The New Macroeconomic Matrix and Monetary Policy Brazil 2011-2014*, **

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New York, February 2017

* An essay in honor of Edmar Bacha's 75th anniversary.
**Preliminary draft, for comments only.

1. Dedication: For Edmar Bacha

Why this note and what has he contributed

2. Introduction

Once praiseworthy, state-of-the-art in the use of inflation targeting (IT), Brazil's central bank failed to deliver inflation within 100bp of the midpoint of its target for seven consecutive years—from 2010-2016.[i] During the period of the New Macroeconomic Matrix (NEM) introduced by President Dilma Rousseff in mid-2011 and pursued until early into her second term in 2015, monetary policy was discredited, relegated to a supporting role for political objectives. The reintroduction of more sensible and coherent macro policies starting in May 2016, following the start of impeachment proceedings against Rousseff and, principally, after a new administration assumed the helm of the central bank on June 2016, brought back expectations that monetary policy will be again effective. It already is. But the structural, mainly fiscal, limitations for effectiveness are strong and will take long to overcome.

This note outlines the evolution of monetary policy during the NEM. Section 2 summarizes the debates that led to the adoption of the NEM; discusses the transition to a "modified" IT regime in the aftermath of the Global Financial Crisis (GFC); and examines the key innovations introduced by the NEM central bank. Although the focus is on monetary, the objective is to emphasize the role of fiscal policy. Section 3 discusses the monetary-fiscal links. Section 4 concludes with some observations for the future.

3. The New Macroeconomic Matrix (NEM)

The main economic indicators for the period 1995-2016 are shown in Annex Table 1. The first two administrations of the PT (Workers' Party) under President Lula stand out: GDP growth at 4.1% average annual rate; real payroll growth at 4.8% with a strong expansion in formal wage-based employment; a near balance in the external current account with rapid growth in imports made possible by an even faster expansion in exports during the China-led commodity boom; a buildup in foreign reserves that buttressed external creditworthiness; prudent fiscal performance with primary surpluses averaging 3.1% of GDP, about the same as in the earlier two Cardoso administrations, but with a reduction in the nominal deficits given lower interest payments. The impact of the Global Financial Crisis (GFC) was short and mild. As late as in Q3/2008, the economy was booming, growing at the fastest quarterly rate on record. It slowed down in Q4/2008. But it was not until Q1/2009 that the crisis hit.

As late as Sep/2008, with concerns about an overheated domestic demand feeding into inflation, the central bank increased the policy rate to 13.75%, the highest rate in 2 years. It began to retreat only in Jan/2009, one year after the US Fed brought its rate to the zero lower bound (ZLB). The rate reached 8.75%, the trough of the rate cycle, in July 2009, once 12mo ahead inflation expectations were firmly below the midpoint of the year-ahead target. By that time, the Fed had in place a plethora of emergency liquidity assistance programs, had added quantitively easing (QE) to its arsenal, and had implemented a swap program with the central bank of Brazil, among others, to supply it with emergency dollar funding.

Brazilian markets were slow to gauge the magnitude of the global crisis. In the central bank's survey of market expectations, as late as yearend 2008, the median forecast for growth in the year ahead was 2.4%. This was 2.7pp lower than the growth rate registered in 2008, but about the average it had been during the Cardoso years. In the event, growth in 2009 clocked at -0.1% year-on-year (yoy).

The trough of the cycle was in Q1/2009, a contraction of -2.4% in the seasonally adjusted annualized rate (saar). By Q4/2009 the economy was expanding at 5.3%saar, and by Q1/2010 it grew at all-time peak rate of 9.2%saar. The downturn was short and the recovery remarkable.

What happened? The external environment helped: China's policy stimulus spilled over into Brazil, and the effect was large.[ii] The Fed's expansionary overdrive helped calm Brazilian capital markets. The domestic policy stimulus, meanwhile, was even more remarkable. Spillover from China peaked in Q1/2010. By then, Lula and his administration had put in place their own set of measures. For a country used to react to external crises with pro-cyclical, belt-tightening, measures to guard its foreign exchange reserves, the measures were nothing short of revolutionary. They brought forth a coordinated counter-cyclical response from fiscal, quasi-fiscal (the state-owned banks and corporations) and monetary policies that created 2.14 million formal jobs, increased average real incomes by close to 4%, and the minimum wage by 16.4%, all during 2010.[iii]

The response was disproportional. In retrospect, from a counter-cyclical perspective, excessive in all aspects. Maybe Lula and his policymakers did not know about the unprecedented scale of the China stimulus. Perhaps they underestimated the global reach of Fed action. But, then, the reason for the policies was not strictly countercyclical. It also had to do with winning the forthcoming 2010 Presidential election, and this demanded more. Twice incumbent, Lula was ineligible. He had to choose a successor who would consolidate his party's hold to power and who unmistakably was beholden to him. Hence, the bizarre choice of Dilma Rousseff. She had never campaigned for or held an elected position; was largely unknown to voters and a latecomer to the PT; was known to insiders for her technocratic, not political, skills. It was said at the time that Lula could have elected a "lamp post," and he did. The "counter-cyclical" offense paid off.

As such, at the time, locals argued, and believed, that the election-year overindulgences would not carry through to the new administration. It was a temporary blip, to some extent expected, not a

discontinuity in the "deeper" policy view and political strategy of the party in power. Lula and the PT, after all, won the election. And, albeit at first reluctant, Lula was now a pious convert to the practice of pragmatic policy supporting macroeconomic stability. He was a master power-broker, and had brought his party along.

What this reasoning missed, however, was that there had been something different in Lula's post-GFC response, something more than a combination of political opportunism and countercyclical farsightedness. Given the re-composition of the circle around him, his response to the crisis looked back to the PT's playbook of the years in the opposition, before the moderating shift that had led the PT to power in 2002.[iv] Among the faithful in the left, the GFC "proved" the failure of the minimal state, of the "Washington consensus," of the dogma that "markets know best." And this thinking would carry through to the new administration.

Dilma Rousseff, desenvolvimentismo and the NEM. When Dilma came to power in 2011 a cyclical "correction" was in course. It was clear to all, even the most ardent proponents of public spending, that the real growth in public expenditures could not be sustained at 15%yoy,[v] and she acted to correct some excesses. The central bank accelerated its re-tightening cycle that had started in June 2010, and would peak in July 2011. The new budget was more austere.

The new team, however, had a different personality and thought differently about macroeconomic policy.

As a policy-maker, Lula was self-taught; a pragmatic union leader who learned his economics from wage negotiations with multinational corporations and from close ties to the centrist labor movements in the US (AFL/CIO) and Germany (IG Metall). In office, he listened closely to his advisors and chose the course of action. His policy approach drifted as his political acumen dictated, and as his

advisers changed their tune. His actions were pragmatic not doctrinaire, aimed at the protection and enlargement of his political power.

Dilma, in contrast, was a trained economist who entertained academic ambitions and pursued graduate degrees. A woman of convictions, she is said to have relished the minutia of technical discussions, and even broad intellectual debates. In a discipline, such as economics, subject to fashions, dogmas and "…isms," hers was a peculiar brand, *desenvolvimentismo* ("developmentalism"), or more pejoratively, to critics, (mis)guided "Keynesianism in the Tropics."[vi]

For Dilma, and her team, the main challenge in 2011 was not the end of the commodity super-cycle. It was not the slowdown in productivity growth, or even the aftereffects of the GFC and the then looming crisis in Europe. The problem was that domestic demand was not growing fast enough to compensate the drop in external demand. And domestic demand, *real* not *nominal* demand, was something that, in their chartbooks, could be created through government policy, even in the short-run.[vii] In Q1/2011, domestic absorption grew 13.1%saar, and imports, 38.1%saar. This was not what they were looking at, however. Their concern was that job creation decelerated in Q1/2011, and that a slowdown in consumption was imminent. The focus, therefore, must be on measure to stimulate demand further. By mid-2011 the main ideas coalesced into the NEM.

