ECONOMICS

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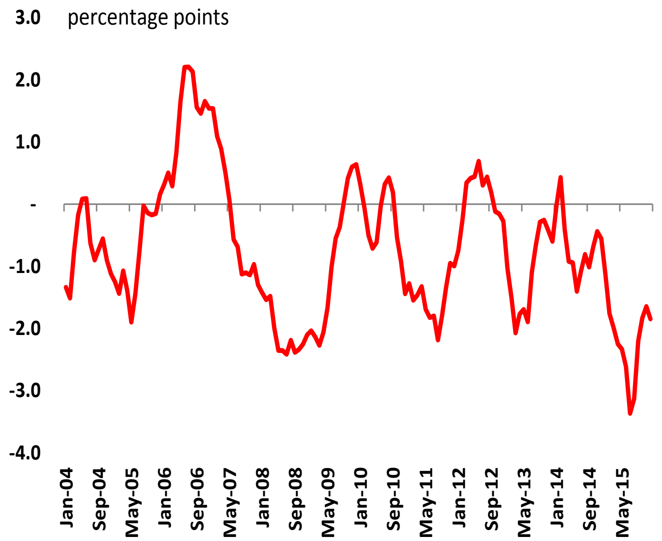
Brazil – Inflation

Mauricio Molan*
mmolan@santander.com.br
5511-3012-5724

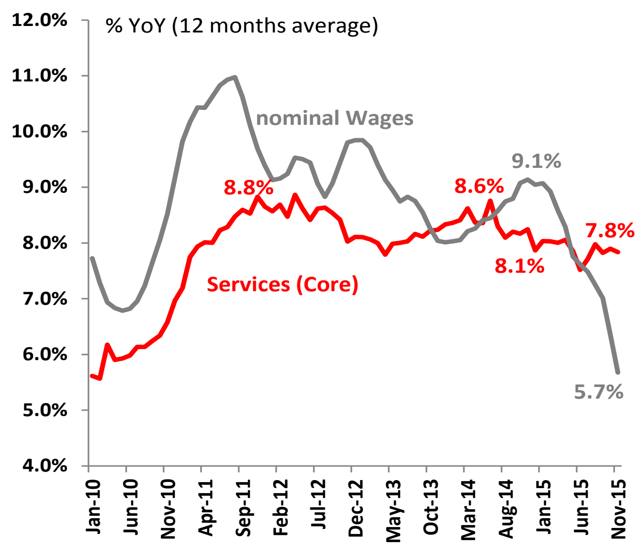
The Counterfactual

- **Inflation was one of the most negative aspects of the Brazilian economy in 2015. Not only did it substantially surprise on the upside during the year, but it also accelerated significantly in the last few months. But we do not believe the recent trend should be extrapolated into 2016.**
- **In our view, some positive aspects are being clouded by the recent spate of bad news about inflation: (1) administered prices (tariffs) have been almost fully realigned; (2) expectations are still consistent with important and unusual disinflation in the near future; (3) we believe the Brazilian *real* exchange rate is currently close to its medium-term equilibrium, and the pass through of recent depreciation seems to have been reasonable so far; and (4) core services inflation (excluding food-related services and flight fares) is already trending down.**
- **According to our estimates, without the meaningful currency adjustment and the correction of administered prices experienced last year, inflation would probably have remained stable in the last couple of years, at 6-7%.**
- **We see real wages and services inflation already going down, which, we believe, means the IPCA in 2016 will probably be well below its 2015 mark and trending downward.**
- **Brazil's monetary authority is issuing signs it intends to increase the Selic in 1Q16.**
- **But, apart from the ongoing deep recession, we believe the lion's share of the relative price adjustment is already behind us. Therefore, any monetary policy tightening would be more targeted toward building a hawkish reputation than obtaining a practical effect on the disinflation process, which, in our view, is already in the pipeline for 2016 and 2017.**

Free Prices Inflation: Expected Variation 12 Months Ahead (Consensus Forecasts – Actual IPCA)



Core Services Inflation (ex Food Related and Flight Fares)

