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Inflationary inertia and the inert Central Bank

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• The Brazilian Central Bank has been uneasy about inflation persistency, and there are good reasons for it. Indeed, to the extent that past inflation affects current and future inflation rates, the very high figure to be recorded in 2015, around 9%, is likely to require even more effort in terms of monetary policy than BCB would be willing/allowed to do;

• We have found evidence that inflation persistency has increased along the 2010-2015 period, reaching possibly even higher than it used to be the case at the start of the inflation targeting regime;

• Our findings, per se, do not offer a clear cut reason for higher persistency, but we believe that, rather than reflecting a cultural/sociological/anthropological change, it actually comes from a change in monetary policy stance in the most recent period;

• Indeed, as BCB has chosen to extend the period of convergence in face of inflation well above the target, the target itself has ceased to be the best bet about near future inflation. The best choice would be a weighted average between past inflation and the target, and the longer would be the convergence period, the higher the weight assigned to past inflation. Inflationary inertia results, at the end of the day, from an inert BCB;

• If our assessment is correct, thus, a change in BCB's stance could lead to reduced inertia. This is indeed possible, but faces a considerable credibility hurdle. It can be shown that a strategy of lower convergence produces a path in which economic activity fares better than it would under a fast convergence scenario. Knowing that, and knowing BCB's reluctance about output costs, agents would conclude that BCB would always choose slower convergence, and would set their inflation expectations accordingly, that is, assigning a higher weight to past inflation and pushing inflation expectations above the target;

• This seems a likely reason for sticky expectations for inflation next year, which remain stubbornly at 5.5%;

• Extending once more the convergence period, as suggested by some, would therefore allow BCB to call a halt in the hiking cycle and reduce output costs. Yet, expectations for 2016 would possibly increase in response to that, and the problem would come to haunt BCB next year. If BCB is serious about convergence in 2016 it will have to push the Selic rate even higher, possibly to 15.50-16.00%.

BCB has made clear recently its concern about inflation persistency, or inflationary inertia, that is, the impact that past inflation would have on current and future inflation. This is understandable: the stronger is the impact of past inflation (about which there is nothing you can do) on current (and future) inflation, the lower is the power of monetary policy over it. Thus, in order to achieve the same reduction in inflation, BCB would have to set rates higher than in a scenario of lower persistency.

This becomes a more pressing concern in light of the very high inflation rate that should be recorded this year, on the vicinity of 9%, which should make it harder to achieve the inflation target in 2016, 4.5%.

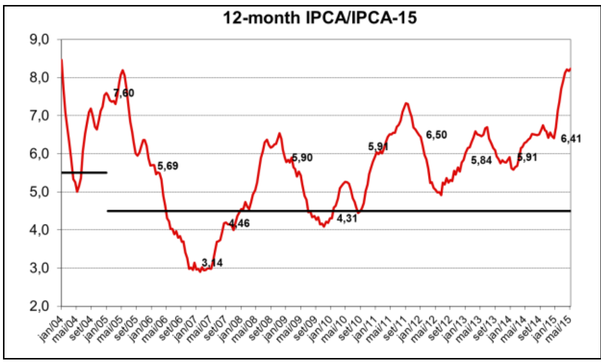
There are reasons to believe that inflationary inertia has increased in recent years, although not to the point of turning inflation into a non-stationary process. Our estimates suggest that inflation persistency in the period between 2010 and early 2015 is higher than the recorded in the period between 2005 and 2009 and possibly higher than the estimated between 2000 and 2004.

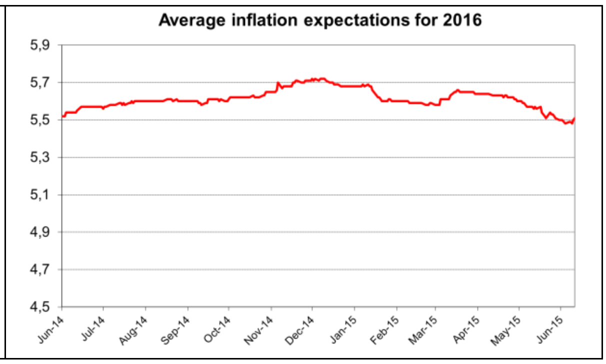
As we argue, this behavior arises, most likely, from the change in monetary policy stance along that period. Even assuming (against all odds) that BCB would have been attempting to reach the 4.5% target over these past few years, it should be clear that it has pursued a strategy focused on slower convergence, that is, extending the convergence period in face of upward inflation deviations.