There was no seminal document or comprehensive presentation; rather, what followed was a swarm of Presidential decrees, activism and control over the main levers of economic policy, including the central bank. It was not as simple as telling the bank what to do. The new economic team, headed by the President herself, developed a common diagnostic and, if not a consensual, at least a workable course of action encompassing the Ministry of Finance, The Ministry of Planning and Budget, The National Development Bank, the government-owned commercial banks, and the central bank. In this simple act of building, or demanding, a consensus within her team, Dilma differed markedly from her predecessor.

Lula feared and trusted the central bank. He assumed the Presidency in 2003 with an economy in disarray and under a cloud of adverse and outright antagonistic business expectations. His first days in office, punctuated by a currency crisis and preceded by a return to the IMF for assistance, revived the threat of rampart inflation and the fear that the first leftist government in Brazilian history would end in debacle. He owed his election in part to the centrist approach of his soon-to-be finance minister, Antonio Palocci. Palocci established his own credentials: an active support for the agreement with the IMF, and a close working relationship with the outgoing Cardoso team. He staffed his Ministry with personnel from the Cardoso administration, and from "liberal" think-tanks.

Palocci was instrumental in bringing Henrique Meirelles to the central bank, an odd choice since Meirelles had just won a mandate to the Lower House representing an opposition party. To underscore this position, the new Governor used his confirmation hearings to make clear that his administration would be of continuity with previous central bank practices—a clear salvo against the PT bulwarks who had condemned the previous management of monetary policy. To the applause of non-PT politicians, and of business interests, in due course, Meirelles stepped beyond his ties to Palocci and became a key advisor to Lula. He did so while contending with fierce opposition from within the PT-dominated Cabinet, and from close allies of the President, the more so when Guido Mantega, a card-carrying *desenvolvimentista*, ascended to the upper echelons of economic policy, replacing Palocci at Finance.

Meirelles' strategy was to isolate the central bank from the rest of the government; to hold strictly bilateral meetings with the President. The keyword was "operational independence" but, to all effects, it was autarchy except for contact at the very top of the axis: The Meirelles central bank preserved its autonomy. The gain in credibility helped in the implementation of policy, but there were costs. Monetary policy was too tight around 2006,[viii] and there were other, more fundamental, underlying problems. The fiscal-monetary policy mix was incoherent.

At a time when fiscal primary surpluses should have increased to help neutralize the destabilizing effects of a sudden rush of external income, prompted by an extraordinary gain in terms-of-trade, what Edmar Bacha appropriately termed the mana not from heaven but from commodities, and that transferred, in his estimates, near 10pp of GDP annually to Brazil in the period 2014-2011, the Lula administration chose, instead, to spend the external gain—and not, at least, in investment but mainly in consumption.[ix] Yes, there were improvements in living standards. Unfortunately, many of them proved to be temporary. The mistakes in macro policy brought down Brazil's capacity to grow in future years.

Towards the end of the Lula administration, productivity growth had ground to a halt threatened by an extraordinary jump in real wages and in the share of wages in output, by a serious loss in external competitiveness. The management of the exchange rate, and of exchange rate expectations, played an active role in monetary policy—more so than conventionally admitted in "flexible" IT regimes.

Starting in 2005, the Central Bank accumulated reserves, colossally: from $53.8bn ate end-2005 to $180.3bn at end 2007, and $288.6bn at end-2010. It did so, at first, not because of concerns about the level of the exchange rate but out of fears that the additional external stimulus would overheat the economy and credit markets. (The unanticipated appreciation of the BRL/USD rate was one of the reasons why monetary policy proved to be, in retrospect, too tight around 2006.) The accumulation was sterilized through open market operations collateralized with Treasury bonds. Eventually, this buildup of Treasury debt held by the central bank, and the corresponding outstanding public debt held under the so-called *operações compromissadas*, would emerge as a key challenge for monetary policy. So, would concerns about the cost of holding reserves, and about the level of the real exchange rate. But these were not concerns of the Meirelles central bank.

During the eight years of Lula/Meirelles, notwithstanding the buildup in reserves, the real exchange rate appreciated 95% (based on the average level in 2003), while the terms-of-trade gained

28%, and the wage/exchange rate ratio, 213%! It may be too much to say that a judicious course of fiscal and incomes policy would have sufficed to neutralize these effects. It may also be argued that some of the gains were payback to earlier periods of excessively low real wages. Nevertheless, there were long term costs to the policy mix that evolved under Lula. The markets liked the "orthodox" central bank and, at first, turned a blind eye to the fiscal abuses. The business class, coddled by years of protectionism and easy access to government favors—and, now we know, outright corruption—supported the expansionary policies of 2005-2008 and, wholeheartedly, the "countercyclical" policies of 2009-2010. No one seemed to be troubled by the inconsistencies in policy and, yet, the negative consequences were becoming ever more obvious. A more coordinated policy under Dilma could have been a welcomed turn.

Instead, the NEM was a disaster. Coordination led to a tighter embrace of the mistaken diagnostic. The common mantra was insufficient domestic demand. At a moment when potential GDP was falling, and probably close to 2-2.5%, central bank officials spoke privately of potential at 4.5-5%. That was the growth target. To achieved it, the NEM prescribed an expansion in public spending without an increase in taxes, thus, funded by larger fiscal deficits. The Treasury's gross domestic funding requirements increased to R$326.6bn at yearend 2012, from R$213.6bn a year earlier. They were so large that the administration worried about the negative market and political repercussions. They must have been convinced, nevertheless, that the deficits and associated spending would have a positive impact on the economy, eventually. For their worries, did not lead to a change in course. Instead, if the problem was in the numbers, they chose to change them. They used accounting gimmicks to manipulate how the numbers would appear in the budget. For example, the Treasury capitalized BNDES and Petrobras through special, off-the-market emissions of Treasury bonds not registered in the "net debt" concept, which was then current with the market. In accounting terms, the transaction was an investment of the Treasury, an increase in assets, below the line of the fiscal accounts. Simultaneously,

the administration required BNDES and Petrobras to pay larger dividends to the Treasury, generating a non-debt financed increase in funding for the deficit, above the line.

Through this and other tricks, and because the spending failed to spur growth, and thus led to a deceleration in the growth of revenues, the fiscal deficit reached 10.2% of GDP in 2015. Gross public debt increased from 51.8% of GDP in 2010, the year before Dilma took office, to 66.2% in 2015, her last year in office. In the Dilma years expenditure increased relentlessly. In 2015, the drive to spend more even as revenue collapsed, finally produced the most feared outcome, a large primary deficit (1.9% of GDP) with a surge in debt-financing.

A large part of the expansion in spending went through the public banks. In search of "national champions," the development bank (BNDES) increased its lending by XX-fold in the 2011-2014 period, after an already impressive expansion of XX% in 2008-2010 under the guise of the "counter-cyclical" measures. In parallel, the national housing bank (Caixa Econômica Federal-CEF) initiated an ambitious program of subsidized mortgage lending. Tax and credit concessions to targeted sectors were added to the mix of industrial policies. When all else failed, and inflation became a problem, price and exchange rate controls were tossed into the lethal NEM blend.