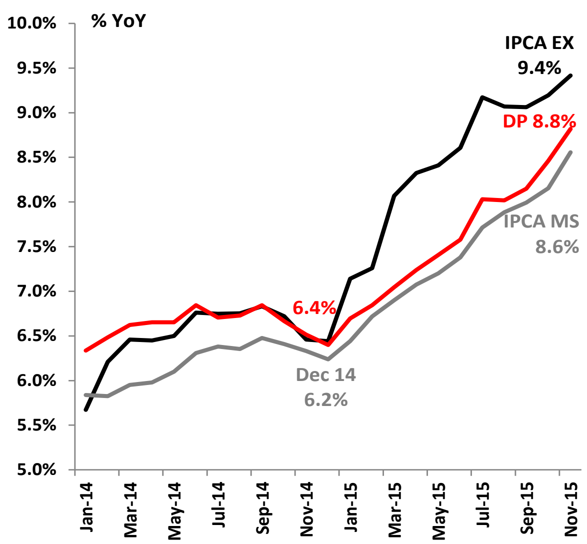


Source: BCB.

Introduction

Inflation systematically surprised for the worst in 2015, in our view, which is worrisome. More important than the fact that inflation rose to 11% in the year are two additional facts: (1) the trend seems to be upward (chart on the left); and (2) price increases are getting more generalized (chart on the right).

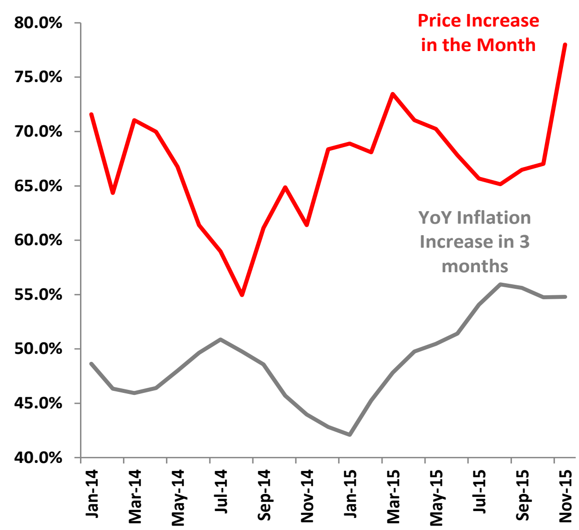
IPCA: Core Measures



IPCA Ex: Excludes the 12 most volatile items (out of a total of 52). DP: IPCA items weighted by volatility (the higher the volatility, the lower the weight). MS: Trimmed Means (excludes top and bottom 20% variations).

Source: BCB.

IPCA: Diffusion Indexes



Price Increase in the month: percentage of items with positive variation in the month.

YoY Inflation increase in 3 months: Percentage of Items with YoY variation higher than 3 months earlier.

Sources: BCB and Santander estimates.

And particularly because of these two aspects, expectations slipped further away from the 4.5% target not only in near-term market surveys but also in long-term premiums embedded in inflation-linked bonds.

We recognize that the price dynamics of the current decade have been far from adequate for complying with the existing inflation-targeting regime, defined by a central objective of 4.5% per year with an upper limit of 6.5%. This is not only because the IPCA hardly went below 6% in the period, but also because without aggressive tariff repression, inflation would probably have surpassed the ceiling of the target every year after 2013.

This consistent adverse performance of inflation has certainly affected expectations and, the mechanisms of price formation in Brazilian society, has likely led to a more entrenched and backward-looking process. It also could suggest that the recent deterioration of inflation dynamics will lead to a performance in 2016 no better than in 2015.

But, in spite of all the negative information related to this subject, we see reasons to believe that inflation is close to an inflection point, and that important disinflation will probably occur in 2016. Among the current wave of bad news, we highlight in this piece some favorable (or at least not as negative) aspects of the current inflationary process: (1) administered prices (tariffs) have been almost fully realigned; (2) expectations are still consistent with important disinflation in the near future; (3) we believe the Brazilian *real* exchange rate is currently close to its medium-term equilibrium, and the pass through of recent depreciation seems to have been reasonable; and (4) core services inflation (excluding food-related services and flight fares) is already trending down.

Therefore, we expect substantial inflation reduction in 2016. We see real wages and services inflation already going down, which means the IPCA in 2016 will probably be well below its 2015 mark and trending downward.

Some Favorable (or Less Adverse) Aspects within Current Inflation Sea of Bad News

1) Tariffs

The need and inevitability of the relative price adjustment of administered prices has been under discussion since the end of 2014, and the intensity of the correction last year has been far higher than previously expected by the market.