Such attitude has impacts on inflation expectations. Indeed, if inflation is above the target, yet the monetary authority indicates that it is not willing to converge fast to the target, but to extend the convergence period along a few years, it should be obvious that the inflation target ceases to be the best bet on inflation for that particular year. The best bet, as we intend to show, would be a weighted average between past inflation and the target. Moreover, the longer is the convergence period, the higher would be the weight assigned to past inflation in forming inflation expectations. That is, inertia results from an inert Central Bank.

This puts BCB in a tight spot in case it wishes (as recently announced) to move towards a faster convergence strategy.

It can be shown that the strategy of slower convergence produces lower impacts on economic activity regardless whether agents believe or not on the announcement of faster convergence. Knowing that, agents have no incentives to believe in Central Bank's promises about fast convergence and the economy gest locked in an equilibrium characterized by agents' belief in slower convergence (hence inflation expectations above the target) and the Central Bank duly condoning this belief and adopting a slow convergence strategy.





Sources: IBGE and BCB

In order to beak this pattern, BCB must be willing to accept a high cost in terms of economic activity, which, to be sure, has not been the case under the current administration. It is no surprise, therefore, the reluctance of agents to meaningfully reduce inflation expectations, let alone push it to the 4.5% target.

Extending once more the period of convergence would possibly allow BCB to stop the hiking cycle and avoid further strains on economic activity. But it would be naïve to imagine that inflation expectations would remain at the current level. They would be probably be revised upward and the convergence problem would come to haunt BCB in 2016 and 2017.

In what follows we start by establishing a metric to gauge inflation persistency and then apply it to the data. Thereafter we discuss possible reasons for higher inertia in the more recent period, which we assign to BCB's more tolerant stance, chiefly regarding the speed of convergence. This leads us to the discussion about how to make credible promises for accelerating convergence. The final section concludes.

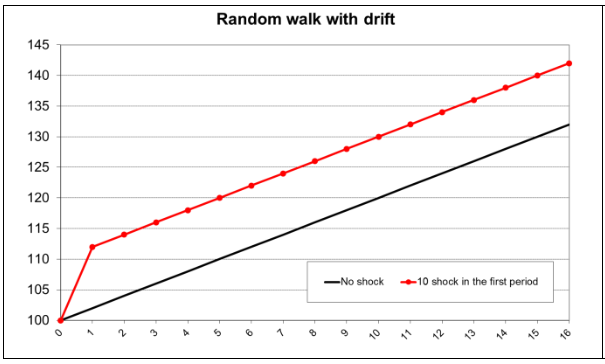
A persistency measure: theoretical background

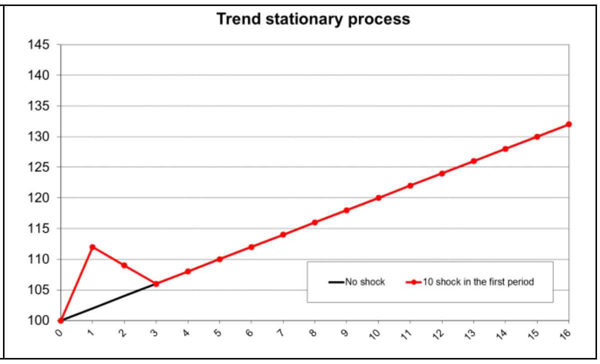
Consider two different stochastic processes describing the behavior of a given time series (inflation, in our case, but applicable to other series as well). The first one is the random walk with drift, as described by the equation below:

$$y_t = \beta + y_{t-1} + \varepsilon_t \qquad (1)$$

In so many words, the observation of a variable today is equal to its previous observation, plus a drift (β) and a random shock, ε. Suppose, for instance, that (a) the first observation of this variable, y_0, is 100; and (b) the drift parameter is 2. If there are no shocks, in the next period y_1 = 102, and then y_2 = 104, etc. The evolution of this variable, in the absence of shocks is given by the black line in the chart below at the left.