Part of the increase in the fiscal deficit was the added burden on the interest bill, as the central bank hiked rates in 2015 to avoid a wholesale outflow of moneys from financial markets. The interest bill on the public debt summed to 8.3% of GDP in 2015. The bank was attempting to reign-in wildly disparaging expectations. After Dilma's reelection, in November 2014, the exchange rate plunged. Business and consumer confidence plummeted. The BRL/USD rate lost 42% of its value in the year to March-2015, 50% in the year to July-2015, 63% in the year to August-2015. Moreover, without a credible monetary anchor, the weaker BRL fed quickly into higher inflation, which increased the implicit subsidies on controlled prices. In the end, they had to be let go. The added shock brought inflation to

10.7%yoy at the close of the year, notwithstanding a -3.9%yoy drop in real consumption, and a -13.9% drop in investment.

The set of policies, increasingly a hodge-podge of ad-hoc measures, failed to stimulate output. Driven by adverse expectations, new spending in business investment begun to contract in Q3/2014 and lost 21.5% of its real value in the six quarters to end-2015. Leading segments of the corporate sector turned to imports to defended their market shares. In part moved by China's policy of import penetration into Brazil, imports replaced domestic production of finished goods and increased at a faster clip that consumption. In the heyday of the NEM, from 2011 to 2014, the real volume (quantum) of imports increased at an average annual rate of 7.5%, whilst real retail sales, 6.5%. The irony is that this was happening as the administration expanded policies to protect "national content" and increase protectionism. That was an easy move; protectionism was at the core of the NEM ideology. However, given the fiscal largesse, it was not based on import tariffs. Rather, it was implemented through a colossal expansion of public investment in the state-owned oil company, Petrobras, and through changes in the rules and existing contracts for the private provision of electricity.

The momentum of imports turned negative only in Q3/2014 and then, of course, it tumbled rapidly in 2015 hit by the depreciation of the currency and the collapse in demand. Meanwhile, with the end of the commodity super-cycle, and given the erosion of export competitiveness in manufacturing, exports growth decelerated and fell in quantum terms. In the period 2011 to 2014, the average annual rate of export quantum was 2.8%yoy. As Dilma was being reelected at end-2014, the year sum of the trade account turned negative to -$6.6 billion dollars, a quick reversion from the $27.6bn surplus registered in her first year in office, in 2011.

Quite aside from the umbilical link to corruption that stretched back to the earlier Lula administrations and that led to the *Lava-Jato* investigations, the NEM introduced new distortions in the allocation of resources.[x] In an economy struggling with inefficiencies, the new ones were

overwhelming.[xi] Productivity growth stagnated and the efficiency gains measured from total factor productivity (TFP) turned negative.[xii] Bad policies, and renewed attempts to redouble their impact through the ever-larger use of fiscal resources, drained investors' confidence. The political outcome of a closely contested Presidential election, which Dilma won through false promises; the widening corruption and bribery scandals; her own political incompetency; and the after-effects of the deadly policy mix; led, in 2015, to a distressing cycle of adverse expectations, a collapse in investment, and deep recession.[xiii]

Monetary policy. The role of monetary policy in this process is secondary but far from irrelevant. Throughout, the central bank maintained that the NEM-consistent monetary regime was a continuation of the previous IT regime. In practice, it was a deviant form. The changes introduced were not simply "a product of the times." They had their own theoretical justification.

More so than central banks of the recent past, the NEM central bank privileged external events and not because they were as constrained by external funding, as was the Fraga administration (1999-2002). On the contrary, it was in response to their perception that Brazil was, comparatively, an island of tranquility in a turbulent sea of global events. Given the unconventional policies of the main global central banks, and events such as the European crisis of 2012, or the "taper tantrum" of 2013, arguably, the transmission of external shocks was stronger. The argument, however, was not about intensity, it was about centrality. For the NEM central bank had the view that external shocks were the dominant cause of domestic monetary disturbances. Policy, therefore, had to be aimed at those events. In the same mode, Dilma's administration blamed external forces for domestic underperformance.

One may, however, construct an alternative interpretation, and attribute the failure of NEM policy to their own mistakes. Regarding monetary policy, three are of import, and the first is about the use of IT as a tool.

As the name implies, IT privileges inflation as the main, if not the single, objective of monetary policy. It is, however, embedded in a framework where the inflation objective is conditional to the output gap, a measure of the capacity of the economy to produce output, with the given resources and technology, and without changing the rate of inflation. While monetary policy may change the gap, it takes the standard against which the gap is measured, the underlying longer-term output potential of the economy, as given. Thus, monetary policy, an IT within it, does not aim to change the causes of economic growth, only their short-term fluctuations. The priority of the inflation objective has consequences, nonetheless, and in the aftermath of the GFC it was important to address them, to "flexibilize" IT.[xiv] It was important to understand why a central bank would accept a long undershooting of its inflation target while it pursued policies to stabilize the economy and make the target attainable; why it could, in the aftermath, accept a transitory overshooting of the target as the economy travelled back to its normal conditions.

As Lars Svensson, one of the "father's" of IT theory in the 1990s, noted in 2010, "flexible IT means that monetary policy aims at stabilizing both inflation around the inflation target and the real economy, whereas strict inflation targeting aims at stabilizing inflation only, without regard to the stability of the real economy."[xv] Deviations from targets are tolerated if they don't persist (i.e.: if they are credibly seen as transitory) and only if the objectives, and duration, of the deviation are clearly stated. In the "flexible" regime, IT central banks must make explicit their policy horizon; i.e., define (forecast) the timeline for inflation to return to the target, conditional on the current policy rate, and its future path. In other words, a pre-commitment of future policy.

Curiously, the Brazilian central bank used a somewhat similar scheme *in 2003*, although, admittedly, without the pre-commitment. After the exchange rate overshot in 2002 and the new administration took over, the bank defined, and published, "intermediary" targets for convergence to the target over the 2003-2005 period. At the time, "flexible" IT was not a theoretical innovation. Rather,

it was a pragmatic approach to monetary policy at a moment when, in January 2003, with a new government in place after a difficult political transition, and with the aftereffects of the exchange rate devaluation still incomplete, inflation hit 14.5%yoy. 12-month ahead inflation expectations were 11%, and the committee had just raised its policy rate to 22.50%. In those circumstances, the central bank adopted intermediary date-specific targets, 8.50% for yearend with a two-year path of convergence to the target of 4.50%.

What the NEM central bank did in mid-2011 was something entirely different. Echoing sentiments abroad, it incorporated in its minutes' language about the limitations of "pure" IT. It hinted at a strategy with flexible targets, consistent with the NEM's objective of revitalizing domestic demand. *It did not make the change explicit*. It was a stealth change in regime—and a change it was! In August 2011, the central bank ventured on an experiment. A series of cuts in the policy rate to bring it down from 12.50% to 7.25% in October 2012 (where it would stay until April 2013) regardless of what was happening to expected (forward) and actual (backward) inflation. At the time, with the target set at 4.5% barely four months later, inflation was near 7.2%yoy, with limited signs of rapid deceleration, given the red-hot labor market. Though the economy had started to slowdown, the labor market was insulated, and inflation unrelenting.

Unemployment, at 6% when the experiment began, descended from 8% barely three years earlier, in July 2009. The 12-month average of the real minimum wage was up nearly 10% in the year, and real average earnings in private formal employment, close to 4%. Meanwhile, inflation expectations were intractable: 12-month ahead expectations stood at 5.5%, and would accelerate to near 6.5%, the ceiling of the IT target band. This was not a central bank that aimed to reach its target. Instead, it was a central bank that had given up its aim at the midpoint of target, that accepted the ceiling of the band (6.5%) as its goal, using the sophistry of "flexibility" as an excuse and hoping that, in the process, it could produce a tradeoff between inflation and unemployment. When it came to it, it did not work. The

markets soon understood, and reacted accordingly, by raising longer-term rates, thus short-circuiting any possible stimulant impact.