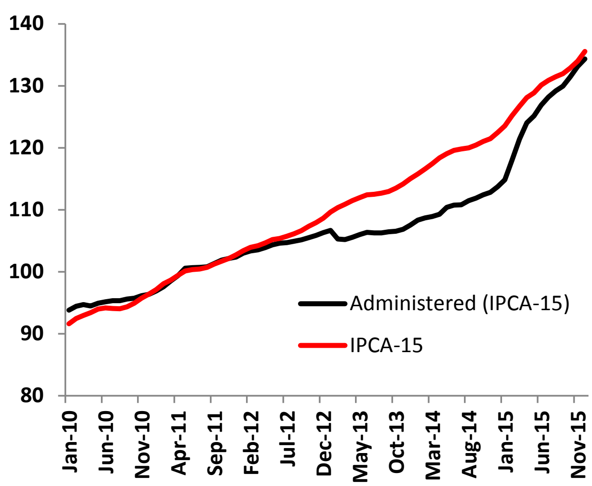
It refers to the large correction of electricity prices and, to a minor extent, gasoline. In practical terms, as the following chart (on the left) illustrates, some tariffs have been artificially reduced in the beginning of 2013, leading to unrealistic lower inflation readings. By the same token, the sudden adjustment experienced during the last 12 months distorted the IPCA level. The same chart suggests there is no compelling reason to expect another round of significant tariff (administered prices) corrections in the near future.

The majority of the repression and subsequent correction of administered prices have been related to electricity tariffs. After having increased by 51% in 2016, we expect a more modest readjustment (close to 6.5%) in 2016. See *Electricity Tariffs and Inflation: Losing Steam,* December 15, 2015.

As for gasoline prices, its contribution to inflation will likely be much lower in the near future than in the last 12 months. After all, local prices are currently 20% higher than the international benchmark. This suggests that any increase in 2016 will be aimed at either improving the cash flow of the Brazilian monopolistic oil producer or incorporating further tax bracket hikes (CIDE), and not for correcting existing repression or imbalances.

Finally, it is also important to emphasize the political cycle, according to which increases in bus fares are usually lower in election years for mayors (as is the case of 2016).

IPCA-15: Headline and Administered Prices (2010 to 2013 = 100)



Source: BCB.

Administered Prices

	2014	2015 (f)	2016 (f)
Regulated	**5.3**	**15.9**	**7.3**
Water and Sewage	-2.7	15.3	6.0
Electric energy	17.1	51.0	6.5
Urban transportation	4.7	9.3	5.5
Gasoline	2.9	20.5	10.0
Diesel	6.9	14.7	10.0
Medicines	4.9	6.7	10.0
Healthcare plan	9.5	12.1	10.0
Telephone lines	-6.4	-1.2	0.0
Market	**6.8**	**8.5**	**6.9**
IPCA	**6.4**	**10.7**	**7.0**

Sources: BCB and Santander estimates.

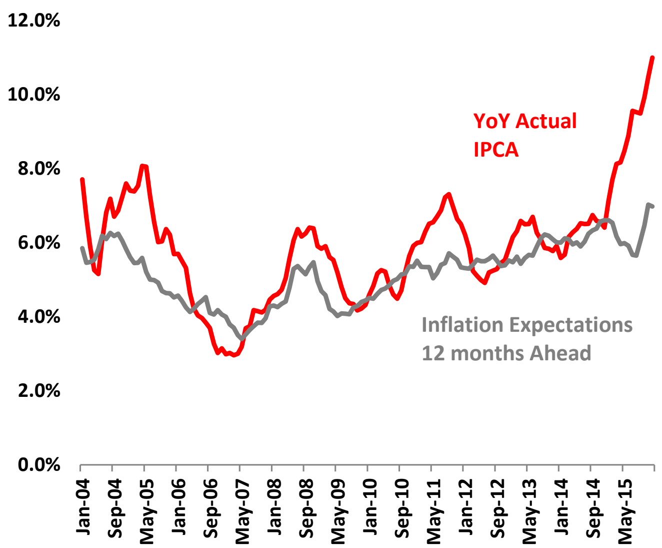
2) Expectations

Increasing inflation forecasts have recently been systematically emphasized not only as a risk to future dynamics, but also as an indication that the monetary authority has been failing to anchor expectations near the target, therefore, making it more difficult to lead the IPCA into a downward trend.