Assume, however, that there is a random shock in the first period (ε_1 = 10), so, rather than reaching 102 in the first period, we have y_1 = 112. In the absence of shocks thereafter, we would observe y_2 = 114, y_3 = 116, etc., as depicted by the red line below at the left.





Source: S&A

It does not take much to conclude that, under a random walk, any shock has **persistent** effects. Actually it implies a completely different path for the variable, regardless the size and moment in which the shock takes place. Looking, say, 15 periods after, we find that the variable remains 10 units above the path it would have followed in the absence of the shock (140 vs 130), displaying ***complete*** persistency.

Consider now the following process:

$$y_t = \beta t + \sum_{j=0}^{\infty} a_j \varepsilon_{t-j} \quad (2)$$

This variable grows, in the absence of shocks, at rate β, the same as in the random walk above. Provided that a_j approaches zero for a value of j arbitrarily large, this process is said stationary (in this case, trend stationary). Shocks are not persistent: the variable deviates from the trend, but eventually come back. Indeed, assume, as in the previous case, that (a) the first observation of this variable, y_0, is 100; and (b) the trend parameter is 2. Just as the random walk case under the absence of shocks, the variable would follow the black line, by construction, the same one as the chart above at the left.

Assume, as before, that there is a random shock $\varepsilon_1 = 10$ in the first period, and that $a_1 = 1$, but $a_2 = 0.3$, that is, the shock is fully incorporated in the first period, but reduced by 70% in the second period. In this case, the variable reaches $y_1 = 112$, but – rather than remaining permanently above the trend – it reverts back to it, as depicted above (the red line at the right). There is some persistency, to be sure, as the variable deviates from the trend for two periods (one due to the shock and the other thanks to the shock persistency), but 15 periods into the future (or, for that matter, in any period after 2), it is back to the original trend (hence the term "trend stationary").

Thus, if we had to forecast the variable k periods into the future, knowing that a 10 shock had taken place at t=1, our best guess in the case of the trend stationary process would be 100+βk. If the variable followed a random walk process, however, the best guess would be 100+βk +10.

That said, consider the value of a random walk with drift at period t+k:

$$y_{t+k} = \beta + y_{t+k-1} + \varepsilon_{t+k} \quad (1a)$$

But y_{t+k-1} is given by:

$$y_{t+k-1} = \beta + y_{t+k-2} + \varepsilon_{t+k-1} \quad (1b)$$

Hence, replacing (1b) into (1a) we find:

$$y_{t+k} = 2\beta + y_{t+k-2} + \varepsilon_{t+k} + \varepsilon_{t+k-1} \quad (1c)$$

Yet, we can proceed, using the definition of y_{t+k-2}:

$$y_{t+k-2} = \beta + y_{t+k-3} + \varepsilon_{t+k-2} \quad (1d)$$

Which can be replaced into (1c) to yield:

$$y_{t+k} = 3\beta + y_{t+k-3} + \varepsilon_{t+k} + \varepsilon_{t+k-1} + \varepsilon_{t+k-1} \quad (1e)$$

At this time, one can readily guess that, if we keep replacing the lagged values of y_{t+j} until j=0, that is, until we reach y_t, we would find:

$$y_{t+k} = k\beta + y_t + \sum_{j=0}^{k} \varepsilon_{t-j} \quad (3)$$

or

$$y_{t+k} - y_t = k\beta + \sum_{j=0}^{k} \varepsilon_{t-j} \quad (3a)$$

That is, the difference between periods t and (t+k) would be given by the trend (βk) plus the full history of random shocks, e_{t+j} (from j= 0 to j=k).

Hence, the variance of the difference between y_{t+k} and y_t would accumulate the variance of the random shock, given by:

$$V(y_{t+k} - y_t) = k\sigma_\varepsilon^2 \quad (4)$$

where σ_ε^2 is the variance of the random shock ε. Thus, the farther we look into the future, the higher is the variance of the difference between the future and the current observation of variable y. The variance of this difference is proportional to the horizon k. We can, therefore, define the variance ratio as:

$$\theta \equiv \frac{1}{k}\frac{V(y_{t+k}-y_t)}{V(y_{t+1}-y_t)} \quad (5)$$

From (4) we can easily see that, in the random walk case, the variance ratio would be precisely 1.