There was, however, another explanation for the central bank's actions. Post the GFC, critics blamed IT not only for its lack of flexibility in accepting temporary deviations from the target. There was also concern about its value when addressing changes in financial conditions, when responding to "bubbles" in asset prices. The criticism was not against IT as a tool. Rather, it was against "the philosophy" of IT-using central banks. The argument being that, in the singular pursuit of the inflation target, for example, in Alan Greespan's Fed, taken as the prototypical case, and calmed by the long years of the "great moderation," these central banks overlooked, truly disregarded, growing financial imbalances. They missed the onset of the GFC.[xvi] There were failures in regulation and in financial supervision. There was a failure in communications and too much coddling up to the interests of the financial industry. It was generally accepted that the use of interest rate policy would have been, in any event, inefficient and impractical to burst financial bubbles. Thus, there was no inherent incompatibility between IT and financial stability. What was called for is better and stronger regulation, measures to limit risk and address the incentives structures within regulated entities. For central banks to give greater, indeed equal, priority to supervision; for them to develop adequate tools of macroprudential policy.[xvii]

The NEM central bank took an active part in this international debate, and welcomed its conclusions. With a history of financial crises, these issues were familiar to the Brazilian central bank. Since the 1980s, financial stability was formally an integral part of its mission, and, in marked contrast to the US Fed, it had control over all aspects of supervision and the enforcement of regulation. The arrangements worked well. Notwithstanding its close integration to global finance, the Brazilian financial system came out relatively unscathed from the GFC. Credit was due, rightly, to the strength of supervision[xviii]. Moreover, the Brazilian central bank had the macroprudential toolkit onboard. It had

been developed for different purposes, at a much earlier date, to make effective forms of financial repression with which to finance the budget. As such, in 2011, it was proficient with the practices of quantitative restraints on credit and other practices in the now renamed toolkit of "macroprudential tools." The bank had long-since operated with selective reserve requirements, credit ceilings, "dynamic" provisioning, etc., so much so that in earlier administrations there had been conscientious efforts to reduce their scope and intent.

But these were not the aspects the NEM central bank was interested to change. By 2012, the credit market was very much segmented. Subsidized, policy-driven "long-term" lending by the national development bank and other public banks accorded for over half of all corporate lending. The NEM central bank was only happy to let that go through unhinged. Rather, its focus was on external capital flows and the active management of the exchange rate through a rebranding of some of the discredited, and recently discarded "macroprudential tools."

It is well-known that conventional and unconventional monetary policy in the advanced economies, and in the US in particular, has been the main driver of cross-border capital flows.[xix] Moreover, Brazil is peculiar in that it operates with a high real interest rate regime.[xx] As such, it has been prone to both sudden floods (large inflows leading to excessive growth in consumption and in foreign liabilities, with disruptive bouts of real exchange rate appreciation) and sudden stops, typical of the 1990s and early 2000s. QE in the US caused one such flood in Brazil in mid-to-late 2010, with a sudden reversal in 2011 and brief net outflows (from US sources) in early 2012. The central bank, together with the Ministry of Finance, reacted by imposing, tightening and then loosening taxes on inflows; by raising and then decreasing reserve requirements; by accelerating the pace of reserve purchases and then temporarily lending them to the private sector; more controversially, by selling derivatives to offer foreign exchange hedging to the private sector.[xxi] The policies had the intended effects: intervention changed the actual and expected level of the exchange rate; the change in reserve requirements

changed the overall availability and composition of credit; the tax on inflows impacted on investors decisions.

The policies also changed investors' perceptions about the central bank. Here was a central bank that no longer followed a single pursuit. A monetary authority that was intervening through price and quantity targets, acting in several simultaneous directions and through several overlapping and non-transparent instruments. The challenge was communications and, yet, the central bank was quiet; indeed, as it changed policy more frequently, it communicated even less. Credibility took a big hit. The two parts of "flexibilization," namely, a diminished commitment to the inflation target, and the abuse of "macroprudential tools," heralded a changed central bank, one more attuned to the NEM goals of stimulating domestic demand and using price and exchange controls to manage inflation.

There was a third mistake, in our view, in how the NEM central bank dealt, or not, with inflation. At issue is not the actions taken, but the ideas behind them. What we discuss is speculative. But it may help us understand why the NEM central bank claims that it was not "flexibilizing" or denigrating the IT regime but, more properly, improving it.

The background here stretches back to the "heterodox" stabilization plans of the 1980s and 1990s, based on a fixed foreign exchange anchor of some kind, such as the Real Plan of 1994. With its innovative design, the Real Plan succeeded spectacularly. However, like the others, it also lacked a firm fiscal anchor and, some would argue, as time wore on, the trust of investors. The result, towards the end, was a distorted monetary regime with one overriding purpose, to entice enough foreign capital to sustain the peg on the exchange rate. The consequence, was a regimen of high real interest rates that asphyxiated the domestic economy, waiting for the normalization of capital flows and/or a draconian-enough fiscal adjustment. The regimen collapsed with the shock of Russia's default at end-1998.

To Brazil's fortune, by mid-1999 it had been replaced. In came the tripod, still standing: a floating exchange rate with a soon-to-be credible inflation target and, at the core, a fiscal anchor

supported by the new Fiscal Responsibility Law. At the time, no one would have guessed that the fiscal anchor would be in the form of an overperformance of revenues over expenditures, thus with large-enough primary surpluses masquerading for a, de facto, progressive worsening of the structural fiscal balance with unsustainable increases in real expenditure that would prolong to this date. At the time, the external measure of Brazil risk improved and the real interest rate fell.[xxii] However, in retrospect, perhaps not entirely surprising, the regime of high real interest rates survived, a structural qualifier to the Brazilian tripod.

It is hard to find convincing, parsimonious explanations for this feature. It is not, however, entirely a wonder, or even an "abnormality."[xxiii] Although it is unique to Brazil among the successful IT adopters, the outcome was foreseen in the literature about heterodox stabilizations, in the early theoretical papers by Obsfeltd, by Calvo and by Bruno.[xxiv] The underlying theoretical issue is multiple equilibria outcomes, post-stabilization. The theoretical finding being that the critical value of the post-stabilization yield (revenue) of the inflation tax (seignorage to finance the gap in the fiscal account) could be the same if stabilization produced either a higher inflation or a lower inflation result. Both outcomes were possible and the challenge was to produce the good one—the one with low inflation for the given fiscal deficit or, alternatively, with a lower real interest rate for a given rate of inflation and fiscal deficit.

As Michael Bruno observed, reflecting on his experience with Israel's 1985 exchange-based stabilization, "Which is the relevant equilibrium depends on how economic agents form expectations and adjust prices and other nominal magnitudes (wages, money and/or exchange rates) while learning about the system".[xxv] With adverse expectations, post-adjustment, the economy could be stuck in the bad equilibrium with high interest rate/ high expected inflation. The literature isn't clear on what causes the bad outcome. Intuitively, it has something to do with the intertemporal consistency of the promises made. Does the central bank have the credibility to promise the targeted level of inflation? Does the

fiscal authority have the means to promise the fiscal targets? Is the regulatory structure strong enough to make bond markets believe in the promise of no default? Is the incentive structure for the economy compatible with the promise of longer run growth needed to stabilize the ratio of public debt-to-GDP?

For Brazil, the presumption had always been that none of these questions could be answered affirmatively.[xxvi] On the contrary, it was always easier to argue why the economy remained stuck in the bad equilibrium. An obvious culprit was the fiscal stance and the underlying structural weakness. The NEM central bank, however, seemed to have decided to act on it.