However, we remind investors that the forecasting process is backward-looking, as suggested by the left-hand side of the following chart. In any case, it is possible to see that although expectations are high, increasing, and far from the target; they have implied substantial disinflation.

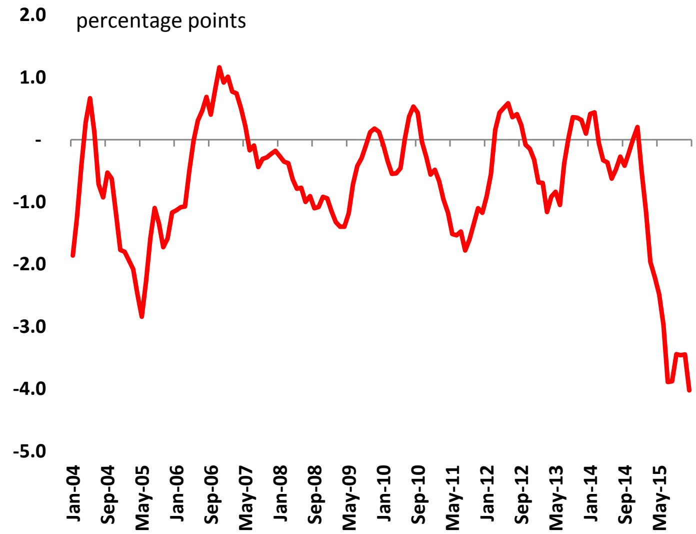
Looking only to the headline IPCA, one can see the market consensus currently expects inflation to decrease 4 p.p. (from 11% to 7%) in 2016 compared with 2015 (see following right-hand chart).

IPCA: Actual and Expectations



Sources: BCB and IBGE.

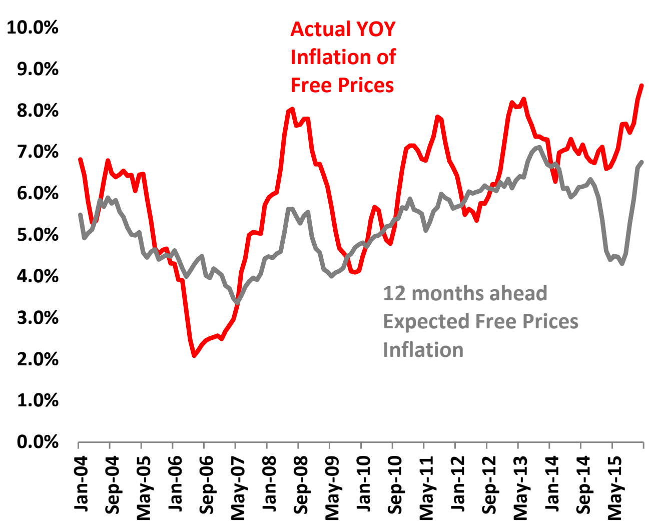
Expected Inflation Variation 12 months Ahead (Consensus Forecasts – Actual IPCA)



Sources: BCB and IBGE.

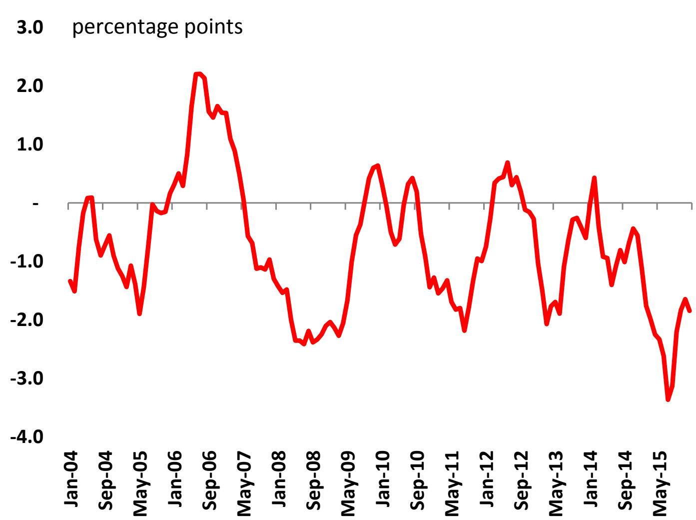
It can be argued that most of the currently expected disinflation is related to administered prices, as previously discussed. To check if our reasoning is also valid for free prices, we constructed a time series of 12-months-ahead expectations for administered prices inflation by interpolating consensus forecasts for years t and t+1, according to the original information released by the BCB. Based on this data and existing 12-months-ahead forecasts for the headline IPCA, **we estimate interpolated ex-ante expectations for free prices**. The following charts show the outcome. They reinforce our suggestion that consensus forecasts may be not as severe as they appear to be. According to our estimate, the market probably expects a decrease of almost 2 p.p. on free prices inflation, which seems to be quite unusual.

