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Brazil's Monetary Policy Challenge

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Brazil is today facing an interlocking set of economic and policy challenges. On the fiscal front Brazil needs to generate sufficiently high primary surpluses to put debt ratios in a path to justify its investment grade status. There are also a series of challenges around productivity, which impacts the level of potential output as well as international competitiveness and the performance of external accounts. All these challenges must be met if Brazil is to sustain and expand the enormous social advancements made over the last two decades.

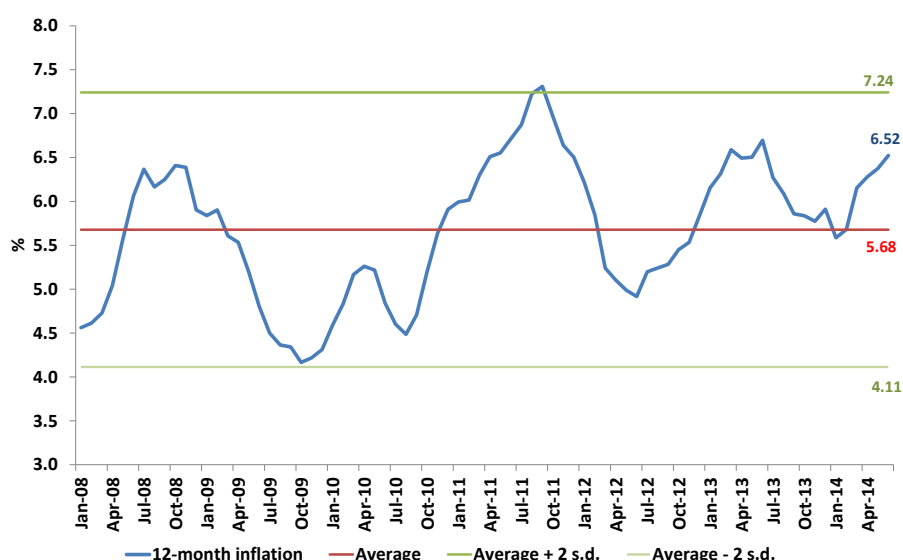
There are also monetary policy challenges that must be faced, and I would like to talk about them today.

I would argue that Brazil faces two specific monetary policy challenges. The first one Brazil has met; the second Brazil still needs to meet.

Both of these challenges have to do with one of the Central Bank of Brazil's (BCB) two main institutional missions: to assure the purchasing power of the currency, which as a policy regime is executed through an inflation targeting framework that has been in place since 1999.

As I see it, the first monetary policy challenge was to avoid inflation from departing from what I will call its "steady state" level – by which I mean a level of mean reversion- despite the not totally unexpected adjustment in regulated prices that began to be implemented earlier this year.

**Figure 1. Inflation – 12-month price change (IPCA)
(2008:01-2014:06)**

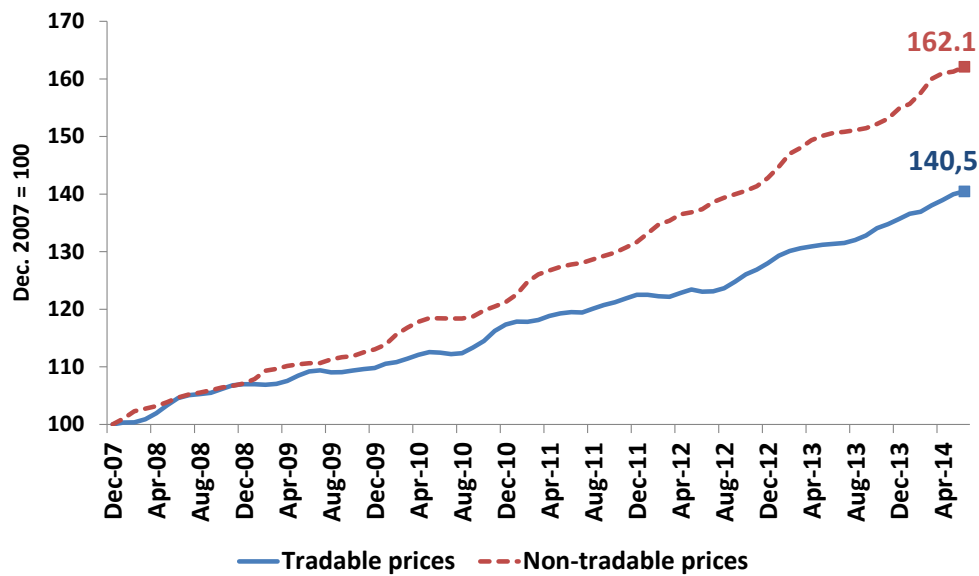


¹ Deputy Governor, Central Bank of Brazil (BCB); these remarks are those of the author and do not necessarily represent the opinions of the BCB.