For most policy makers, multiple equilibria, was (and still is) a didactical exercise. Something to be used when explaining different outcomes, for example, low-inflation/interest rate stabilization in Chile and high-inflation/interest rate stabilization in Brazil. Useful to hammer down the message of structural constraints to the level of the interest rate and, hence, of the need for structural reforms in other, non-monetary, policy areas. For the NEM central bank, however, it seems that it was more. In mid-2011, the central bank started a public discussion about structural change, not the need for it, rather, about supposed outcomes of already accomplished change. Change of the kind that would somehow enable a movement from a "bad" equilibrium to a better one—to a permanently lower neutral real interest rate. Indeed, starting with the meeting of September 2010, the monetary committee had added the following paragraph to its minutes:[xxvii]

> *Como consequência da estabilização e da correção de desequilíbrios, as quais determinaram mudanças estruturais importantes, o processo de amadurecimento do regime de metas se encontra em estágio avançado, e isso se reflete favoravelmente na dinâmica da taxa de juros neutra e na potência da política monetária. ... Apesar de reconhecer que um elevado grau de incerteza envolve o dimensionamento de variáveis não observáveis, o Copom considera que as estimativas mais pessimistas sobre o nível*

atual da taxa de juro real neutra tendem, com probabilidade significativa, a não encontrar amparo nos fundamentos. O Comitê também pondera que há evidências de que a tração da política monetária aumentou no passado recente e, comparativamente ao que se observava há alguns anos, atualmente pressões inflacionárias são contidas com mais eficiência por meio de ações de política monetária.

Whether influenced by these ideas, or not, the fact is that, as we have seen, the bank took radical action: the 525bp cut in the policy rate from August 2011 to October 2012, bringing the Selic target rate to the lowest level ever. No COPOM had dared this before, although, possibly, others also had thought about it at some point. Here was a deliberate, policy-induced attempt to nudge the price system to the good equilibrium by manipulating the nominal interest rate—and, regrettably, it failed miserably.[xxviii]

One may ask how did they dare do it? But, then, in mid-2011, Brazilian policy-makers were riding a wave of optimism and vainglory. Post the GFC, together and in tandem with China, the country arose as "the darling" of foreign investors and markets. Respected international observers applauded the set of policies incorporated in the NEM, confusing, for example, the appropriateness of fiscal stimulus in Europe with that of Brazil. The IMF, a perennial critic, lauded Brazilian policy-making. In its "rethinking of macroeconomic policy," it agreed with several if not all theoretical underpinnings for the new policies.[xxix] The sophistry of government pronouncements helped. And the NEM central bank never looked back.[xxx] It did not recognize the failure. While it could not claim success, it accepted implicitly that from thereon the target for inflation was, de facto, the ceiling and not the midpoint of the target band. And soon it lost control of that as well, depending ever-more on price controls to paper over an inflationary momentum that inevitably erupted into full blown double-digit and inertial inflation. It failed and could not recover.

In sum, the three “innovations” in policy were all mistakes. The “flexibilization” of the inflation objective without a clear communication of policy, and in pursuit of the mistaken belief that activity was lagging due to insufficient demand. The misuse of macroprudential tools and price controls as a substitute for interest rate policy to control inflation. The disastrous attempt to lower a fortiori the equilibrium neutral policy rate, in pursue of a mythical “good” equilibrium. With the mistakes, the political and economic challenges of reestablishing the target was something it could not face. Ultimately, the economic cost of three years of policy mismanagement, and the difficult legacies left for the successor regime, were written off, filed away as another failed policy experiment without blame or accountability.

4. The Role of Fiscal Policy

Brazil did not have a proper central bank until 1964, and only in 1986 the functions of Banco do Brasil, a publicly-owned commercial bank, were isolated from those of the central bank. It was only in 1988 that the central bank began to conduct open-market operations. Formal limits to the central bank funding of the Treasury emerged only in the late 1980s, and implemented in the 1990s, a period of near hyper-inflation with, progressively, near-complete indexation of the financial system. The monetary authority did not in fact exist, subjected as it was to the funding needs of the fiscal and quasi-fiscal system (including the public banks) and without a Congressional constraint on its capacity to create debt. It was only in the post Real Plan period, and in fact, only after the floating of the exchange rate and introduction of IT in 1999, that the concept of an independent monetary authority began to take shape. For all this, and given the ideological confrontations, the concept of an autonomous monetary policy is slippery and controversial.

From the beginning, even post-IT, the idea of independence was questioned. Not only in the discussion about separation of powers (to whom does the monetary authority report to?) but also in concerns about fiscal dominance. As discussed, monetary policy in Brazil operates, and emerged from, a high real interest rate regime. It also operates with largely unpredictable fiscal outcomes and, for extended periods, under threats of external insolvency. It is a prime candidate for fiscal dominance. The standard reference is Blanchard's 2004 paper:

> *A standard proposition in open-economy macroeconomics is that a central-bank-engineered increase in the real interest rate makes domestic government debt more attractive and leads to a real appreciation. If, however, the increase in the real interest rate also increases the probability of default on the debt, the effect may be instead to*

make domestic government debt less attractive, and to lead to a real depreciation. That outcome is more likely the higher the initial level of debt, the higher the proportion of foreign-currency-denominated debt, and the higher the price of risk. Under that outcome, inflation targeting can clearly have perverse effects: An increase in the real interest in response to higher inflation leads to a real depreciation. The real depreciation leads in turn to a further increase in inflation. In this case, fiscal policy, not monetary policy, is the right instrument to decrease inflation.[xxxi]

Indeed, Blanchard was writing about Brazil. His concern was the situation in 2003, post the politically induced overshooting of the currency in the fall of 2002. As it turned out, his prediction was proven wrong, and early critics explained why some of the hypotheses were not applicable.[xxxii] The concept, however, captured the discourse. Analysts argue today about fiscal dominance, and not only of the past, also in the current setting. Many thought, emphatically, that the regime in 2015 was of fiscal dominance.

The motive for this captivation is simple. For at least the last three decades, since the Constitution of 1988, fiscal policy has been wrong. It may be a leap, but not an exaggeration to say that in Brazil's twelve decades of Republican history it has hardly ever been right. The commonplace to note is that the weak link in policy is, and has always been, fiscal. What matters is Blanchard's fundamental insight: "fiscal policy, not monetary policy, is the right instrument to decrease inflation." Largely, in the post-1998 period of IT, monetary policy has been effective. It is empirically the case that future inflation and activity respond in the direction expected to present changes in the real interest rate. Nevertheless, in most periods, the fiscal stance worked against the effectiveness of monetary policy. What we observe, therefore, is an unusual pattern of extreme and frequent monetary policy activism.

A hallmark of recent policy, which we discuss below, is the recognition that the fiscal issue is structural and not cyclical. Arguably, this is an argument to buttress the credibility of monetary policy. But it was not so during the NEM period, on the contrary. Not only were budgetary policies lax but, as we discussed, the actions of public banks and state corporations, of tax and price controls, diminished the impact of a, consequently, enfeebled monetary response.

Research has shown that, unsurprisingly, monetary policy is less effective for firms with access to government-driven loans of one kind or another. It has shown that this form of market segmentation helps isolate the level of employment from the impact of monetary policy, and to attenuate the impact of external shocks. Thus, segmentation drives a wedge on the normal operation of macroeconomic transmission channels. It renders them less effective and its impact is large, persistent and pervasive.[xxxiii] In Brazil, the development bank is often championed as the "only viable instrument for capital formation," as a necessary antidote to market failures that impede the development of long-term lending. The reality is otherwise. Its lending may have led to lower productivity growth.

