

MONETARY POLICY MONITOR

- **TRENDS IN MONETARY POLICY**

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Keynes as the "Father" of Inflation Targeting

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José Júlio Senna

■ Trends in Monetary Policy

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Introduction

■ It is certainly too soon to talk about regime change regarding the way monetary policy is generally conducted. Yet, in recent years, possibly influenced by the resilience of the Great Recession, a number of economists have begun to challenge the current orthodoxy in this area.

As is widely known, since 1990, a large number of countries, some formally, others without a formal announcement, have adopted an inflation targeting regime, which involves setting an explicit goal for inflation, which then becomes the top priority for monetary policy. Of late, though, some professional economists and, in particular, one acting central banker have criticized this policy framework and suggested that there are better alternatives. Rather than targeting an inflation rate, so goes the idea, the central bank should pursue an announced nominal GDP path. In principle, such a path would combine the potential growth rate of real GDP and the desired long-term inflation rate. If the economy operates with a high level of idle resources, this strategy would imply adopting sufficient monetary stimuli to push the nominal GDP towards the proposed path, within a reasonable non-specified time span. If the lower bound for the nominal interest rate has been reached, the central bank should expand money supply by printing money.

This is a system that has never been tested. And if it is true that its adoption may not be imminent, as remarked above, it is also true that the idea will be widely debated in the foreseeable future. In this respect, it is worth noting that a couple of measures recently undertaken by the Fed can be viewed as perfectly compatible with the spirit of the proposal. The motivation behind the option for those measures has to do with the slow pace of recovery after economic activity bottomed in mid-2009. And the basic idea is to somehow increase the weight given to unemployment in the central

bank's reaction function. We have, then, more than one reason to discuss the subject in this article. And this is what we do next.

Numerical Thresholds

As is widely known, the system in place in the US is not inflation targeting, but the so-called dual regime, according to which the Fed is required to conduct monetary policy so as to obtain the maximum possible employment level and price stability. These are goals established by the US Congress and, in order to have any practical meaning, they need some sort of an interpretation by the policy makers. In any event, the fact of the matter is that, at least in recent times, many people (market analysts, professional economists, politicians, members of the government, etc.) started to view the Fed's policy as tilted towards one of the formal objectives (price stability), in detriment of employment. This view may have gained some strength after January 2012, when the FOMC made explicit (for the first time) what their idea of price stability was. In the words of the press release issued at the end of the meeting held on January 25, "the Committee judges that inflation at the rate of 2 percent [...] is most consistent over the long run with the Federal Reserve's statutory mandate", a statement which was misinterpreted by many as indicative of the adoption of the inflation targeting regime by the Fed. At the occasion, the FOMC opted for not specifying a fixed goal for employment (they gave only a range for the unemployment rate, between 5.2% and 6.0%), based on the reasoning that the maximum level of employment is largely determined by nonmonetary factors, and change over time.

If one looks at the projections of inflation made by FOMC members at some of their formal meetings, from the recent crisis onward, one notices that they rarely go above the 2.0% level. This is probably reflection of the belief of the members of the Committee that the deleveraging process, still ongoing, and the large resource gap under which the American economy has been operating in recent years tend to restrain substantial inflationary pressures. But one cannot rule out the hypothesis that estimates made by the policy makers themselves also reflect their expectations that if inflation rates were to leave the comfort zone, the Committee would take the

necessary measures to correct the unbalance. When the subject is unemployment, however, there seems to be no reluctance to project numbers well above what can normally be viewed as equilibrium rates.

Moreover, in more than one occasion, Ben Bernanke made clear that he had no sympathy for raising the “target” for the inflation rate, even on a temporary basis, as had been suggested by a number of economists, adding that there would be no support for such a movement among his colleagues at the FOMC.

However, one can conceive of something hopefully capable of being helpful in speeding up the economic recovery (the major concern in recent times) and which does not involve adopting a higher target for inflation. This has to do with admitting the possibility that, for a while, the rate of price growth may reach levels higher than the famous 2.0%. This is equivalent to saying that the just-mentioned “target” should not be viewed as a ceiling, which is clearly different from formally adopting a higher target.

Within the FOMC, voices in this direction started to appear in the second half of 2011. In fact, in a speech made in September of that year, Charles Evans, president of the Federal Reserve Bank of Chicago, stated that he did not think “a temporary period of inflation above 2.0% [was] something to regard with horror”, adding that he did not see “our 2.0% goal as a cap on inflation”. (Evans 2011, p. 5).

This line of reasoning was supported by vice chairman Janet Yellen, who would later put it this way: “reducing the deviation of one variable from its objective must at times involve allowing the other variable to move away from its objective. In particular, reducing inflation may sometimes require a monetary tightening that will lead to a temporary rise in unemployment. And a policy that reduces unemployment may, at times, result in inflation that could temporarily rise above its target”. (Yellen 2012, pp. 13-14). The message was clear: the Committee’s long term inflation goal (2.0%) should not be viewed as a ceiling for inflation.

Evans, Yellen and others (Kocherlakota, for example, from the Minneapolis Fed, who had also taken part in the debate) maintained this discussion with one specific objective in mind: changing the policy and the essence of the Fed’s communications

with the public, in particular as regards the directives given as to the future of the policy rate.