Since 2008, as you can see in Figure 1, the average level of headline IPCA inflation has oscillated around a mean level of 5.7%. For the moment, let's leave aside for now why this average/steady state level of inflation was above the 4.5% inflation target for this period, something I will return to later.

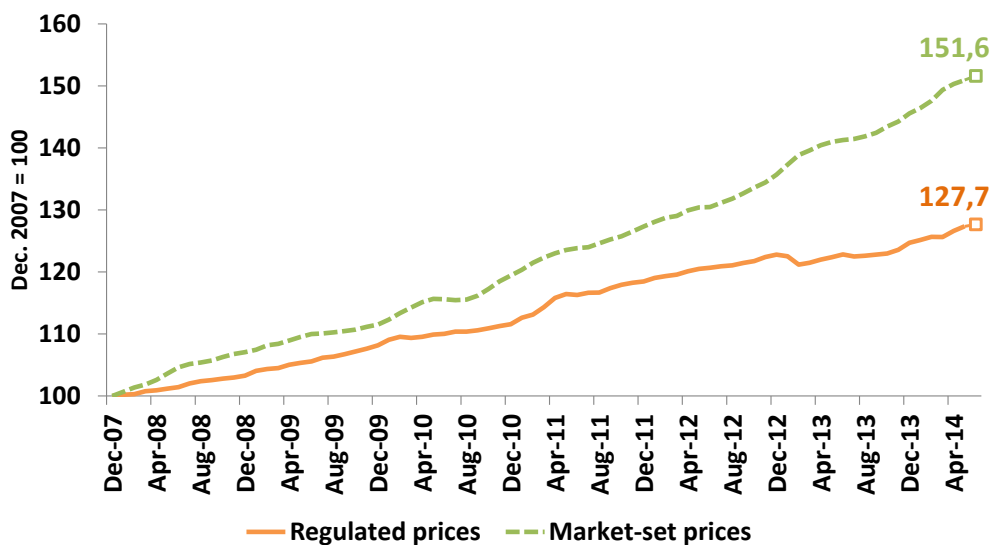
Despite the stationary behavior of headline inflation during this period, there were two sets of potential imbalances growing “below the surface”. One was the price level disparity between non-tradable and tradable goods.

Figure 2. Tradable and Non-Tradable Price Level (2007:12-2014:06)



The other was the disparity between regulated and market-set or “free” prices.

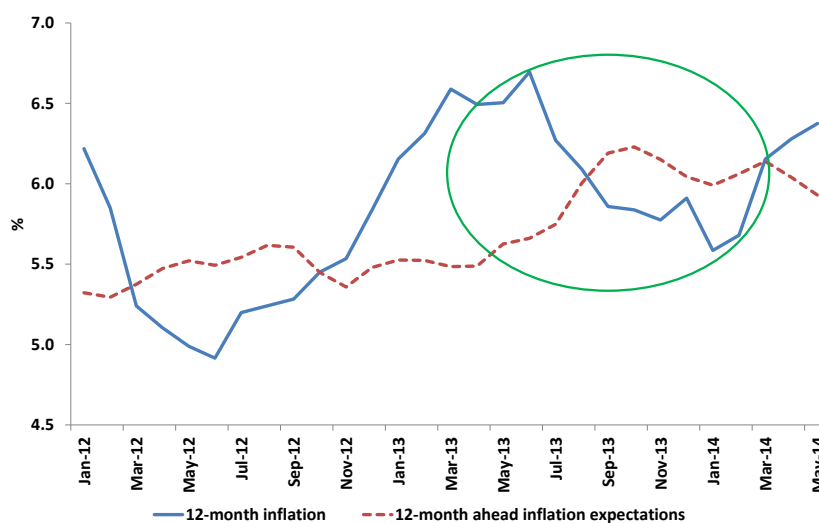
Figure 3. Regulated and Market-Set Price Level (2007:12-2014:06)



These growing and ultimately unsustainable disparities increased due to a variety of factors, both external and domestic, real and policy related, which have been amply discussed, so let us focus here on their monetary policy implications.