Free Prices Inflation: Actual and Expectations



Source: BCB.

Expected Free Prices Inflation Variation 12 months Ahead (Consensus Forecasts – Actual IPCA)



Source: BCB.

We emphasize that such disinflation is expected even considering: (1) current difficulties associated with monetary policy credibility, which may lead to more entrenched inertia and expectations; and (2) there may be a residual inflationary impact of 2015 currency depreciation (the lag of the pass through).

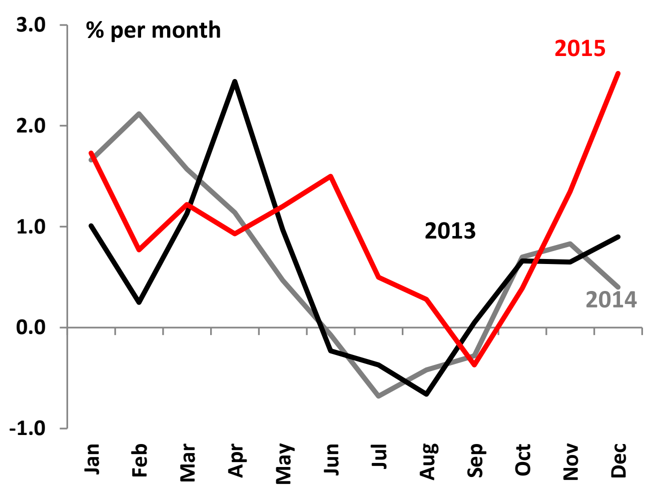
3) Tradables

Another important (in our view nonrecurring) adjustment undergone by relative prices in Brazil last year has been a result of the impressive depreciation of the BRL in the last 12 months (40%). As we believe the Brazilian real exchange rate is not far from its equilibrium for the medium term, and using conservative model outcomes for the lags of which exchange rate variations pass through to local prices, we believe that most of the impact of the adjustment of local relative prices will be concentrated in 2015. According to our models, the currency may have contributed to 1.5-2.6 p.p. to the IPCA in the last year.

Notably, our calculations take into account not only BRL variations but also the prices of commodities measured in foreign currency. Apart from the current wide output gap, the reduction of the prices of commodities in 2015 has been responsible for a moderate pass-through from BRL depreciation to prices. In fact, a YoY decrease of around 10% for the CRB has mitigated the large 47% variation in the exchange rate in the year.

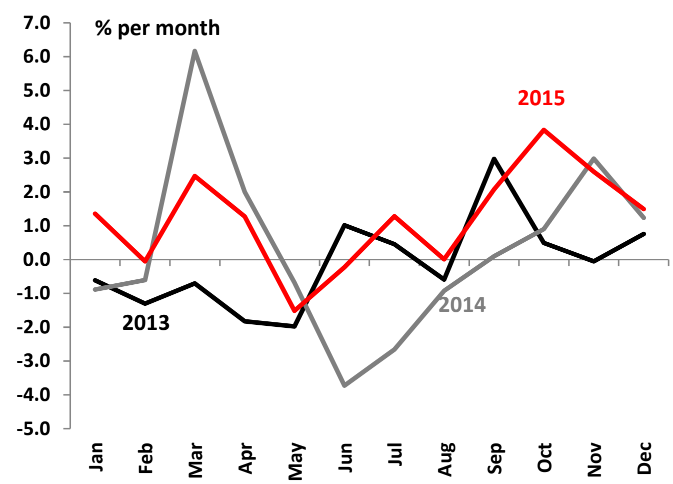
Food: The lion's share of the adverse contribution of exchange rate variation to inflation in the short term usually happens through food prices. Consequently, investors should bear in mind two important points: (1) food was the main driver of higher IPCA readings at the end of last year (in our view, the main force behind increased expectations over the last three months) (see left-hand side of following chart); and (2) there are important indications that food inflation has already peaked (illustrated by wholesale agricultural prices, chart on the right-hand side).