The zero lower bound (that is, a band between zero and 25 basis point) was reached in mid-December 2008. In announcing what would end up being the latest change in the policy rate, the Fed decided to indicate that future movements in the fed funds rate would only happen in a somewhat distant point in time. The idea was that, by signaling that it would take a long time for the policy rate to be raised again, the central bank would encourage consumers to spend and business to invest.

Forward guidance of this type is part of a central bank's toolkit, being particularly attractive when the zero bound is reached, though it had already been used under different circumstances. In fact, in the US, Alan Greenspan resorted to such an instrument, in August 2003, when the policy rate had been pushed down to 1.0%. At that time, the signaling took the following form: "the Committee believes that policy accommodation can be maintained for a considerable period". In January 2004, the wording changed into "with inflation quite low and resource use slack, the Committee believes that it can be patient in removing its policy accommodation".

More recently, when the strategy was resumed, the wording was: "the Committee anticipates that weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time" (press release of the FOMC meeting held on December 16, 2008). On March 18 of the following year, the final part of the sentence changed into "for an extended period". In this second phase, the style was basically the same adopted previously, during the Greenspan era.

With the passage of time, however, the Fed decided to be more specific as regards what the policy makers meant by an extended period. In August 2011, the forward guidance incorporated a calendar date. The wording became: "economic conditions – including low rates of resource utilization and a subdued outlook for inflation over the medium run – are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013". This was later altered to "at least through late 2014" (January 2012) and to "at least through mid-2015" (September 2012).

Evans and Yellen were uncomfortable with this approach because they felt that the message was not sufficiently clear. In Yellen's words, "the Committee might

eliminate the calendar date entirely and replace it with guidance on the economic conditions that would need to prevail before liftoff of the federal funds rate might be judged appropriate”. She added that this would “enable the public to immediately adjust its expectations concerning the timing of liftoff in response to new information affecting the economic outlook. This market response would serve as a kind of automatic stabilizer for the economy: Information suggesting a weaker outlook would automatically induce market participants to push out the anticipated date of tightening and vice versa”. (Yellen 2012, p. 22). Yellen was endorsing a proposal previously made by Evans.

In September 2011, Charles Evans, president of the Federal Reserve Bank of Chicago, suggested the specification of numerical thresholds to describe the conditions that would warrant raising rates. The suggestion became known as the 7/3 proposal. In the proponent’s own words, “one way to provide more accommodation [when the zero bound had already been reached] would be to make a simple conditional statement of policy accommodation relative to our dual mandate responsibilities. [...] This conditionality could be conveyed by stating that we would hold the federal funds rate at extraordinarily low levels until the unemployment rate falls substantially, say from its current level of 9.1% to 7.5% or even 7.0%, as long as medium-term inflation stayed below 3.0%”. (Evans 2011, p. 10). One year later, Narayana Kocherlakota, president of the Minneapolis Fed, made a similar proposal, with different thresholds, namely 2 ¼ percent for inflation and 5.5 percent for unemployment. (Kocherlakota 2012, p. 4).

In November 2012, Evans modified his own proposal. “I am ready to say that 6.5% looks like a better unemployment marker than the 7.0% rate I had called for earlier”. As to inflation, he realized that “the 3.0% threshold makes many people anxious”, this being the reason he modified the proposal to include a “modest number like 2.5%”, the reference being the total PCE index. (Evans 2012, p. 8).

It seems, then, that, the FOMC was maturing the idea of allowing inflation to run at rates that would make members of the Committee uncomfortable in normal times. An attitude in this direction would be equivalent to giving more weight to the unemployment variable than had been the case until then.

It seems fair to say that, in the academic world, the most distinguished opponent of the language (or policy) originally adopted by the Fed was Michael Woodford. His criticism became widely noticed as a result of the paper he presented at the Jackson Hole Symposium, in late August 2012. At that occasion, the argument was put forward as explained below.

In essence, changes in the policy rate affect the economy through the impact they might have on the rates expected to prevail in the future. In other words, it is the future path of the policy rate that really matters. Monetary policy becomes more efficient if the authorities manage to generate expectations in line with the policy-rate path that is judged to be compatible with achieving the established objective.

Woodford emphasizes that market participants need to understand the authorities' reaction function. In his words, "information about policy intentions is likely to affect the expectations of market participants more than information about the central bank's view of the economic outlook, because the way in which the bank intends to conduct policy is a matter about which the bank obviously knows more than do outsiders". (Woodford 2012, p. 33).

Given the fact that it is the anticipated path of the policy rate that really matters for the economic decisions of consumers and firms, and as long as the authorities are confident that they are capable of effectively influencing the expectations regarding the mentioned path, there seems to be no reason for not trying to exert that influence by means of the of the so-called forward guidance mechanism. The point stressed by Woodford is that the ideal type of signaling should involve a sort of communication in which the policy makers state, as clearly as possible, what they intend to do, rather than giving the impression that they are simply engaged into forecast exercises. After all, market participants can always rely more on their own estimates than on the ones produced by the central bank.