$$\theta \equiv \frac{1}{k}\frac{V(y_{t+k}-y_t)}{V(y_{t+1}-y_t)} = 1 \quad (6)$$

Back to the trend stationary process:

$$y_t = \beta t + \sum_{j=0}^{\infty} a_j \varepsilon_{t-j} \quad (2)$$

It is straightforward to conclude that y_{t+k} would be given by:

$$y_{t+k} = \beta(t+k) + \sum_{j=0}^{\infty} a_j \varepsilon_{t+k-j} \quad (2a)$$

Now let i = k-j, so we can re-write (2a) as:

$$y_{t+k} = \beta(t+k) + \sum_{i=k}^{\infty} a_i \varepsilon_{t-i} \quad (2b)$$

Deducting (2) from (2b) we find:

$$y_{t+k} - y_t = \beta k + \sum_{i=k}^{\infty} a_i \varepsilon_{t-i} - \sum_{j=0}^{\infty} a_j \varepsilon_{t-j} \quad (7)$$

Hence, the variance of (y_{t+k} – y_t) would be given by:

$$V(y_{t+k} - y_t) = \sum_{j=0}^{k} a_j^2\, \sigma_\varepsilon^2 \quad (8)$$

If, as we stated earlier, the condition for stationarity is met (that is, a_j approaching zero for j arbitrarily large), this variance will be finite. Moreover, the variance ratio would be:

$$\theta \equiv \frac{1}{k}\frac{V(y_{t+k}-y_t)}{V(y_{t+1}-y_t)} = \frac{1}{k}\frac{\sum_{j=0}^{k} a_j^2\sigma_\varepsilon^2}{\sum_{j=0}^{1} a_j^2\sigma_\varepsilon^2} \quad (9)$$

Given that a_j approaches zero as j increases, θ would be typically smaller than 1 for large values of k, that is, the effect of (1/k) would prevail over $\sum_{j=0}^{k} a_j^2\, \sigma_\varepsilon^2$. That said, we have to be careful about the choice of k (it cannot be too large relative to the sample size, otherwise it would push the variance ratio of stationary process towards zero).

We can, therefore, use the variance ratio (5) to assess the properties of the time series. Values that are not significantly different from one would point at a random walk, whereas values below one, would suggest a stationary process. Moreover, the smaller is the variance ratio, the less persistent is the stochastic process.

As we are interested in finding whether there is evidence of more persistent inflation in Brazil in the last 5 years, the variance ratios would provide a natural measure.

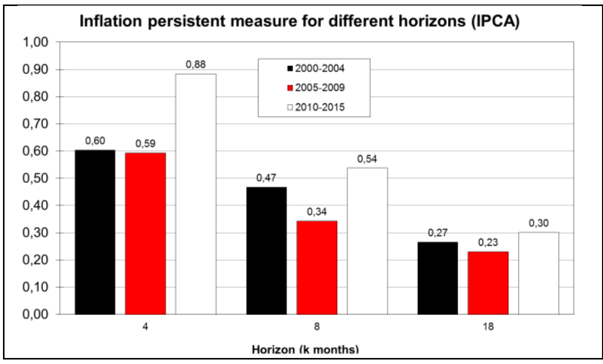
Application to the data

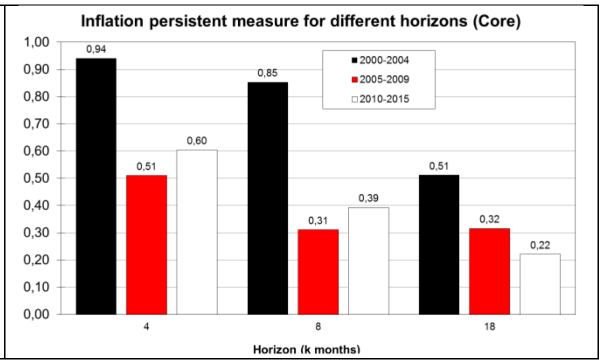
We estimated the variance ratio of monthly inflation in Brazil from 2000 to 2015, covering the inflation-targeting period. In order to assess possible changes in inflation persistency, we divided this period into 3 similar sized sub-periods: from 2000 to 2004, from 2005 to 2009 and from 2010 to 2015. The first two periods contain 60 observations, whereas the third one is slightly longer, with 64 observations.