Food Inflation (IPCA-15 Monthly)



Source: IBGE.

Agricultural Producer Prices (IGP-M Monthly)

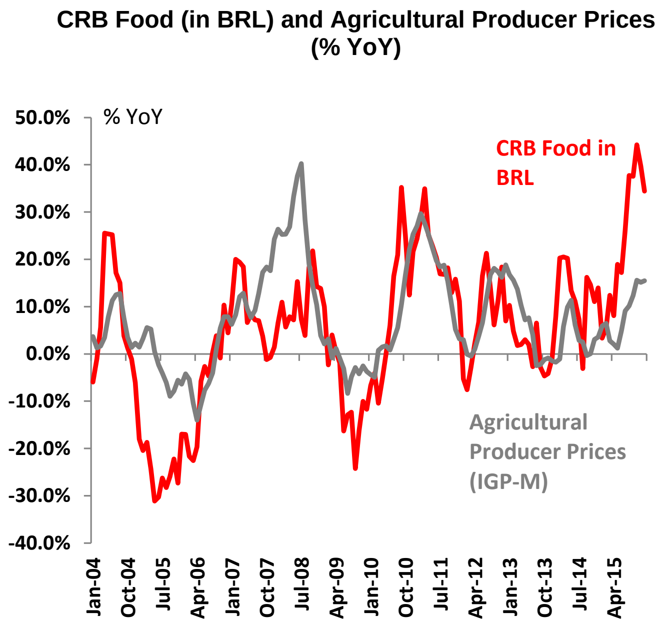


Source: FGV.

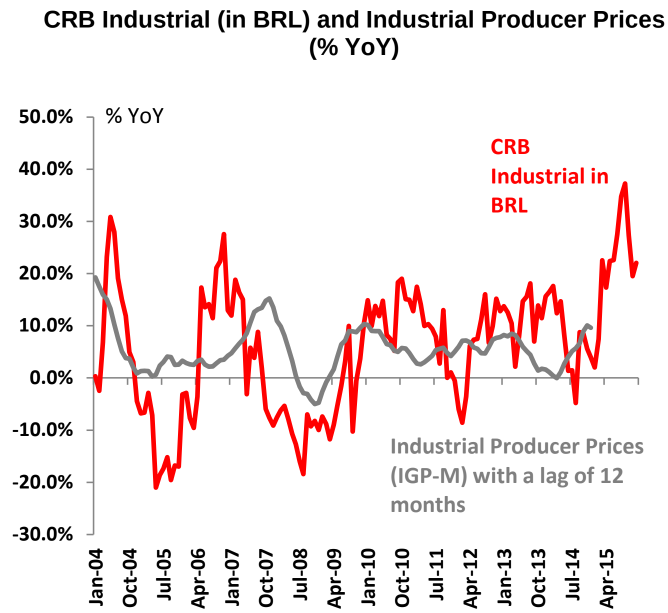
In our view, the year-end food price correction has helped make the inflation process look more generalized rather than being a result of a supply/exchange rate shock.

Also worth noting is the moderate pass-through of the agricultural prices of commodities, measured in BRL, to local food producer prices. The left-hand side of the following chart illustrates this difference and the historically immediate pass through. It can be argued that the large differential (between the CRB Food X Local Agro PPI) means that repressed food inflation is still to be unleashed in 2016. We recognize this may be a risk, but argue that history and statistical exercises show such catch-up is not necessarily inevitable. In our view, such a decoupling should be read as positive news, meaning the output gap is helping to contain the pass-thorough.

Industrial: Unlike what usually happens with agricultural goods, retail industrial products tend to incorporate the effect of BRL depreciation with much longer lags. We estimate the residual impact of the recent adjustment of the real exchange rate to be in the vicinity of 0.5 p.p. to 2016 inflation. Therefore, we do not rule out industrialized inflation in the IPA increasing from the current 6.1% in the year, most likely surpassing the headline reading of the IPCA in 2016.



Sources: Bloomberg and FGV.