One of the most important effects of these disparities for monetary policy is the degree to which they contaminated inflationary expectations. Economic agents correctly understood that at some point in the future these disparities would have to be corrected, causing higher inflation. This explains in part, I believe, why despite the progressive tightening of monetary policy by the BCB after the “tapper tantrum” and the subsequent drop in headline inflation in mid-2013, inflation expectations continued to rise, which feedback into higher actual inflation. What we are seeing today is this expected correction.

Figure 4. Inflation and Expectations
(12-month inflation and 12-month ahead inflation expectations – 2012:01-2014:05)



In an Arrow-Debreu, flex-price world, relative price adjustments don't cause inflation, but in the real world we see a variety of nominal rigidities that cause relative price adjustments to become causes of general price rises.

Thus, given the rapid and simultaneous unwind of the relative price disparities starting earlier this year, which took headline inflation above 8%, I believe there was a real risk that inflation's "steady state" could have shifted permanently higher.

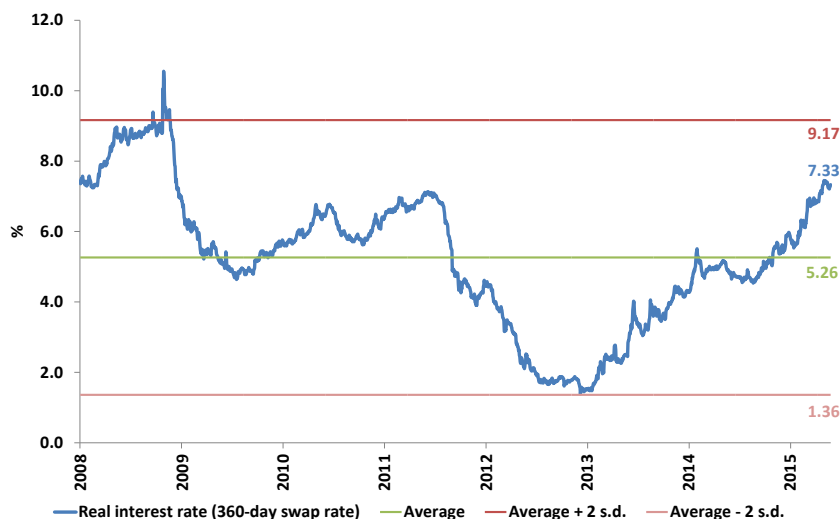
So the BCB needed to act with determination to stop this from happening, which it did. The current cycle has taken the real one-year swap rate, which is the best point on the rates curve to look at the transmission of monetary policy, near to its two standard deviation level, as we can see in Figure 5.

By clearly following the "Taylor Principle"² and adjusting the real policy rate higher as inflation surged, the BCB has assured, I believe, that inflation's steady state would not shift higher despite massive relative price changes. By so doing the BCB met the first monetary policy objective: despite much higher inflation this year, which we expect to close around

² This being the general rule, which is often a necessary condition for unique and stable equilibrium in a wide range of models, that the increase in the nominal policy rate is eventually larger than the increase in inflation. See Woodford (2003) p. 96.

8%, 2016 inflation expectations have actually fallen to the 5.5% region, and beyond 2016 expectations are at or near target. In other words, the BCB is avoiding that the substantial rise in this year's inflation contaminates inflation expectations and likely future inflation performance.

**Figure 5. Real Interest Rate
(360-day swap rate deflated by inflation expectations – 1/1/2008-5/29/2015)**



Despite this important feat, this is not good enough. The BCB's commitment is to have inflation at 4.5%, not 5.5%. The second, and in many ways more difficult challenge, is to shift the steady state lower by a further 1% by the end of 2016.

Why the end of 2016? The literature on optimal monetary policy recommends that facing "cost push" shocks simultaneously impacting inflation and the output gap, "flexible" inflation targeting should allow for a temporary rise in the effective inflation target³. The BCB, by allowing inflation to likely rise above the top of its tolerance range of 6.5% this year, is doing exactly what is recommended by this literature.

Many have argued for a longer convergence horizon, something that may be justified depending how one sets up the welfare loss function. But in my opinion the 2016 horizon seems adequate given the risks of further contamination of inflation expectations and high levels of indexation in the Brazilian economy. Pushing out the convergence date would likely lead to an overall higher "term structure" of inflation expectations and so diminish the probability of convergence of inflation to target at any horizon, leading to an equilibrium higher level of the nominal and real policy rate and so a globally inferior welfare outcome for the economy. The convergence horizon must be long enough to be viable but short enough to constrain present pricing behavior and central bank policies.