A relevant issue is the length of the horizon, k. As noted above, for very large values of k, we would risk pushing all estimates of (stationary processes) towards zero, which would render the exercise useless. We decided, thus, to use 3 horizons: 4, 8 and 18 months, the latter corresponding to 30% of the sample in the first two periods and slightly less (28% of the sample) in the most recent period.

The chart below (at the left) summarize our findings. We note first that the longer is the horizon, k, the lower are the estimates of the variance ratio, as expected. In addition to that, estimates suggest a stationary processes.

More importantly, however, we find evidence that, at least for headline inflation (more on that in a second), persistency seems to be higher in the most recent period. In all 3 different horizons our persistency measures indicate a decline in the second period relative to the first, followed by an increase in the third period that pushes the persistency measure even higher than it was between 2000 and 2004.



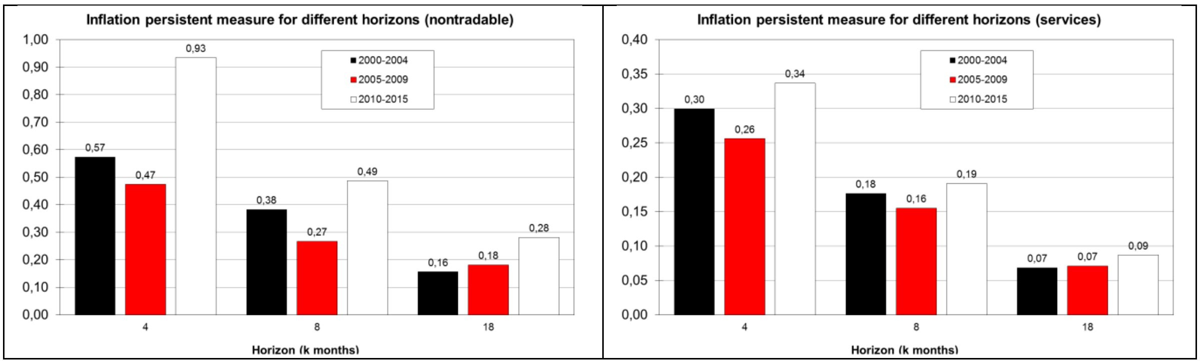


Source: S&A

We replicated our estimates using an average of core inflation measures (above at the right) and found that results are roughly comparable. Persistency did decrease from 2000-2004 to 2005-2010, but reversed course in the more recent period, except for the 18-month horizon, which suggests lower persistency in the most recent period.

In order to capture the dynamics of demand and the output gap (or unemployment) on inflation, we made a similar analysis of non-tradable and services inflation. As one can observe from the charts below, the results are largely commensurate to what we have found so far.

In the case of non-tradable inflation we estimate higher persistency in the third period (2011-2015) for all horizons (but for the 18-month horizon there was also a modest rise in persistency from the first to the second period).



Source: S&A

The same pattern applies for services inflation, although the differences are smaller in this case.

Summing up, in 11 out of 12 different cases (4 different inflation measures and 3 different horizons), our estimates suggest that inflation has become more persistent in the most recent period (2011-2015). The question, of course, is why.

Explorations into inflationary inertia

There are at least two ways of introducing inertia in a simple macro model. The most straightforward (and least interesting) assumes that, when setting their prices, companies and workers alike are not only affected by the current state of the economy (captured by the output gap, y), but also by inflation expectations ($E_t\pi_{t+1}$) and by past inflation, π_{t-1}, in addition to a random supply shock, e_t, as described by the Phillips Curve below.

$$\pi_t = \rho\pi_{t-1} + (1-\rho)E_t\pi_{t+1} + \alpha y_t + e_t;\ \alpha>0;\ 0\leq\rho<1 \qquad (10)$$

The output gap in the present context depends only on the distance between the actual real interest rate (defined as the difference between the nominal interest rate, i_t, and expected inflation, $E_t\pi_t$) and the neutral rate, plus a demand shock, u_t.

$$y_t = -\beta(i_t - E_t\pi_t - \bar{r}) + u_t \qquad (11)$$

Closing the model we specify a simple rule for monetary policy: the Central Bank sets the nominal interest rate in response to the difference between expected inflation and the target. Whenever expected inflation rises above the target, the Central Bank raises the real interest rate, and, conversely, it pushes down real rates when expected inflation reaches below the target.

$$i_t = \bar{r} + E_t\pi_t + a(E_t\pi_t - \bar{\pi});\ a>0 \qquad (12)$$

Combining (10) to (12) we arrive at the following second degree difference equation:

$$E_t\pi_t = \omega\rho E_t\pi_{t+1} + \omega(1-\rho)\pi_{t-1} + (1-\omega)\bar{\pi} \qquad (13)$$

where $\omega = 1/(1+\beta\alpha a)$.