If we examine carefully the language adopted by the Fed until the mid of last year, we cannot avoid the conclusion that the signaling lacked the necessary precision. In fact, what is really conveyed when the central bank says that the economic conditions are likely to warrant exceptionally low levels of the policy rate until a certain date? Should the statement be interpreted as a commitment, or as a simple projection? It is

quite hard to tell. What if the conditions change, and the economy's recovery somehow speeds up? Will the policy rate be raised, prior to the specified date?

Woodford's paper rapidly became required reading for specialists in the field, particularly because it seems to have influenced the Fed's policy from that point onward. In fact, the first FOMC meeting after the Jackson Hole seminar was held on September 13 (date of the end-of-meeting statement). At that opportunity, the Committee decided to create a new open-ended program of additional purchases of agency mortgage-backed securities and opted for an important change in language. First, the new program is to be maintained until the conditions in the labor market show substantial improvement. Second, "the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the economic recovery strengthens". For the first time, future changes in the course of monetary policy were being tied to economic outcomes (though vaguely defined), leaving behind the previous policy of announcing fixed amounts of purchases of certain securities over predetermined time spans.

On December 12, the change was more radical. The idea of thresholds originally suggested by Charles Evans (adjusted for his own new numbers) was formally implemented. In the end-of-meeting statement, one reads: "the Committee [...] anticipates that this exceptionally low range for the federal funds rate [between zero and ¼ percent] will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and the longer-term inflation expectations continue to be well anchored".

The NGDP Targeting Proposal

The criterion of thresholds was favorably praised by Michael Woodford prior to its implementation. "Adoption of such a commitment by the FOMC would be an important improvement upon current communication", he said at the Jackson Hole Symposium. (Woodford 2012, p. 43). But Woodford's real preference was for

something more drastic, involving a regime change, in which case there would be a commitment on the part of the Fed to pursue a nominal GDP target path.

In the central banking world, a similar way of thinking was recently expressed by Mark Carney, presently governor of the Central Bank of Canada and the governor-designate of the Bank of England. As is widely known, these two countries are early adopters of the inflation targeting regime. According to his view, successful practitioners of this regime may lead market participants to believe that inflation would not be allowed to remain above target, and those beliefs may reduce the effectiveness of monetary stimuli, at the cost of delaying economic recovery. Numerical thresholds somehow tie the hands of the central bank, making policy more effective. But Carney claims that this idea exhausts the options available within the current framework. In his opinion, “adopting a nominal GDP-level target could in many respects be more powerful than employing thresholds under flexible inflation targeting”. (Carney 2012, p. 8).

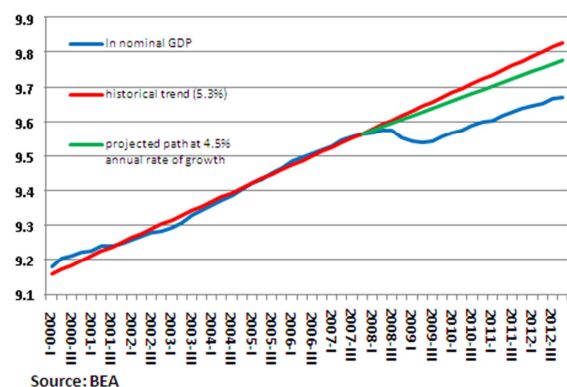
Before getting into some detail as to how a nominal GDP targeting strategy would work, let us add that in October 2011 the idea had been publicly defended by Christina Romer, who headed the Council of Economic Advisers during the first 20 months of the Obama administration. In an article published by The New York Times, under the title “Dear Ben: It’s Time for Your Volcker Moment”, Romer noticed that, as Fed chairman, Paul Volcker had “dramatically changed how monetary policy was conducted”. Bernanke should do something similar, that is, he should “stage a quiet revolution of his own”. (Romer 2011).

In the late 1970s, the strategy adopted by the Fed was not working, and the main problem of that time (inflation) remained without a solution. Today, the argument continues, inflation is low, but “unemployment is stuck at a painfully high level”. As in 1979, “the methods the Fed has used so far are not solving the problem”. (Romer 2011). We need, then, a new policy regime.

But how would the proposal work? The potential growth rate of the American economy is generally considered to be around 2.5% per annum. And since the Fed understands that the famous 2.0% is the long-term desired rate of inflation, the target for nominal GDP growth could be reasonably set at 4.5% per year. In order to define

the path we need a starting point, capable of being viewed as a “normal” year. In the graph below, we took 2007 as a reference year. The trend is built by extrapolating forward the nominal GDP observed in that year, at a rate of 4.5% per annum. The same graph shows the observed path of NGDP until 2012 as well as the extrapolation of the historical tendency (since 1990) into the future. As one can see, the American economy operates nowadays at a level which is 10.0% below the trend, as defined above. If the comparison is made with the historical NGDP trend (growth rate estimated around 5.3%), the divergence goes up to 15.0%.

Graphic 1 → US Nominal GDP Growth



Adopting the proposal would mean that the FOMC members would be committed to eliminating the gap. Since the Fed does not have enough control of the economy’s behavior, it would be advisable not to specify in advance the time span over which the gap will be closed.