> *Its actions do not have any consistent effect on firm-level performance and investment, except for a reduction in financial expenditures due to the subsidies accompanying loans. However, BNDES does not systematically lend to underperforming firms. Our results indicate that BNDES subsidizes firms that could fund their projects with other sources of capital.*[xxxiv]

Furthermore, there was yet another channel through which fiscal policy affected the NEM monetary regime, a financial link between the operations of the Treasury and the Central Bank that made monetary policy, in fact, nearly always, less restrictive than what it seemed to be.

"Creative accounting," Central Bank-Treasury relations, and Monetary Policy. Before the GFC, "normal" central banks had small balance sheets. Their main liability was the money base and the main asset, a stock of Treasury paper typically with long maturity. For the US Fed, for example, in 2006, the money base was 90.2% of total liabilities, and the stock of Treasuries, 90.3% of total assets. The money base paid no interest, and the Treasuries did; hence, central banks were typically profitable, with profits transferred to the Treasury. Because everything was small, the transfers were an unimportant part of total fiscal revenue. All this changed after the GFC. By 2015, the Fed's balance sheet was $4,489 billion, 24.6% of GDP, and its structure had changed considerably. It held $2,462 billion in Treasury securities; interests paid to the Treasury were $28.1 billion or close to 1% of total fiscal revenue, and because the post-GFC Fed pays interest on the reserves commercial banks deposit at the central bank, and reserves are a large portion of its liabilities, the possibility of future large potential losses, hence a drain on the fisc, developed into a contentious political issue.

The same set of issues are germane to the Brazilian central bank. Indeed, the size of its balance sheet is proportionally larger than the Fed's, near 50% of GDP in 2014, and it was already large before the GFC. The composition is dramatically different, however. As shown in Table 1, base money is a mere 12.2%; deposits from commercial banks, 13.1%; Treasury accounts, 32.4%. The largest liability (38.8% of the total) is "operações compromissadas," reverse repo operations collateralized by Treasury paper conducted through the local derivatives market.

Compromissadas are the preferred instrument for liquidity management in open-market operations, the counterpart to the Fed's interventions in short-term money-markets for the same purpose: To keep overnight interbank borrowing rates close the monetary policy rate. The puzzle is why, in Brazil, the stock of *compromissadas* grew to be so large. Would the central bank need 38.8% of its balance sheet (15.7% of GDP) to intervene in money-markets, if the only objective was to stabilize day-to-day changes in market liquidity? Not likely; the expansion in *compromissadas* is, rather, an outgrowth

of the accumulation of foreign exchange reserves. The central bank cannot issue its own paper. To have instruments with which to sterilize its purchases of foreign exchange (to buy back the reais it spent) it had to borrow paper from the Treasury. By selling Treasuries to the market it would drain the liquidity it had created. Only, the secondary market in Treasuries in Brazil does not work well. What was available were repo and reverse repo operations between the central bank and agents with accounts at the central bank. The arrangement produced two critical outcomes.

- First, since the cash used by the central bank to buy the treasuries was deposited in the Treasury account at the central bank, as the stock of foreign reserves increased, so did the size of the account. The volume grew to be so large that, irrespective of sudden changes in reserves, the account at the central bank was always in surplus—a large surplus. Legally, the Treasury could use this surplus to buy back its own debt. In practice, during the NEM years, it chose not to do so. It had an incentive: The account was remunerated at an interest rate equal to the average interest rate of the treasuries it had bought. Thus, it produced a steady stream of income for the Treasury, which could be used interchangeably with other current receipts to meet any Treasury obligation—for example, funding the deficit. The quantities involved were large: The central bank estimates that between December 2006 and November 2015, interest paid on *compromissadas* summed to 10.1% of GDP![xxxv] To be sure, there was a counterbalancing flow: The Treasury paid interest on the debt owned by the central bank. The difference is that this stream was excluded from the total in the primary (non-interest) expenditure account of the government. This is the figure agreed with Congress and then set in the Budgetary Law. Thus, the expedient between the NEM central bank and the Treasury

worked as a political subterfuge to meet Congressionally set requirements, without really meeting them.

- Second, the conversion of Treasuries into *compromissadas* produced a shortening in the maturity of the combined Treasury plus central bank debt. Time and again the Treasury during the NEM period faced difficulty in placing its desired composition of debt. In times of uncertainty, buyers shy away from longer-duration (maturity), fixed rate paper. They prefer zero-duration (overnight) floating rate paper indexed to the central bank rate. And yes, in Brazil, the Treasury offers this paper, a legacy from the times of near hyper-inflation. If buyers could not get it, they would settle for the *compromissadas*. They bought the longer-dated Treasury bond, but did not keep it. Instead they would repo it with the central bank for 30 or 60 days. And in the accounting of the mutual funds (the main buyers of Treasury paper) it is the original structure, not the repo'ed transformation, that counts for meeting regulatory requirements. In January 2015, the mutual fund industry, the largest fixed income investment vehicle in Brazil, had 24.4%% of its assets invested in *compromissadas*. The net result was an effective reduction in the average interest rate paid by the Treasury on its total stock of outstanding debt, a measure of monetary stimulus.[xxxvi]

Compromissadas are used also to manage valuation changes in the stock of foreign reserves, again, with consequence for the effects of monetary policy during the NEM period. Since the BRL floats, expressed in reais, the value of the stock of foreign reserves varies even when there are no transactions in foreign reserves. On a cash basis, these valuation changes have no impact on the balance sheet. However, if the values in the balance sheet are priced to market, marked-to-market, the valuation

change impacts directly the balance sheet. Central banks have dealt variously with this problem.[xxxvii] A simple way is to create a valuation account, below the line, adjusted only when there are actual transactions in foreign exchange. The Brazilian arrangement is more complex, and since the approval of Law 11.803/2008 asymmetric and perverse.[xxxviii]

For the Law says that when there are gains in valuation (i.e., when there is a depreciation of the BRL vis-à-vis the currencies in which the reserves are invested) the central bank transfers cash to the Treasury, almost immediately (typically with a lag of at most two months). However, when there are losses, the Treasury makes the central bank whole by a special emission of Treasury bonds. This means that gains in valuation are deposited in the general government account, but losses in valuation are not debited from it, another reason why the surplus in the general government account is so large.

To keep market liquidity under control, and thus achieve its interest rate target, the central bank must intervene if the Treasury draws and spends from its resources in this account. Once again, the preferred instrument are *compromissadas*, and the consequences are as above. The volume of compromissadas grows, the central bank transfers net interests received to the Treasury, and there is, potentially, an implicit financing of the Treasury by the central bank if the Treasury draws on the account to finance the deficit, as it did during the NEM period, notwithstanding the Constitutional prohibition. For all these reasons, monetary policy may be, and was during the NEM period, laxer than indicated by the posture on interest rates alone.

The implications are clear. Had fiscal deficits led to transparent measures of debt accumulation, interest rates, market conditions, and monetary policy would have been different in the NEM period. The capacity of the government to finance itself would have been smaller, with an impact on desired policy. The stance of monetary policy, and the subterfuges used, created fiscal space. That it was misused only completes the tragedy of the NEM period.

5. **Conclusion**

The legacy of the NEM central bank was an institution with compromised credibility that reinforced inertial elements in inflation and weakened the institutions governing Treasury/central bank relations. A return to more credible IT can deliver inflation at the target, and, we believe, will. Self-discipline by the Treasury can reestablish clear limits for the central bank. The example of the NEM central bank shows, however, that it was relatively easy to subvert principles. What was done was done within the institutional framework. There was no need for new legislation or major regulation. The was room for deviations, and the impetus were the political objectives and the demands from fiscal policy. On balance, the key failure was the failure of the broader macroeconomic regime, and this has been a constant in Brazilian history. To this day, the main challenge is to build fiscal support for effective monetary policy. In Brazil, the probability of a fiscal failure constrains and reduces the scope of monetary policy.