So much for the normative question. Now we should ask, can the BCB deliver?

Despite the BCB's strong public commitment to bring inflation to target by the end of 2016, there is still great skepticism that this can be achieved by that date, or in fact at all. Here there are two sets of not mutually exclusive arguments made by the skeptics.

³ For a general rule tying changes in the output gap and inflation see Woodford (2010) pg. 18. Also see Svensson (2013) pg. 35.

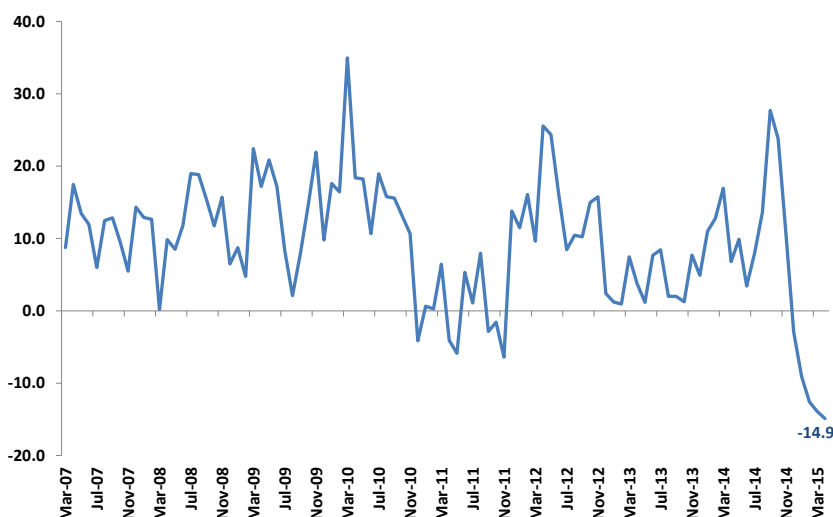
One is about timing: there is just too much inertia in inflation dynamics to allow for such a rapid disinflation, for inflation to drop from 8% or higher back to 4.5%. The second set of concerns are fears that the political will to carry the overall adjustment process – including monetary policy- will falter.

I will leave aside the second set of concerns which would involve a complex examination of the political economy of the adjustment process in Brazil. Suffice to say that any impartial observer should be, in my opinion, very impressed with the progress made so far, bearing in mind the open nature of Brazilian democracy.

So is getting to target by the end of 2016 doable? I think it is, in part because of the profound change in fiscal regime that we are seeing in Brazil today.

Taking the primary position from the 0.6% deficit of 2014 to the planned 1.2% surplus of 2015 and 2% in 2016 will impart a very strong disinflationary impulse to the economy. In fact, Treasury expenditures have already declined substantially, particularly discretionary expenditures.

**Figure 6. Discretionary Treasury Real Expenses
(yoy growth rate – 3-month moving average – 2007:03-2015:04)**

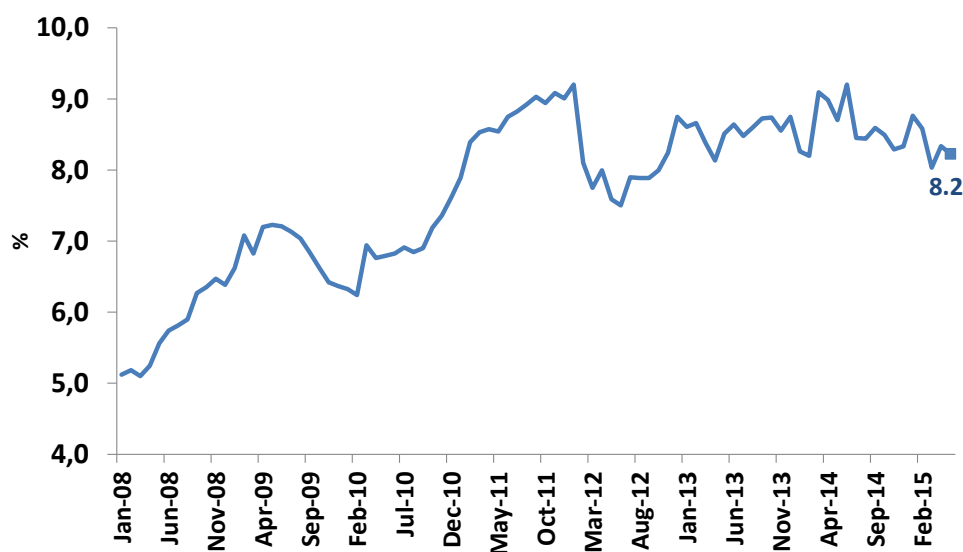


There are other shocks buffeting the Brazilian economy, both real and policy shocks, that all point in the same disinflationary direction. This is especially true if we take into account how these shocks have distinct intertemporal impacts on inflation dynamics. The adjustment of regulated prices, for example, initially leads to higher inflation, but over time the fact that it lowers disposable income should help lower inflation.