In this case, the solution to (13) is given by the following equation:

$$E_t\pi_t = \varphi\pi_{t-1} + (1-\varphi)\bar{\pi} \qquad (14)$$

where ϕ is the stationary (i.e., lower than 1) root of the second degree equation:

$$\varphi^2 - \frac{1}{\omega(1-\rho)}\varphi + \frac{\rho}{1-\rho} = 0$$

In this case, expected inflation will be the weighted average of past inflation and the target, that is, inflation will display persistency or inertia, but stemming from our initial assumption that it does display persistency. In so many words, we would be basically assuming the result we want to prove.

Methodological discomfort aside, it might even be true that, for whatever reason, people look backward when they form inflation expectations. It is, however, much harder to explain why they would be more or less backward looking in different periods, as suggested by our estimates.

A more promising way of addressing the issue assumes away any kind of backward behavior in the Phillips curve, which would be written as:

$$\pi_t = E_t\pi_{t+1} + \alpha y_t + e_t \;\; ; \alpha>0 \qquad (10a)$$

Prices are set today based on the state of the economy (the output gap) and inflation expectations.

The demand side remains the same, as described by (11), but now we allow the Central Bank to choose the speed at which inflation would converge to the target. Indeed, rather than sticking to the rule (12), we assume that the Central Bank sets interest rates as a weighted average of the past interest rate, i_{t-1}, and the one that would be given by equation (12), that is:

$$i_t = \rho i_{t-1} + (1-\rho)[\bar{r} + E_t\pi_t + a(E_t\pi_t - \bar{\pi})];\ 0 \leq \rho \leq 1 \qquad (12a)$$

One can easily see that, for ρ=0, we would be back to the original version of (12), whereas for ρ = 1 the interest rate would be constant, i.e., the Central Bank would never react to deviations of expected inflation from the target. In between, the closer is ρ to zero, the faster would be the convergence of inflation towards the target, and, conversely, the closer it is to one, the slower would be convergence.

Combining (10a) to (11) and (12a) we arrive at the following second-order difference equation:

$$E_t\pi_t = \omega_1 E_t\pi_{t+1} + \omega_2\pi_{t-1} + (1-\omega_1-\omega_2)\bar{\pi} \qquad (13a)$$

where: $\omega_1 = \frac{1}{1+\alpha\beta[a(1-\rho)-\rho]}$ and $\omega_2 = \frac{-\alpha\beta\rho}{1+\alpha\beta[a(1-\rho)-\rho]}$

Again, the solution to (13a) would take the form of expected current inflation being the weighted average of past inflation and the target:

$$E_t\pi_t = \theta\pi_{t-1} + (1-\theta)\bar{\pi} \qquad (14a)$$

Where $\theta = \frac{(\omega_2-\mu_1)}{1-\omega_1(1-\mu_1)}$ and μ_1 is the stationary root of:

$$\mu^2 - \left(1/\omega_1\right)\mu + \left(\omega_2/\omega_1\right) = 0$$

Nice technicalities apart, now inflation persistency arises from the Central Bank behavior in terms of its monetary policy. It can be shown that in the case of ρ = 0, θ = 0 as well, and expected inflation is always at target (although inflation itself might deviate temporarily due to supply and demand shocks). By the same token, for $\rho = 1$, $\theta=1$ and expected inflation would always be equal to past inflation (hence actual inflation would follow a random walk).

That is, the longer the convergence period, the higher persistency would be. The intuition, amazing as it might sound, is straightforward.

Consider initially the case of a Central Bank that faces no inertia from the behavior of price setters and sets $\rho = 0$, that is, convergence is immediate. Expected inflation is, thus, always at the target, although actual inflation might deviate thanks to the aforementioned demand and supply shocks. On average, however, inflation is equal to the target.

