BANCO CENTRAL DO BRASIL

Brasília, 20 de agosto de 2015.

Discurso do Diretor de Assuntos Internacionais e de Gestão de Riscos Corporativos, Tony Volpon, em reunião com investidores em Nova Iorque

Uncertainty and monetary policy

I would like to take the opportunity today to talk about how unusually high levels of uncertainty impact the conduct of monetary policy, with specific reference to the present challenges being faced by the Central Bank of Brazil (BCB).

In standard theoretical macroeconomic frameworks, uncertainty is usually represented by additive, uncorrelated and identically distributed shocks. The economy's structure is known by all agents, and expectation formation is disciplined by a model consistency (or "rational expectations") condition.

Wouldn't it be nice if real life was anywhere near this ideal! Nicer, but a lot less interesting. Let's look at some important deviations from these standard assumptions.

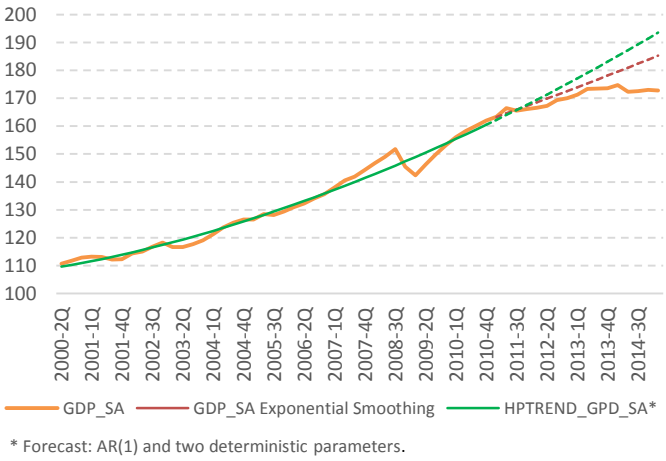
One important source of uncertainty is determining the current state of the economy. This problem manifests itself most obviously by the frequent revisions of economic data, especially GDP data that is sometimes revised for many years into the future.

This problem complicates the challenge in monetary policy of determining potential output as part of what is needed to determine the output gap.

Determining the output gap, never an easy task anywhere, has been particularly difficult in Brazil these last few years. After the rapid pace of growth seen in the 2003-2010 period, consensus estimates of potential in Brazil rose to the 4% region. Of course we now know actual growth performance has been nowhere near this level.

We can get an idea of how large and pervasive the recent growth disappointment has been by projecting the growth trend calculated with data up to 2010 and comparing to what growth actually ended up being:

Figure 1 - Quarterly GDP (2010=100), HP Filter and Forecasts (Dashed Line)
GDP at market prices (Index) - Seasonally adjusted data

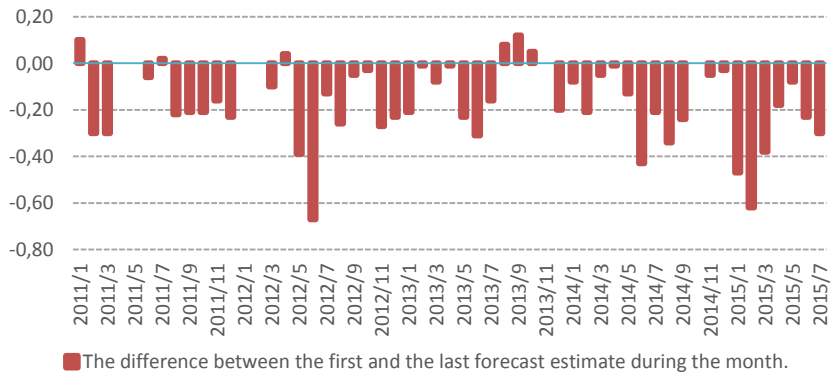


Source: IBGE.

Here we calculate expected growth trend using an autoregressive process as well as an exponential moving average method. The growth disappointment after 2010 is clear.

Another way to measure the severe growth disappointment during this period is to look at the sequential changes in growth expectations in the Focus survey. Here we look at the changes in growth expectations during a particular month for the end of that year:

Figure 2 - Market Readout (Focus)
Changes in Annual Forecasts for GDP Growth (pp)



Source: BCB.

As we can see growth expectations fell sequentially during the entire period as market analysts continuously played “catch up” with lower growth data.

Since estimating potential growth is usually performed by decomposing growth and using statistical filters, sequential overestimation of future growth will likely lead to overestimation of potential growth and so the output gap. Overestimating the size of the output gap will lead a central bank, all other things being equal, into erring on the side of easier monetary policy, likely

leading to higher inflation. As I argued recently[1], I believe this was one of the main reasons why inflation over the 2011-2014 period was consistently above target.

What about today? My intuition is that we are running the risk of making the opposite mistake.

While the commodity-led boom resulted in an upward estimation of potential that subsequently disappointed, the under performance of the last few years and the current cyclical environment have led many analysts to slash estimates of potential growth. Estimates of 1-2% are common, and last week a very well-known economist whom I greatly admire told me candidly he thought potential growth in Brazil today was 0%!

Can this be correct? To know where potential growth is likely to be today we need to understand the reasons for the severe slowdown since 2010.

I believe a variety of reasons are behind the post-2010 growth slowdown. The slowdown in the Chinese economy and lower terms of trade, for example, are likely one of the major reasons. But there is another major contributing factor for lower growth that I believe is being reversed.

Starting as a response to the global financial crisis and then continuing with greater intensity as growth disappointed after 2010, a series of policy measures were taken to boost aggregate demand that increased the allocation of resources through non-market mechanisms. There were also specific interventions in the pricing of inputs of production. Despite their success in boosting aggregate demand, I believe these policies led to an inefficient allocation of resources that contributed to an economy-wide drop in productivity.