In Romer’s mind, adopting the mentioned target would be equivalent to the decision taken by Volcker back in 1979, when he announced that the Fed would be targeting the rate of growth of the money supply, defined in a particular way. Supposedly, the main result would also be similar, that is, a considerable improvement in confidence. To the extent that this happened, consumers and firms would increase their spending. The economy would grow faster and the inflation rate might reach higher levels. In this case, a higher inflation rate would be considered helpful, and not a source of concern.

Announcement of the change in the monetary regime would be helpful per se. At least, so goes the argument. But it would surely not be enough to lead the economy to the desired track. This means that the announcement would have to be followed by further monetary actions. In reality, the Fed would need to be prepared to provide additional monetary stimuli, without specifying any limit for that. The so-called quantitative easing would enter into another phase. Still according to the proposal, there would be no reason to worry, since there would be a sort of an exit strategy embodied into the whole program. More specifically, the additional purchases of securities would be interrupted (and the policy rate would be taken to its neutral level) when the target were reached.

A final point needs to be made. How would the central bank evaluate the need for additional monetary actions? The idea here is simple and was already discussed in an old paper on the subject, written by Robert Hall and Gregory Mankiw. As these authors said in the early 1990s, the problem of lags in monetary policy is particularly relevant if a central bank adopts NGDP targeting. In their own words, it takes several months for monetary policy actions to affect the economy, “but the consensus forecast that far in the future is quite responsive to current monetary policy. Within a few days of a change in monetary policy, the consensus forecast changes to reflect expert opinions about the effects on all macro variables, including nominal income”. (Hall and Mankiw 1994, p. 78). The solution, then, is to work with forecasts, an idea which would later become a crucial aspect of the modern inflation targeting regime. In fact, in this case, the central banks usually guide their actions by the behavior of the inflationary expectations. As the Swedish economist Lars Svensson once said, “inflation targeting implies inflation forecast targeting: the central bank’s inflation forecast becomes an intermediate target”. (Svensson 1996, p. 2).

Obstacles to Implementation

It is difficult to predict whether the nominal GDP targeting proposal will ever be adopted. The fact is that the idea has been around for more than two decades and so far no one has effectively moved towards its implementation. Would the reason be the

fact that the target in this case is harder to be understood by the public than in the case of inflation targeting? Or would it be because conceptually it is generally considered not to be a good strategy?

It may be exact to say that the chances of adopting NGDP targeting are greater now than in the past because the reality is different. More specifically, central banks around the world have made use of a very large set of instruments (conventional and non-conventional ones) with the objective of promoting a rapid economic recovery. Generally speaking, the results have been quite positive, but the truth of the matter is that, so far, a large number of developed economies have not fully recovered from the recent crisis. In addition, the monetary policy strategy that prevailed prior to the crisis has been questioned in several circles. To some extent, it is no surprise that we find people suggesting a regime change, that is, something a bit more radical than what has been tried so far, with the objective of obtaining a more substantial improvement in confidence.

From the middle of this year onward, the Bank of England will be run by someone very sympathetic to the NGDP targeting proposal. Whether Mark Carney's idea will be accepted or not is hard to tell. It very much depends on the Chancellor of the Exchequer. Although a movement in that direction is not presently expected, it is worth noting that surprises happen. In the 1990s, for example, the incumbent chancellor took two surprising measures. Norman Lamont, first, and Gordon Brown, second. Lamont established a target range for the inflation rate (1%-4%) one month after England abandoned her fixed exchange-rate policy. And, five years later, Brown set the Bank of England free to manage the country's interest rate policy.

In the United States, those who defend the new proposal applaud the numerical thresholds policy, already in place. It is possible, then, to look at this latest movement as a preliminary step towards the adoption of the NGDP suggestion. But things are more complicated than that. In the US, the monetary policy's objectives are determined by Congress. And the Fed does not seem to be in a comfortable position to attempt a more radical change. It must be recalled that the much simpler idea of inflation targeting never turned into reality, in spite of the fact that it had a much

larger support basis and benefitted from the experience of a quite substantial number of countries.

Besides this, it is not so clear that establishing a target path for nominal GDP is really a good idea. According to the proposal, any combination of inflation and real GDP growth is satisfactory, provided that the final result represents a movement towards closing the gap. If one establishes 4.5% rate of growth per annum for nominal GDP as the desired path, for example, a combination of 4.0% inflation rate and 1.5% real growth would supposedly do it, since this would contribute to diminish the distance to the stipulated path. But the question is: how long would such a scenario prevail? No one can really tell. Inflationary expectations, however, might be hurt, and the price system might lose an important anchor, a reasoning which, to begin with, rules out a large number of countries as potential candidates for the adoption of the NGDP targeting proposal. Economies with a long tradition of high inflation and where inflationary expectations are not well anchored should not even think about that possibility.

Another consideration has to do with the emphasis on economic growth. It took a couple of decades for academics, central bankers and economic analysts in general to understand and accept the fact that there are well-defined limits to what monetary policy can achieve. In the long run, central banks can only affect nominal variables, this being the reason why they should have their attention and efforts geared to the promotion of price stability. Tying their hands and forcing them to pursue economic growth seems quite dangerous, a movement which could put at risk a great deal of the progress so far obtained, particularly as regards the way monetary policy strategies should be conceived.