Knowing that, the best guess for inflation in any given period, considering that demand and supply shocks are not known in advance, is always the inflation target.

Suppose, instead, that, faced with a large shock, that pushed inflation way out of the target, the Central Bank, afraid about the costs of a fast disinflation, decides for slower convergence, setting $\rho>0$. To simplify things, assume that the Central Bank decides to reach the target only 3 years from now, distributing uniformly the convergence towards the target.

It should be clear that, under these circumstances, it is no longer optimal to believe that inflation in the current period will be at the target (plus unforeseen shocks). It will be, if everything plays out right, one third of the way between past inflation and the target at the end of the first year, two thirds of the way in the second year and at the target in the third (shocks aside).

The best bet for inflation in the current year would be, therefore, a weighted average of past inflation (with weight 2/3) and the target (with weight 1/3). That is, slower convergence introduces optimal inertia in inflation expectations.

We do not have to assume backward looking agents to conclude that inflation would have an inertial component as well.

Sure, it might even be the case that we have **both** forces at work, backward looking agents and a Central Bank that favors slow convergence, contributing for persistent inflation[1].

That said, if we have to come up with a reason for an increase in inflation persistency, it seems far more likely that the change comes from the Central Bank's different stance regarding the speed of convergence than some unexplained modification in individuals behavior. For this reason we tend to assign higher persistency precisely to the extension of the convergence period after 2011[2].

Reputational implications

If our reasoning is true, there are good reasons to believe that higher inflation persistency stems from a more relaxed stance in terms of monetary policy. Having said that, the natural question is whether a change in the Central Bank's stance, now favoring faster convergence, would necessarily reduce persistence.

[1] In this case we would combine equations (10), (11) and (12a) to arrive at a third degree difference equation, which would be too hard to solve.
[2] We are being possibly too generous here. There are legitimate doubts on whether BCB has actually pursued 4.5% at any time after 2011, but we are leaving this stone unturned. That said, there is no dispute that BCB has extended the convergence period from 2011 onwards.

We would expect the answer to be a positive one, yet, there are complications related to the perception about the Central Bank actual intentions. Indeed, it is one thing to state that it aims at faster convergence; it is another once we try to gauge the Central Bank incentives to do so.

More to the point, people can believe in the Central Bank, or not. If they believe in the Central Bank, they would set their inflation expectations to be equal to the target (the case $\rho = 0$, discussed above). In this case, BCB could choose between a fast convergence ($\rho = 0$), or slow convergence ($\rho > 0$).

Should it go for fast convergence, it can be shown that the output gap would be, on average, zero, that is, the economy would operate at its potential. Yet, in case people believe in fast convergence, but BCB actually opts for slow convergence, it would obtain short term gains, that is, the output gap would be positive (the economy would be operating above potential, or unemployment below the natural rate).

Hence, an output minded Central Bank would go for slow convergence, even if people believe in fast convergence.

Suppose, instead, that people do not believe in the Central Bank promises, and therefore insist in setting their inflation expectations as a weighted average of past inflation and the target. Under these circumstances, if the Central Bank attempts fast disinflation, it will cause a negative output gap, in order to offset the inflationary effects of above target expectations, that is, disinflation would be costly.

If, however, faced with incredulous agents, who believe that inflation would remain above the target, the Central Bank would go for slow convergence, it can be shown that it would get a positive output gap as well.

The possible outcomes of these combinations can be summarized in the table below[3].

Expected output gap

Convergence	**Expected inflation**	
	$E_t\pi_t = \bar{\pi}$	$E_t\pi_t = \theta\pi_{t-1} + (1-\theta)\bar{\pi}$
Fast	Zero output gap	Negative output gap
Slow	Positive output gap	**Positive output gap**

Source: S&A

As one can see, by choosing slow convergence, the Central Bank would always obtain a better result in terms of economic activity than going for fast convergence. Knowing this, however, agents would not believe the Central Bank, regardless of its promises of fast convergence, and would set their expectations under the assumption that the Central Bank would opt for slow convergence.

In other words, the (sub-game perfect Nash) equilibrium in this setting would be for agents to expect persistent inflation and the Central Bank to go for slow convergence (for this reason we mark the Southeast corner of the table above in

[3] Although we present this as a table, this should not be thought as a simultaneous game, but rather as a sequential one, in which agents first decided to believe BCB or not, and then BCB decide to go for fast or slow convergence.

yellow). The Central Bank would be locked in this equilibrium and unable to convince agents that it would be really serious about fast convergence.