Many of these policies have been or are in the process of being unwound, mostly because of their fiscal cost. But in addition to improving the fiscal situation, I believe that these changes, leading to the pricing of inputs to their marginal cost and the allocation of investments to their marginal productivity, will increase total factor productivity. If I am right, the implication is that we will see positive innovations in estimates of potential growth over the next few years as efficiency increases, also leading to better inflationary performance. I expect that higher total factor productivity and a stronger contribution of net exports will be the first factors pointing to economic recovery.

Another important source of uncertainty in the conduct of monetary policy is the estimate of how specific variables will condition inflation. Technically this is represented by parameter uncertainty in reduced form inflation forecasting models.

If we lived in the idealized, ergodic stationary world of most models, repeated sampling would give us unbiased and consistent estimates of these parameters,

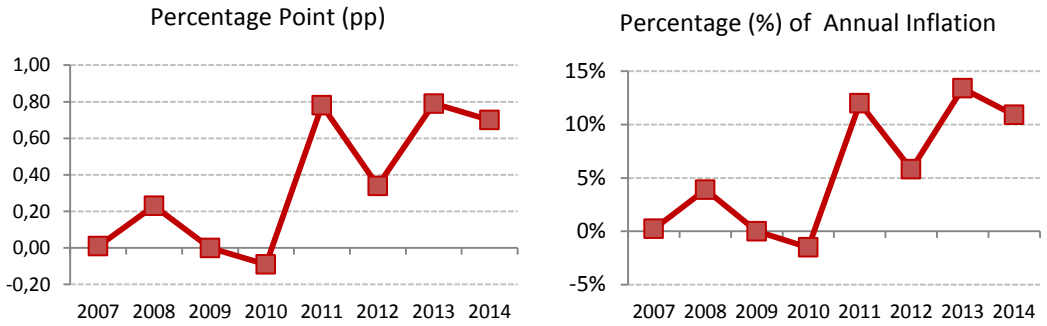
[1] See “Brazil´s Monetary Policy Challenge”, London June 17, 2015, available on the BCB website.

even if we break away from the most simple assumptions and have to deal with heteroscedasticity and endogeneity through proper transformations and the use of efficient instruments[2].

Unfortunately there is no real way to deal with parameter instability in reduced form models due to changes in policy regime. As I have argued recently[3], this problem is relevant now in Brazil when thinking about what will be the level of inflation inertia going forward.

Inertia certainly isn't a constant. We can see this below by looking at the decomposition of inflation presented yearly in the BCB´s Inflation Report that measures the size of inertia:

Figure 3 – Inflation Inertia



Source: BCB.

What I would like to point out is that the increase in inertia coincides in large part with the low growth period we discussed above. Is this a coincidence? I believe it isn't. I believe that many of the same factors that led to lower growth during these last few years also led to higher inflation inertia, especially policies that led to a temporary break of Okun´s law in the Brazilian economy. The changes in the policy regime discussed above, as well as the vigilant and determined monetary policy response of the BCB, will lead to lower inflation inertia once the intensity of the present relative price shocks fade and economic agents rationally adopt forward looking pricing behavior in an environment of well anchored expectations.

There are other sources of uncertainty impacting monetary policy, and I would be remiss in not mentioning the non-economic factors that are impacting the outlook presently and increase the variance of any growth forecast in ways that are hard to measure.

So where does this leave us in terms of monetary policy?

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[2] Efficient instrumentalization of hybrid New Keynesian Phillip Curves is an extremely difficult task, and if not properly handled can lead to serious misspecification problems and large out of sample forecast errors. I believe this issue contributes to some of the overestimation of inertia in the case of Brazil. For an interesting discussion of this issue see Fuhrer and Olivei (2004).
[3] Cf. Volpon (2015).

In his now classical article published in 1967, William Brainard[4] argued that uncertainty should lead policy makers to attenuate their policy response. This intuition is behind the common prescription that central bankers should smooth out changes in interest rates over time in order to gather information about the economy.

But "go slowly" is not necessarily the correct advice in all situations. Thomas Sargent[5] has argued that if one abandons the rational expectations assumption then policy makers should adopt a “robust” decision criterion that takes into account all possible sources of uncertainty and how they will impact outcomes. In this more realistic setting, policy makers must plan for the worst, which might imply acting promptly, and not slowly, as a precaution against highly undesirable states of the world.

An interesting application of this principle is given in a recent paper by Bank of Canada Governor Stephen Poloz[6]. He argues that in making decisions policy makers must consider the "starting point" of the variables they are trying to target. In the case of Canada, since inflation was below target, and despite the possibly symmetric risk profile of the inflation forecast (that is, a symmetric balance of risk), realization of downside shocks to inflation should matter much more – that is, have a higher weight in the loss function - than upside surprises which will help inflation reach its target.

Clearly Brazil today is the opposite of Canada in this respect. Unacceptably high inflation is Brazil's starting point.

Thus, in the case of Brazil, a robust policy accounting for a multitude of uncertainties must penalize more heavily positive, persistent and significant deviations of inflation from its forecast path towards target.

Only when current inflation levels have fallen sufficiently, when the "starting point" of inflation is lower, should the BCB treat negative and positive inflation shocks symmetrically.

Even if the BCB’s own forecasts point to inflation below target at its chosen conversion horizon with inflation expectations well anchored, it should only entertain policy accommodation when current inflation is significantly lower than present levels. Therefore, maintaining the level of the policy rate at its present level for a sufficiently long period of time is a necessary condition for the BCB to fulfill its commitment to bring inflation to target by the end of 2016.

Thank you for your time.

[4] See Brainard, (1967).
[5] See Sargent, (1999).
[6] See Poloz, (2014).

References

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