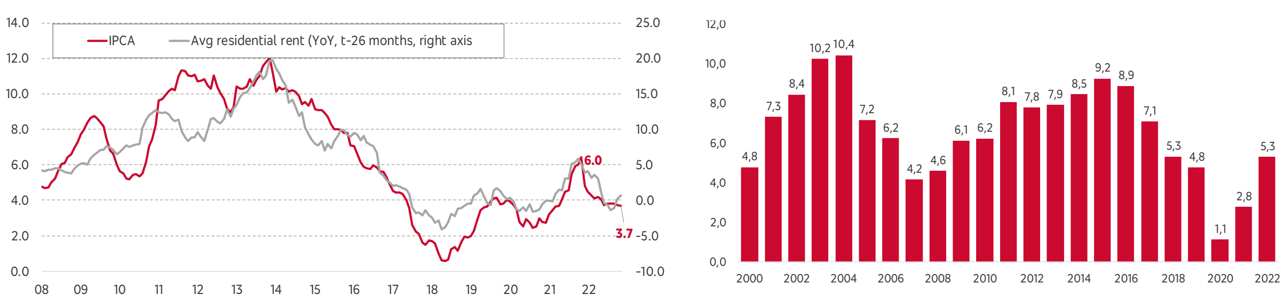
Chart 6: New vehicles x normalization/supply chain delays
12-month change (%)



Source: Central Bank, IBGE and Bradesco

For services, we expect a 4.6% increase after a 4.4% change this year, as prices in this sector are expected to continue recovering over the course of next year. Increased vaccination rates will lead to a more widespread reopening of the economy, which in turn will continue to boost demand for services, while some prices are expected to normalize. Also of note are the forecasts for some specific items with relevant weights, such as education, residential rents and food services. We expect the latter to slow down from 7.8% to 4.5%, in line with the overall food prices trend. We expect residential rents to go up 3.7% (after a 6.0% increase). We expect education prices to accelerate to 5.3%, after two years of low inflation due to mobility restrictions. There are upward risks to these prices as well, since 2021 inflation will end at a high level, which could lead to price adjustments in line with past inflation. With that in mind, we performed an exercise assuming a larger inertial parameter of the Phillips curve, leading to a more pronounced pass-through of past inflation to the future. In this case, we could see bigger price increases for these assets in 2022, at around 5.4% (+ 28 b.p. for the IPCA).

Chart 7: Residential rents and education
12-month change (%)



Source: Central Bank, IBGE, Secovi and Bradesco

Regulated prices will be one of the main sources of disinflation. We expect these prices to come in at 3.2%, compared to 14.3% in 2021. There are several items that should help slow down inflation for this group, starting with electricity tariffs, which is expected to come down from a 20.1% increase to 4.0% deflation. We will end this year with a “water scarcity” rate flag, with an additional charge of BRL 14.20 for each 100 kilowatt-hours consumed. In May next year, we expect the flag to change to “red level 2” (BRL 9.49) and end the year at “red level 1” (BRL 3.97). We understand that there are downside risks to those tariffs, depending on the amount of rainfall, especially starting in October. If the water scarcity is normalized, authorities could switch to a “yellow” flag (BRL 1.87) by the end of next year, leading to a deflation of 12.0% in energy bills, with an impact of approximately -40 b.p.

Another source of decompression within monitored prices are gasoline prices, which rose 38.3% this year and are expected to fall 4.0%. This scenario assumes the price of oil remaining steady at around USD 73/barrel. That should lead to slowing inflation for canister gas (from 33.0% to 4.1%), diesel (38.2% to 4.1%), utility (piped) gas (18.6% to 5.8%) and vehicular gas (34.2% to 4.2%). In an adverse scenario, where the price of oil reaches USD 83/barrel, gas prices could rise 9%, which would have a +30 b.p. impact on the IPCA. These simulations do not account for possible changes to value-added tax (ICMS) rates or collection methods, which could lead to a downward bias for these prices. Health insurance is another relevant item within regulated prices, as they suffered a negative adjustment of 8.2% in 2021, as ordered by the National Health Agency (ANS). We could see higher price adjustments for 2020, as demand for elective procedures, visits and hospital occupancy rates normalizes. Some analysts estimate the need for a 30% adjustment next year, which cause IPCA to increase +30 b.p.

Thus, we expect the IPCA to increase 9.0% in 2021 before slowing to 3.8% in 2022. As mentioned, we expect the various shocks we have seen since the second half of 2020 to subside, which, together with a less expansionary fiscal and monetary policy, should help cool off prices. Our scenarios contain risks from various sources and in both directions, and our estimate of 3.8% seeks to balance the probabilities for these risks. In the lower-case scenario, inflation could come down to 3.0%, while the scenario with upside risks is 5.0%. The summary of the balance of risks for the 2022 inflation forecast is described in Table 1.

Table 1: Balance of risks for the 2022 inflation forecast
12-month change (%) and contribution (in p.p.)

Annual change (%)	Downside	Base	Upside
IPCA	3.0	**3.8**	5.0
Food prices	1.1	**3.8**	3.8
Regulated prices	1.7	**3.2**	5.7
Electricity	-12.0	**-4.0**	-4.0
Gasoline	4.0	**4.0**	9.0
Healthcare	7.0	**7.0**	16.0
Industrial goods	2.8	**3.5**	4.2
Services	4.6	**4.6**	5.4
Education	5.7	**5.7**	8.0
Airline tickets	8.0	**8.0**	26.5
Others	4.3	**4.2**	4.6

Contribution (p.p.) Difference	Downside	Base	Upside
IPCA	-0.80	**3.8**	1.11
Food prices	-0.40	**3.8**	0.00
Regulated prices	-0.40	**3.2**	0.66
Electricity	-0.39	**-4.0**	0.00
Gasoline	0.00	**4.0**	0.30
Healthcare	0.00	**7.0**	0.35
Industrial goods	-0.15	**3.5**	0.17
Services	-0.01	**4.6**	0.28
Education	0.00	**5.7**	0.13
Airline tickets	0.00	**8.0**	0.07
Others	0.04	**4.2**	0.12

Source: Central Bank, IBGE and Bradesco.

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