As is well known, monetary expansion and lower interest rates are demand-management instruments. Depending on the circumstances, aggregate demand may not fully respond to actions taken by policy makers. Marriner Eccles, a former chairman of the board of the Fed (1936-48), was the first to compare monetary policy to a string: while you can pull it to put an end to inflation, you cannot push it to take an economy out of a recession. According to Allan Meltzer, in a testimony before the House Committee on Banking and Currency, in 1935, Eccles' words were; "you

cannot push on a string”. Apparently, he had in mind a situation later to be known as liquidity trap. (Apud Meltzer 2003, p. 478).

It seems clear that monetary policy did not become totally ineffective, in recent years, as a radical interpretation of this reasoning would imply. In many countries, the economic situation would have gotten a lot worse were it not for the bold measures taken by government authorities, in general, but particularly by the central bankers. But the idea that central banks have been pushing on a string comes to mind when one recalls the enormous amount of monetary stimulus already given, in several countries, and the reluctance of consumers to spend, of banks to lend and of firms to invest. The circumstances, characterized by a long and costly process of deleveraging, made monetary policy much less powerful than in more normal times. Of course, things become even more complicated when a given economy faces severe supply-side bottlenecks, or sees her potential growth rate decline considerably. Monetary policy is unable to provide any sort of compensation for such factors.

As long as problems like these remain relevant, adopting the NGDP targeting proposal might be quite a risky strategy. A point may be reached, for example, in which an enormous amount of stimulus has already been given, with no adequate response on the part of the economy. In other words, forecasts for real GDP and for inflation might show rates of growth of nominal GDP below the established path. According to the new “rules of the game”, the central bank would be led to increase purchases of securities, bringing a great deal of discomfort to many people, probably within the central bank in question as well. Inflation expectations may suffer some damage, even in countries in which the monetary authorities have high credibility. In this case, nominal interest rates would incorporate these higher expectations, eliminating (partially or totally) whatever “gains” might have occurred in terms of the lowering of the real interest rates.

But even if inflationary expectations and inflation itself do not go up, and assuming economic growth does not accelerate, the distance to the target might increase, causing the central bank to lose whatever credibility it might have acquired, and perhaps forcing the discontinuation of the program.

In summary, it is not clear that nominal GDP targeting is really a good idea. Based on the reasoning here presented, we do not expect it to be adopted, at least in any reasonable scale. It may become the preferable strategy in one country or another, but it is not likely to get as widespread as the inflation targeting regime did.

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■ Issues and Episodes in Monetary Policy

KEYNES AS THE “FATHER” OF INFLATION TARGETING

■ In his early writings, the British economist John Keynes revealed a very critical view of the gold standard. Under the rules that prevailed prior to World War I, a country which experienced an inflow of international reserves should inflate the economy, that is, should allow the money supply to increase. Rigorously speaking, it should not only allow but stimulate monetary expansion, acting in such a way as to reinforce the original movement. Full adherence to the “rules” would mean that the balance sheet of the monetary authorities would show an increase both in the volume of international assets and in the volume of domestic securities, acquired by the authorities. In principle, this would make prices to go up, domestically. In consequence, the country would lose competitiveness. The opposite would occur elsewhere, as a result of a shrinking money supply in the rest of the world. After some time, and assuming no further shocks, equilibrium would tend to be reestablished.

Keynes based his criticism on two aspects of the problem. First, in his words, “this process might take months to work itself out.” Considering the case of a country facing an outflow of reserves, “the gold reserves might be dangerously depleted before the compensating forces had time to operate.” (Keynes 2000, p. 160). Second, “the movement of the rate of interest up or down sometimes had more effect in attracting foreign capital or encouraging investment abroad than in influencing home prices.” (Keynes 2000, p. 160). If the disequilibrium was purely seasonal, so the argument proceeded, this would work as an “unqualified advantage”, but if it was due to more permanent causes, the adjustment would be “imperfect”.

With the outbreak of the World War I, the countries which had adhered to the international gold standard were forced to leave the system. When the war came to an end, it was only natural to consider returning to the old regime. After all, the decades immediately before the war were periods of considerable economic prosperity. The US went back to that regime as early as 1919. In England, there was a fierce debate.

Loyal to his own early thoughts and writings, Keynes placed himself against such a return, adding that the gold standard was already a “barbarous relic”. (Keynes 2000, p. 172).

The decision to go back to gold was taken by Winston Churchill, then Chancellor of the Exchequer. Keynes was particularly concerned with the fact that from 1913 until mid-1923, in England, wholesale prices had gone up by around 60.0%, and nominal wages had probably risen by a similar percentage. “If Mr. Churchill had restored gold by fixing the parity lower than the pre-war figure”, at least part of the criticism would disappear. But by restoring the old parity, Churchill was “committing himself to force down money wages and all money values, without any idea how it was to be done. Why did he do such a silly thing?”, asked the economist. (Keynes 1963, p. 248).