Given the tools its uses, the success of monetary policy depends on expectations. In the canonical IT model, and in most real-world applications, the reference is to future inflation. There are other elements, the usual economic arsenal of general equilibrium relations. Exchange rate forecasts influence inflation expectations; the stance of fiscal policy works itself indirectly onto forecasts of the output gap. This is the norm. However, Brazil is outside this norm: Inflation expectations, and thus the impact of monetary policy, are conditioned by expectations about fiscal outcomes, for good reasons. During the NEM it was because the pursuit of political objectives found no constraint on monetary policy. Presently, it is because the forecasted trajectory of the ratio of domestic public debt to GDP is unstable and could slip into insolvency.[xxxix]

This said, throughout, debt markets functioned normally. Crises were overcome and asset values moved accordingly, very much in response to the foreign (low) to domestic (high) interest rate

differential. It is as if no one seriously thought that the next step could be a monetization or repudiation of the public debt, precipitating an end-game crisis. Investors admit that they are probable events. However, somehow the belief is that the fiscal stance will change, in years past, because GDP growth would unshackle the constraints, now, because there is some confidence that the government will implement, at long last, structural change. It is this belief that allows monetary policy to operate. It is not a situation of fiscal dominance, as technically conceived. Much less it is empirical support for the ill-conceived "fiscal theory of inflation."[xl]It is, nonetheless, an instance where fiscal constraints are dominant. This helps explain the behavior of markets during the NEM period, when the authorities resorted to subterfuges to try, somewhat successfully, to fool the market. Since then, shocks to inflation abated, and inflation expectations improved. Yet fiscal developments are, once again, the critical obstacle in the implementation of monetary policy. Despite soaring unemployment and a gaping output gap the central bank waited for the political process before beginning the latest easing cycle in December, 2016. It waited for confirmation that Congress delivered on the promised fiscal measure. And likely it will continue to do so. The central bank's policy statements say so, and they are convincing—for otherwise debt markets would respond alarmingly to the incongruity between current policy and expected debt outcomes.

The measure of what politicians and/or technocrats deliver is subjective, to be sure, and expectations—also about inflation—express a political judgement. A government with strong political backing can get by delivering less. It may produce positive expectations when results are, in fact, mediocre, compromising future outcomes. The period of the NEM is a case in point.

But not so today. The fiscal outlook for next decade is extreme by Brazil's own standards. It is challenging beyond the challenges of the crises of the 1990s and the early 2000s.[xli] By most accounts, the Debt/GDP ratio will keep climbing until 2020 or thereabouts, when it will reach, possibly, 90-100%.[xlii] The just approved constitutional mandate to cap the real growth in (primary) public spending, the

current tool, and the very measure that unlocked the central bank, is not enough.[xliii] The next hurdle is the reform of the social security system. Expected in the second half of this year, it would be a consequential milestone—and we expect it will be. For, even with limited initial fiscal effect, it would change constitutional practices stretching back to 1943, if not earlier.[xliv] It would impact directly and adversely broad constituencies such as unionized labor and the civil service, with large political clout. If there are turning points in the road to a new fiscal regime, this may very well be it.

But it also would not be enough. First, because the reform will be, likely, "sliced" or diluted to make it more "palatable," thus in need of subsequent attempts. Second, because other things would have to be done to shift the course of deficits to surpluses in the primary fiscal accounts, the precondition for debt sustainability. A reform of the broader tax regime will not be possible before the next administration in 2018-2022. It may not happen even then. Several subnational governments are practically bankrupt. A third consecutive rescheduling of their debts was announced including debt relief at the expense of the central government, and it may not be enough. The idea that a cap to real expenditure may lead to a reduction in the share of public expenditure in GDP makes sense if growth is fast. In this scenario, fiscal deficits would turn to surpluses and the trajectory of debt growth change. The path of Debt/GDP would stabilize, waiting for the decade-ahead fiscal dividends of the social security reform. But, post the excesses of the NEM and the generally weak global forecasts post-GFC, with a decade-long drop in productivity, growth is likely to be anemic. One would have to expect that politicians will turn to cutbacks in real public expenditure, beyond those now envisaged.

The question is, what do investors who hold Brazilian debt expect? Seemingly, very little. It is surprising that time and again, the fiscal authorities have the benefit of the doubt. During the NEM it was the promise of growth even when, patently, it was disappointing. And what about events so far in 2016/17? Expectedly, investors react to events, a ratings downgrade, a political fiasco, breakdowns in budget negotiations. But soon enough, they accept the status quo with its inconsistencies. There is a

fatalism about politics and the political system, about what can be done, and about the debt. This fatalism supports inaction, until the next crisis.

This of course matters for monetary policy, where expectations play a critical role and the future must be anticipated. The implication is that, over time, monetary policy in Brazil is likely to fail. Quite aside from domestic and external shocks, fiscal uncertainty undermines its function. An expert handling of the tools helps but cannot neutralize the uncertainty. The tools are effective. However, no sensible set of policy makers would use the tools of monetary policy to fully counter the impact of fiscal policy. If the fiscal side is as unyielding as it is, and will continue to be, the easier solution is to give up, periodically; of course, making things worse for the future.

Giving up on a policy course, regulatory forbearance, partial debt amnesties, periodic forgiveness and/or rescheduling of taxes and other obligations due, re-working of contracts, an impeachment proceeding that ends without the Constitutionally mandated punishment, tolerance with broken political programs, all are expressions of a jurisdictional mix-up that, ultimately, reflects on asset prices. As Edmar Bacha has long since observed, this may help explain the puzzle of why, even in times of good monetary policy, Brazil operates within a high real interest rate regime that feeds back into low growth and a compromising fiscal outlook.[xlv] It also helps explain why, in Brazil, there ***are*** fiscal limits to monetary policy.

Figure 1. Central bank (BCB) balance sheet – Foreign assets and stock of Treasury securities
(% of GDP)