While much of this is recognized by market analysts, many still believe that the forces of inertia make the disinflation the BCB is pursuing very unlikely, I have even heard some say it's just not possible.

Now it is true that inflation inertia in Brazil has been very high these past few years, especially in non-tradable inflation, which is mostly service sector inflation. Despite lower than expected growth for most of this period and higher real policy rates, service sector inflation has remained high and sticky since 2011.

**Figure 7. Service Sector Inflation – 12-month price change (IPCA)
(2008:01-2015:05)**



But I think we have to be very careful in thinking about what the past few years can tell us about the future. Inertia cannot be treated as constant. In fact, I would argue that the high inertia of the last few years was in fact caused exactly by a specific economic context and policy environment that is changing dramatically.

The stylized facts, as I see them, go something like this. Beginning around ten years ago, a combination of higher terms of trade, credit market deepening, labor market formalization and expansion of social programs all led to higher income growth concentrated in the poorer segments of the population. These factors increased over all consumption demand, but this was more directed at service consumption, which also happens to be more labor intensive and price inelastic. This created a self-reinforcing, positive feedback “loop” between the service sector and labor markets.

I would argue that over the last year this feedback “loop” has progressively weakened and in fact has now broken down. Recent data shows the labor market adjusting back to its NAIRU level, something that over time will have a beneficial impact on inflation dynamics.

So I put it to you that these developments will lead to substantially lower levels of inflation inertia and, over time, lower service sector and non-tradable inflation. That we cannot clearly see this in the inflation data now should be no surprise: we know that in economies with substantial nominal rigidities that quantities move first and prices move later. But the first shoe has dropped, and there is no reason to believe the second is not about to follow.

Therefore all of us should be very humble in looking at our inflation forecasts, remembering what I think are the particularly applicable lessons presented by Robert Lucas in his famous 1976 paper “Econometric policy evaluation: A critique” when he warned that economic forecasts made when changes in the policy regime are not taken into account will likely be very wrong⁴. The lesson here is that we cannot treat reduced-form coefficients measuring inertia as “structural”. Profound changes in the fiscal and para-

⁴ See Lucas (1976).

fiscal paradigm, real side shocks and the active and vigilant nature of monetary policy will, I believe, lead to much lower levels of inertia than seen in the past four or five years.

Let me make here a quick detour before concluding. So why has what I call the steady state of inflation been above the 4.5% target during the last few years? Why has the target failed to be an effective attractor? I would say two factors were mostly at play.

First, fiscal policy was, year after year, less tight than initially forecast. This will, of course, bias inflation forecasts lower. Second, in “real time”, as one looked at aggregate measures of the output gap after 2011, one would think the gap was a lot less positive- or even negative, as growth expectations disappointed. This also biased inflation forecasts lower. It took time to understand the sectoral nature of inflation in Brazil⁵. These two sets of biases largely explain, I believe, why actual inflation outcomes were above the inflation target and most public and private sector forecasts for the last few years.

Finally, another factor that I believe will make convergence of inflation to target likely is the very nature of the BCB’s policy commitments going forward. Even when our conditional forecast reaches the inflation target, there will likely be much time left before the end of 2016. Given the relatively rapid nature of the monetary policy transmission mechanism in Brazil, eventual material deviations of inflation from its forecast path can be promptly corrected. Asymmetrically, any consideration of policy easing should take into account not only changes in the conditional forecast, but the convergence of market inflation expectations to target at future horizons. This additional requirement is important because only if inflation expectations are well anchored will any future easing cycle allow lower policy rates to positively impact the output gap with no permanent deterioration in inflation dynamics. That is, initiating policy accommodation without well anchored expectations could prove to be unsustainable, leading to higher inflation outcomes and a possible “stop and go” policy regime. The ultimate goal of policy is not just to lead inflation to target at a particular date; it is to induce an inflationary steady state around target, with only stationary deviations around that level in response to exogenous shocks. For this to happen, inflationary expectations at future horizons must be anchored at target.

Thank you for your time.

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⁵ On this question see Alves and Correa (2013).