It would only convince agents, if it is prepared to withstand a recession in the name of its fast convergence principles.

Some final thoughts

This has been an unusually long discussion and, believe me, there are still quite a few more issues that we have left aside for conciseness. Yet, I think that it helps understand the difficulties faced by BCB at the current moment.

Recapitulating, we have uncovered evidence that inflation has become more persistent in the period between 2011 and 2015 than it was in 2005-09 and possibly more than it was even in 2000-04. In our opinion, it seems far more likely that this results from agent's perception that BCB had chosen a slower pace of convergence in that period than an unexplained change in the backward looking parameter (ρ) of the Phillips curve.

This, however, has locked BCB into a perverse equilibrium. There are incentives, from the perspective of economic activity, to adopt a slow convergence strategy, but, knowing that, agents maintain (or even assign more weight to) a backward looking component in their inflation expectations.

As we see it, the only way to break this equilibrium requires BCB to clearly show that it does not care about economic activity as much as it cares about faster convergence. To put it differently, BCB must be prepared to hike interest rates up to the point in which there are no longer doubts on its stance regarding inflation convergence.

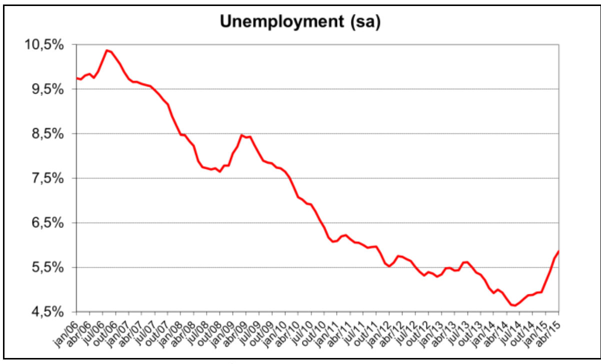
To be sure, I remain skeptical about this possibility, and, from the consensus forecasts for the years to come, I am far from being the only one on the skeptics' side[4].

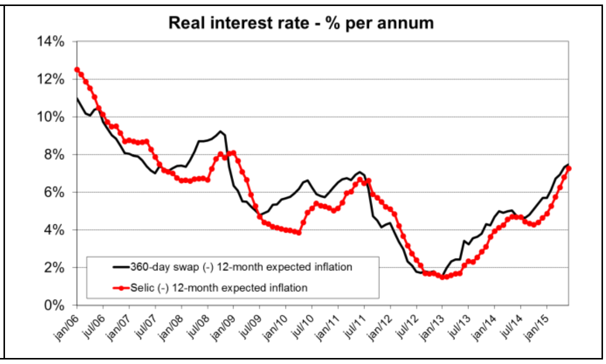
Under this light BCB's efforts to step up its language are easy to understand. Stating that it will be "vigilant", "determined" and "perseverant" is a strategy to try to convince economic agents that this time it will be for real.

Yet, words can only take you that far. In light of broken promises (remember "non-linear convergence"?) on the inflation side, people have shot first and asked questions later.

If BCB wants to change this, there can be no doubts this time that it is prepared, maybe even willing, to go through a period of growth below potential that would possibly reach a good portion of 2016 as well. Equivalently, it would probably have to push unemployment well above current levels, which, however higher than in recent years, remains low in a historical perspective.

[4] In a recent survey with 28 economists only 3 (10.7%) believed in BCB's promise to deliver inflation in 2016 at the target (one wonders whether they believe in Santa as well). The majority (10 out of 28) placed their bets in the first half of 2017, while 6 respondents put convergence in late 2017. The remainder expects even slower convergence (from 2018 to 2020), or no convergence at all (4 in 28).





Sources: IBGE and S&A (from BCB data)

The credibility of BCB's pledge depend, therefore, on its willingness to continue the hiking process even beyond what seems to be market consensus (the benchmark Selic rate reaching 14.25-14.50% per annum in the next 1-2 Copom meetings), but possibly going all the way to 15.50-16.00% per annum.

The fact that we are close to the consensus view reflects, at the end of the day, the perception that BCB cannot make a credible promise to converge faster.