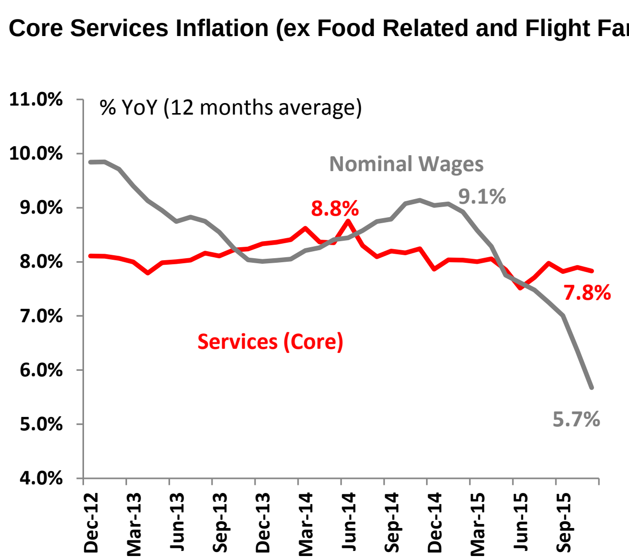
Sources: Bloomberg and FGV.

3) Services

In times of intensive relative price adjustments, the contribution of services inflation is crucial. After all, the lower the inflation of this group, the less painful the adjustment process in terms of headline variation in the Consumer Price Index.

And, even in this aspect, the Brazilian economy has been facing difficulties related to indexation mechanisms, which, in our view, makes services inflation more sensitive to inertia than to the output gap (and wages). The latest YoY inflation of services (measured by the IPCA-15) remained virtually flat in 2015, at 8.3% YoY. Moreover, the already announced minimum wage readjustment of 11.6% will certainly not contribute to optimistic prospects for 2016, by our read.

But a closer look at the dynamics of services inflation suggests the output gap, particularly through the disinflation of wages, is already playing an important role in minimizing the inflationary impact. We focus on core services, which exclude flight tariffs (excessively volatile and fuel-dependent) as well as food-related services (mostly affected by food price dynamics, particularly at the end of 2015). This measure is clearly trending downward in spite of a number of adverse price shocks in the year (see the following chart).



Source: BCB.

Core Services Inflation

BCB's Estimated Coefficients for The Impact of Inertia, Output Gap and Income on Core Services

	Labor Intensive Services	Other Core Services
Intertia	0.46	0.73
Output Gap	0.31	0.12
Income	0.24	0.17
Weight in the IPCA	8%	17%

Sources: Brazilian Central Bank Quarterly Inflation Report. December 2015. www.bcb.gov.br.

It is important once again to raise an important risk to this dynamic in the near future: the burden of inertia on the dynamics of core services inflation in a context of the headline having reached 11% in 2015. According to the BCB's estimates, the coefficients of inertia are substantially higher than the coefficients associated with the output gap and wages. Moreover, the lag is much shorter for the former. This means there may be a risk of core services interruption in the current downward trend, not only as a consequence of the readjustment of the minimum wage, but chiefly due to the growing influence of inertia. If we incorporate the BCB's estimated coefficients in actual and expected dynamics for headline IPCA, wages, and the output gap it leads to forecast higher core services inflation in 2016 than in 2015 (by some 1.4 p.p.).

Here, as with agricultural prices, we see this presents more of an opportunity than a negative. In our view, the fact that core services are trending down, in spite of what has been suggested by the model, should be seen as an indication that the marginal impact of recessive factors is overcoming the negative effect of inertia.

Counterfactual

According to our estimates, both the headline IPCA as well as free prices inflation would be roughly the same in 2014 and 2015, assuming stable real exchange rates and the average tariff readjustment (no repression and the subsequent mostly needed sudden decompression).

Our statistical models suggest a pass-through from currency variations (adjusted by the dynamics of commodities prices) to **free prices inflation** is 5-10%, with most of the impact being recorded in the three to six months following the devaluation. Applying our estimated coefficients to actual BRL and CRB evolution, we estimate the IPCA, excluding administered prices, would have been between **6.0-6.4%** (instead of 6.7%) in **2014** and **5.9-7.0%** (instead of an estimated 8.5% **in 2015**).

Incorporating those estimated values to an assumption of constant (7%) variation for administered prices since 2011, we reach counterfactual headline IPCA inflation for 2014 and 2015 (see the following table).