Keynes attributed the disastrous performance of the British economy in the years which followed the return to gold, marked by extraordinarily high levels of unemployment, to the decision taken by Churchill in 1925. When that system was abandoned, in 1931, this was Keynes’ reaction, expressed a few days after the event: “There are few Englishmen who do not rejoice at the breaking of our golden fetters. We feel that we have at last a free hand to do what is sensible”. (Keynes 1963, p. 288).

As we see, Keynes had no sympathy at all for the gold standard. But he equally disliked what happened in several countries as a result of World War I. To finance their war efforts, the governments of the countries directly involved in the conflict resorted to money creation, of a fiat nature, in an unprecedented scale. Inflation accelerated, quite rapidly. In some countries, this process was somehow reversed, in a matter of a few years; in others, not. In any case, in England, about half of the real value of financial assets was consumed by inflation. In France and Italy, approximately 90% of the financial savings were eroded by the same phenomenon, while in Germany the stock of financial assets was totally wiped out.

Keynes stressed the fact that all those countries “experienced an expansion in the supply of money to spend relatively to the supply of things to purchase, that is to say inflation”. From 1920 onward, some countries regained control of their financial situation and, “not content with bringing the inflation to an end, have contracted their

supply of money and have experienced the fruits of deflation.” Both phenomena (“inflation and deflation alike”) had “inflicted great injuries.” (Keynes 2000, pp. 3-4). Based on this reasoning, Keynes started to defend a “deliberate State policy” geared to the promotion of the stability of the value of money. Only this would stimulate and preserve voluntary savings, allowing its channeling into productive investments. (Keynes 2000, p. 17).

Keynes suggested that the Treasury and the Bank of England “should adopt the stability of sterling prices as their primary objective”, abandoning the policy of stabilizing the exchange rate. In pursuing this objective, the actions of the policy makers should have a preventive character, with attention concentrated on the future behavior of prices. In Keynes’ words, “it would not be advisable to postpone action until it was called for by an actual movement of prices”. (Keynes 2000, p. 187). To promote confidence, an official index number should be compiled, and the authorities should “adopt this composite commodity as their standard of value in the sense that they employ all their resources to prevent a movement of its price by more than a certain percentage in either direction from the normal”. Please notice that, in this note, we do not make a distinction between stability of the price level and stability of the rate of inflation, at low levels.

Keynes argued that more research was necessary for one to “understand the right time and method for controlling credit-expansion by bank-rate or otherwise”. As to what should guide the authorities’ actions, he had the following suggestion: “actual price movements must of course provide the most important datum; but the state of employment, the volume of production, the effective demand for credit as felt by the banks, the rate of interest on investments of various types, the volume of new issues, the flow of cash into circulation, the statistics of foreign trade and the level of the exchanges must all be taken into account. The main point is that the objective of the authorities, pursued with such means as are at their command, should be the stability of prices”. (Keynes 2000, pp. 188-89).

At the time of the writings quoted in this article, Keynes was convinced that the adoption of fiduciary money was simply “inevitable”. (Keynes 2000, p. 204). Please notice that his defense of such a system was made in the early 1920s, that is to say,

more than 20 years prior to its universal adoption, apparently on a permanent basis. In his understanding, the currency should be “managed”.

In conclusion, let us now compare the reasoning formulated by Keynes with what Ben Bernanke and three co-authors said about the modern inflation targeting regime. Right in the beginning of their book, the authors explained why it would be wrong to think of the mentioned regime as a policy rule. The explanation was partly this: “[...], at a technical level, inflation targeting does not provide simple, mechanical operating instructions to the central bank. Rather, inflation targeting requires the central bank to use structural and judgmental models of the economy, in conjunction with whatever information it deems relevant, to pursue its price-stability objective. In other words, inflation targeting is very much a ‘look-at-everything’ strategy, albeit one with a focused goal”. (Bernanke et al., 1999, p. 22).

The policy recommendation that emerged from Keynes’ reasoning – look at everything but have your attention concentrated on the future behavior of prices -, so much time in advance of present-day discussions, allows us to think of the British economist as the father of the inflation targeting regime.

J.J.S

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■ Conversation With Affonso Celso Pastore

This conversation was held through an exchange of e-mails between J. J. Senna and A. C. Pastore in the first days of March 2013. Professor Pastore was governor of the Central Bank of Brazil between September 1983 and March 1985. He is currently the president of A. C. Pastore e Associados, a consulting firm based in São Paulo.

■ **The future of the interest rate policy is largely discussed by government officials outside the Central Bank. The COPOM seems not to be pursuing the center of the band. The behavior of inflationary expectations is rarely mentioned by the COPOM members. Do you believe that these and other similar observations justify the concern that the Brazilian Central Bank might be gradually abandoning the inflation targeting regime?**

I do not think Brazil will abandon the inflation targeting regime, but there is evidence that the commitment to the target is currently more flexible than in the past. A way to assess the Central Bank's stance is by its reaction curve, which is basically a form of the Taylor Rule. The Bank reacts to two variables: a) the deviations of projected inflation from the target; and b) the deviations of current GDP in relation to its potential (the GDP gap). For a strongly committed central bank to assure convergence of projected inflation to the target (over a given horizon), any time projected inflation reaches one percentage point above the target it will have to raise the basic interest rate by more than one percentage point, meaning raising the real interest rate. Empirical studies published as Working Papers by the Brazilian Central Bank show that until approximately 2007-2008, this conduct (known as the Taylor principle) was obeyed. From 2008 onward, however, this principle has been violated: the interest rate has never responded to the excess of expected inflation in relation to the target, and instead has clearly reacted to the shortfall of actual GDP in relation to its potential.