Counterfactual IPCA

Adjusting for a Constant Variation of Administered Prices and Excluding the Impact of the Currency Variation

	2014		2015	
	Actual	**Counterfactual**	Estim.	**Counterfactual**
IPCA	6.4%	**6.3% - 6.6%**	10.9%	**6.2% - 7.0%**
Administered Prices	5.3%	**7%**	18.0%	**7%**
Free Prices	6.7%	**6.0% - 6.4%**	8.5%	**5.9% - 7.0%**

Sources: IBGE and Santander estimates.

Although our exercise leads to the conclusion that inflation would have remained roughly stable in the absence of distortions and abnormal relative price adjustments generated by the currency, we see reasons to be optimistic about the near future. According to our scenario, currently there are greater pre-disinflationary forces than there were at the beginning of 2015: (1) services prices are trending downward, instead of upward, as in the beginning of 2015; (2) the output gap is currently much wider than it was 12 months ago; (3) monetary policy is substantially tighter now (ex-ante real Selic rate [Selic (-) 12 months ahead expected IPCA] has increased from 5.0% to 7.5%); and (4) wages are contracting in real terms (instead of accelerating, as of the end of 2014).

Therefore, we see this as another piece of information suggesting headline IPCA is close to an inflection point and will likely go into a downward trend in 2016.

Conclusion – Policy Implications

We see some favorable news for inflation in the current wave of negative readings, which suggest the current economic conditions and monetary policy stance is consistent with important disinflation in 2016. Of particular importance is the unusually wide output gap and accelerated pace of unemployment increase.

In this sense, although we are aware that the BCB has been indicating that it intends to tighten monetary policy further, we see no compelling reason to believe it will substantially affect the process of disinflation we believe is already in the pipeline.

It seems that in the context of Brazil's current profound recession, additional monetary policy tightening will be mostly an instrument to restore the credibility eroded by recent poor performance in terms of complying with the target for inflation than an efficient way of changing the current inflation trend. And, as widely understood, credibility takes time to build (although it can be destroyed in an instant).

In our view, more than managing short-term interest rates under the current adverse economic conditions, any attempt to rebuild credibility would be more efficient through institutional changes. These should be aimed at providing increased autonomy to the Central Bank (rather than indications that it will be even more subject to political pressures), in our view, and through mechanisms tying its own hands to the inflation-targeting regime (such as a more transparent inflation forecast targeting official intermediate objectives for inflation and known reaction functions).

Contacts / IMPORTANT DISCLOSURES

Macro Research

Maciej Reluga*	Head Macro, Rates & FX Strategy – CEE	maciej.reluga@bzwbk.pl	48-22-534-1888
Sergio Galván*	Economist – Argentina	sgalvan@santanderrio.com.ar	54-11-4341-1728
Maurício Molan*	Economist – Brazil	mmolan@santander.com.br	5511-3012-5724
Juan Pablo Cabrera*	Economist – Chile	jcabrera@santander.cl	562-2320-3778
David Franco*	Economist – Mexico	dfranco@santander.com.mx	5255 5269-1932
Tatiana Pinheiro*	Economist – Peru	tatiana.pinheiro@santander.com.br	5511-3012-5179
Piotr Bielski*	Economist – Poland	piotr.bielski@bzwbk.pl	48-22-534-1888
Marcela Bensión*	Economist – Uruguay	mbension@santander.com.uy	5982-1747-5537

Fixed Income Research

David Duong	Macro, Rates & FX Strategy – Brazil, México	dduong@santander.us	212-407-0979
Juan Pablo Cabrera*	Chief Rates & FX Strategist – Chile	jcabrera@santander.cl	562-2320-3778
Nicolas Kohn*	Macro, Rates & FX Strategy - LatAm	nicolas.kohn@santandergbm.com	4420-7756-6633
Aaron Holsberg	Head of Credit Research	aholsberg@santander.us	212-407-0978
Isidro Arrieta	Credit Research	iarrieta@santander.us	212-407-0982

Equity Research

Jesus Gomez	Head LatAm Equity Research, Strategy	jgomez@santander.us	212-350-3992
Andres Soto	Head, Andean	asoto@santander.us	212-407-0976
Walter Chiarvesio*	Head, Argentina	wchiarvesio@santanderrio.com.ar	5411-4341-1564
Valder Nogueira*	Head, Brazil	jvalder@santander.com.br	5511-3012-5747
Pedro Balcao Reis*	Head, Mexico	pbalcao@santander.com.mx	5255-5269-2264

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