It's not necessary to consider opinions about the Bank's conduct; it's enough to observe the coefficients of its reaction curve. The intensity of the response of interest rates to a deviation of projected inflation with respect to the target has fallen, and the response has risen substantially to declines in the positive GDP gap (or increases in the negative gap). This is empirical evidence that the Brazilian Central Bank is now less concerned than before with inflation and more concerned with GDP cycles.

For a central bank to be considered properly concerned with inflation, it is not necessary for it to hew to a reaction curve with immutable parameters. This has happened in the United States according to several empirical studies. One was that by Clarida, Gali and Gertler, who show that the Federal Reserve's reaction to inflation was less intense under the leadership of Arthur Burns than under Volker and Greenspan, and it is no accident that the average inflation rates under Burns were higher than those under his two successors. This is an indication that when the commitment to the target weakens, inflation rises, and is clearly in line with the theory of central banking.

Therefore, while the Brazilian Central Bank has not abandoned the targeting regime, it has relaxed its reaction, and the resulting trend will be for persistently higher inflation.

■ **I suppose that you agree with the idea that the real rate of interest (the policy rate) has been pushed too far, in the downward direction. We all recognize that the so-called neutral level (or neutral range) has fallen considerably. But the Central Bank has probably acted too aggressively. Now that the real rate has been set below 2.0% there seems to be great reluctance to adjust it upwardly. In your opinion, is the weak behavior of economic activity a fair justification for maintaining such a policy?**

There can be no doubt that the neutral interest rate has been falling in Brazil. It's enough to look at a graph of the real interest rate (both as indicated by 360-day swaps and the SELIC rate deflated by inflation expected 12 months ahead) to verify a strong

downward trend. Despite this fact, until recently inflation never showed a tendency to grow. If the market interest rate (the real SELIC rate) had been falling faster than the neutral rate, inflation would have had to show a clear rising trend which until recently was declining. Only in the past couple of years have the symptoms of inflationary pressures appeared.

The neutral interest rate is that which balances aggregate supply and demand. In practice, that neutral rate leads to a nil output gap. The constancy of inflation along with the decline of the real interest rate is clear evidence of the continued fall of the neutral rate. But how fast has the neutral rate fallen? Is the entire fall of the neutral real interest rate permanent, or is it partly transitory, meaning a reversion, if only partial, is in store under different circumstances than today's?

To answer these questions it is necessary to examine the concept of the neutral interest rate in more detail. I first present a specification of the IS curve that was common before the 2008-2009 crisis. In this case, the GDP gap was expressed as a function of the real market interest rate in the following form:

$$y_t - y_t^p = a + br_t$$

where y_t is current GDP, y_t^p is potential GDP and r_t is the real market interest rate. The neutral rate is found by setting the GDP gap equal to zero (meaning supply exactly matches demand). This is given by $r^N = -a/b$. An econometric estimate of the IS curve leads to estimates of the two parameters, a and b , that allow extracting an estimate of the neutral rate. I now look to the alternative case, during the 2008-2009 crisis. In this period a form of contagion occurred, so that the strong increase of the (negative) global GDP gap led to an increase in Brazil's negative GDP gap. Indeed, it would be impossible to explain the speed and intensity of the Brazilian recession in that period without counting the contagion from the worldwide recession, which occurred through various transmission channels. In other words, in this period, Brazil's GDP gap depended on the global gap, and the IS curve assumed the form

$$y_t - y_t^p = a + br_t + c(Y_t - Y_t^p)$$

where $(Y_t - Y_t^p)$ is the global gap. If this gap (the world gap) had been zero, the neutral real interest rate would have been the same as in the previous example, but with $(Y_t - Y_t^p) < 0$, Brazil's neutral rate is given by $r^N = -a/b - (c/b)(Y_t - Y_t^p)$, which for $(Y_t - Y_t^p) < 0$ leads to a lower neutral rate than before. In reality, the greater the global output gap, the lower will be the neutral interest rate in Brazil. This simple example leads to two conclusions. First, during the worst phase of the crisis, the neutral interest rate in Brazil fell significantly. Second, it only can remain lower while the contagion from the global crisis continued to affect Brazil. If the global gap were to return to zero, this component determining the neutral rate would disappear. There are no doubts that during the worst part of the crisis, the neutral rate in Brazil fell sharply. But one must consider that this is not a permanent movement, but rather is at least partly transitory.

It's hard to estimate what has happened from that moment (the depth of the crisis) onward, but for sure the depressing effect from the rest of the world is not as strong now as it was in 2009. Various empirical studies have tried to estimate the neutral interest rate in Brazil. One of them was carried out by the IMF, in an econometric work covering several countries besides Brazil. Econometric techniques (such as Kalman filtering) can also be applied to estimate the parameters a and b of the IS curve, as well as what has been happening to the constant term of the reaction curve, which is an alternate way to extract information on the neutral rate's trend. All these studies have concluded that the neutral rate has declined, but also indicate the rate is higher than 2% a year, which is slightly above what is currently happening in Brazil.

But even if the imprecision of these estimates urges caution regarding what the "true" neutral interest rate is, there's another regularity that sheds some light on the subject. For nearly three years the expected inflation rate has stood at around 5.5%, and current inflation has been even higher than this for some time, bordering on 6% a year. This provides indirect evidence that the real market interest rate (and the real

SELIC rate) is below the neutral level. The reluctance to experiment (by trial and error) where it is can perhaps be explained by the nature of the Central Bank's reaction curve, which these days clearly gives less weight to deviations of inflation from the target than to deviations of actual GDP in relation to potential GDP.

■ **The introduction of substantial barriers to foreign capital inflows allowed the government to have some control of the behavior of the nominal exchange rate. To what extent do you think that the heavy hand on the exchange rate market is hurting the conduct of monetary policy?**

I first want to mention two pieces of empirical evidence. First, in the presence of price rigidity, there's a strong positive correlation between the nominal exchange rate and the real exchange rate. Second, the evidence about the PPP indicates that a shock in the real exchange rate dissipates very slowly. Although in the long run the real exchange rate only depends on real variables, the conclusion that can be drawn from the above two indications is that it is not only possible to alter the real exchange rate by acting on the nominal rate, this alteration also is highly persistent, and for this reason its effects do not dissipate quickly. Governments that want to produce a weaker real exchange rate in general act by intervening in the foreign exchange market and introducing capital controls, both of which are instruments to guide the real exchange rate.

But this comes with a consequence. The weaker exchange rate raises domestic prices of international goods, and heightens inflationary pressures. It's possible to estimate response curves of the consumer price index (IPCA) to an impulse from the exchange rate, and conservative estimates of this pass-through show that in eight months about 6% of the depreciation is incorporated in the IPCA. In May 2012 there was a shift in the exchange rate regime. In the 12 months ending in April 2012, the exchange rate fluctuated (with a good deal of amplitude) around an average of R\$1.80/US\$. In May there was a depreciation of around 10%, putting the Real at about R\$ 2.00/US\$, where it remained for the rest of the year (again with some fluctuations). The estimate

of the pass-through shows that in December the IPCA would have been 0.6 percentage point lower without the depreciation. In other words, without that depreciation, the IPCA would have been 5.2% instead of the observed figure of 5.8%.

There are indications the government would like to continue the depreciation, with the aim of favoring industry. But even if it did so slowly, this would certainly increase the IPCA more, contributing to accentuate the unanchoring of expectations. How does this work?

In an inflation targeting regime, the anchor is expectations, which are affected by the target. If in face of a deviation of expectations in relation to the target, the Central Bank reacts through any of the instruments at its disposal (SELIC rate, macroprudential measure), leading expectations (and later inflation itself) to the target, it will keep its creditability high and enhance its capacity to influence expectations. In other words, besides acting through the aggregate demand channel, it also acts through the expectations channel, increasing the efficacy of monetary policy. There is clear empirical evidence that in recent years the expected inflation rate has no longer been influenced by the official central target of 4.5%, but rather by a higher one, currently about 5.5%. So, if a weaker exchange rate raises inflation and the Central Bank fails to react, a new unanchoring will happen, reducing its ability to act through the expectations channel and undermining the efficacy of monetary policy.

This is one of the reasons why the adequate functioning of the targeting regime requires a high fluctuation freedom. Without going into heated and fruitless discussions, it is important to recognize that Brazil has never had a purely floating regime. There have always been heavy interventions, either in the spot market or the future market, as well as frequent actions to control capital inflows. But in the past year there has been a marked shift away from the “dirty float” regime toward what can only be described as a pegged regime with target bands. The country has passed from a situation of forceful interventions to a regime where targets for the exchange rate are increasingly interfering in the efficacy of monetary policy.

■ Finally, you have been following very closely the recent changes in the way monetary policy is conducted in the United States, especially as regards the use of forward guidance mechanisms. As you know, in the academic as well as in the central banking world, there are people who believe that a new monetary policy regime is in order. As a result of discussions along this line, some have proposed the so-called nominal GDP targeting regime. Do you see any merit in such a system? Would it be applicable to a country like Brazil?

The United States is facing a situation never experienced by Brazil. A succession of errors led to a crisis that triggered a “liquidity trap”, in which the short-term nominal interest rate has reached zero and cannot fall more. In a case like this, the theory calls for using fiscal policy. But this is not possible due to the excessive public debt. With fiscal measures off the table, the American government has entered an experiment of acting on the long-term interest rate curve, which should stimulate economic activity through various channels. Without this action, the country would be facing deflation and a severe recession. In a scenario like this, it’s natural for the main worry to be with GDP, employment and economic activity, particularly because the risk of inflation is nil (the risk is of deflation). Perhaps in this case a regime with nominal GDP targets will work, but this does not apply to Brazil, especially in light of its still-fresh memory of hyperinflation in the late 1980s and early 90s.

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