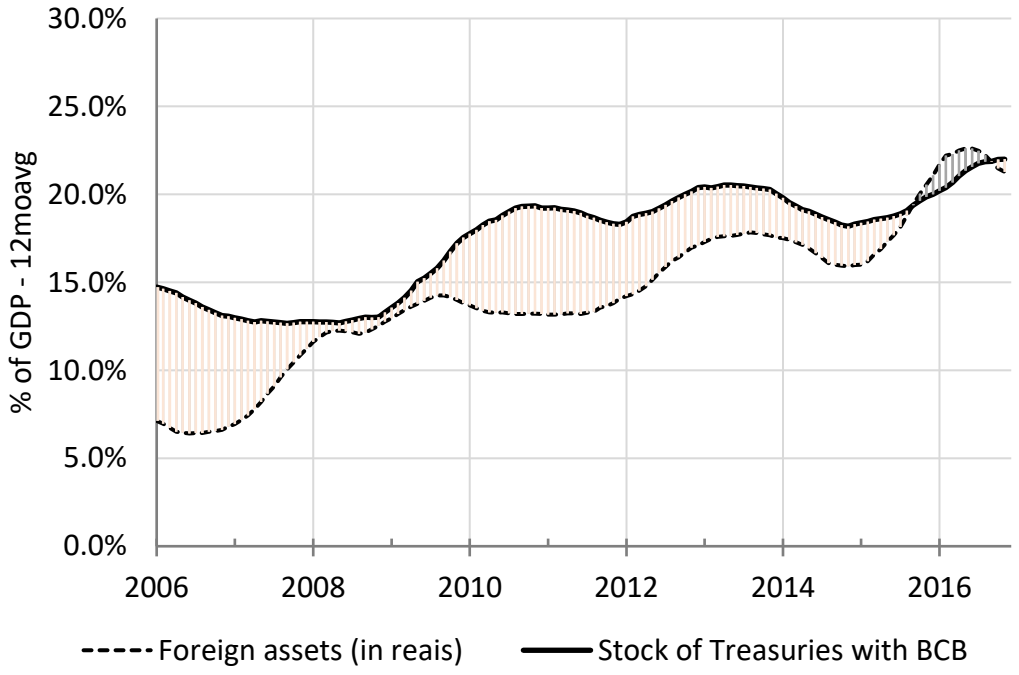
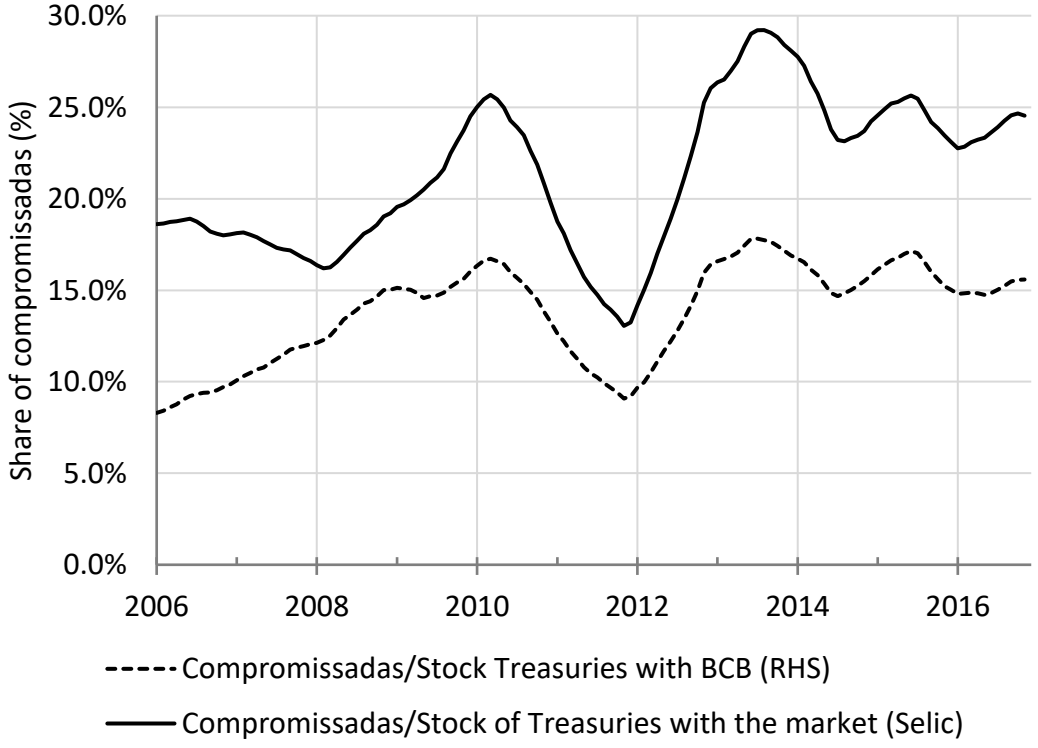


Figure 2. Stock of BCB "compromissadas" as a share of the BCB's stock of Treasury security; as a share of the stock of Treasuries trading in the market (Selic)
(%)



NOTES:

[i] The target is set for the central bank by the National Monetary Council that has left it at 4.5% since 2005, with a tolerance band of +/- 2%, in principle, to accommodate exceptional circumstances, only.
[ii] Ref. to China's stimulus = unexpected 2pp equivalent of global GDP.
[iii] As emphasized in documents and speeches at the time, this was the first time that foreign crises could be met with counter- and not pro-cyclical responses. The first time the crisis was not first and foremost a balance of payments crisis that called for contractionary policies aimed at safeguarding dwindling foreign reserves at a moment of exchange rate panic. It was, instead, a moment for celebration. Yes, amidst the global pain, a "conquest" for Brazilian policy. As the then Governor of the Central Bank noted, "this clearly demonstrates the consolidation and maturity of the regime of [inflation] targets in Brazil." H. Meirelles (2009) "Pronunciamento do Presidente do Banco Central do Brasil" *IX Seminário Anual de Metas para a Inflação*, May 15, 2009, Par. 9
[iv] Discussion about post-*mensalão*, 2005 campaign, and how it was the signal of a political shift.
[v] The underlying statistic is the 12 months' sum of monthly Treasury primary expenditure, deflated by the monthly CPI index (IPCA). The growth rate refers to the 12month average of the year-on-year change.
[vi] A central tenet of *desenvolvimentismo*, is the negation, in fact, a naive inversion of Say's law. It is not supply that creates its own demand, it is demand that creates supply—not only during recessions, always. Moreover, *desenvolvimentismo*, abjures underconsumption theories. Recessions and stagnation are not a reflection of inadequate consumer demand and/or private investment linked to future consumption. More often than not, recessions are caused by misguided policies of public spending; by wrong-headed regulation and by insufficient/misdirected incentives through public banks and corporations. Most versions of *desenvolvimentismo* forgive and forget fiscal deficits. They are not a financial restriction; they do cause misallocations; they do not substitute public for private spending, not today or in the future. Rather, they are "self-imposed constraints on government spending [and] should be removed." Rezende, F. (2009) "The Nature of Government Finance in Brazil." *International Journal of Political Economy*, 38 (1), p.95.
[vii] See, for example, Bresser-Pereira, L. C. and P. Gala. (2010) Macroeconomia estruturalista do desenvolvimento. Revista de Economia Política, vol. 30, nº 4 (120), pp. 663-686, outubro-dezembro.
[viii] "Does inflation target pin down the monetary regime? Evidence from Brazil." Washington DC: International Monetary Fund, October 2015.
[ix] Edmar Bacha, "INTEGRAR PARA CRESCER: O BRASIL NA ECONOMIA MUNDIAL. " Rio de Janeiro, Instituto de Estudos de Política Econômica/Casa das Garças, December, 2013
[x] References re: Lava-Jato.
[xi] References to "Custo Brasil" and historical low productivity (Bacha/Bonelli and World Bank recent report).
[xii] Reference to recent drop in TFP.
[xiii] In 2015 total investment contracted 14.1%yoy. Starting in 2012, arguably, new investment in machines and equipment grew at a lower rate than depreciation (thus with a partial destruction of the capital stock).
[xiv] Reference to the debate ("is IT dead?") + why the priority? = Taylor's b>1.
[xv] Svensson, L. (2010) "Inflation Targeting." In: B. Friedman and M. Woodford (eds.): *Handbook of Monetary Economics*. Elsevier.
[xvi] In 2000, eight years before the onset of the crisis, Fed Governor Edward Gramlich became concerned about the spread of unsecured mortgage lending and urged Greenspan to act; in 2007 he published a book warning of the coming mortgage crisis entitled *Subprime Mortgages: America's Latest Boom and Bust* (Washington DC: The Urban Institute Press). Greenspan's ideological aversion to regulations, his beliefs that markets would self-correct, and his political imperative to sustain the recovery in output to favor the Republican candidate ahead of the US Presidential election, led him to dismiss all warnings.
[xvii] Reference
[xviii] Brazil had, however, its own "derivatives failure," and very much a function of inadequate reporting and supervision. Explain.
[xix] Reference to Rey (Kansas City Fed). See also, Ribeiro Blanco Barroso, J. (2016) Capital Flows to Emerging Markets: Causes, Consequences and Policy Options. Rio de Janeiro, RJ. XVIII Annual Inflation Targeting Seminar of the Banco Central do Brasil.
[xx] Reference to high real interest rate regime.

[xxi] For a discussion and survey see,
[xxii] In Oct/1998 the overnight (SELIC) rate averaged 41.6% as inflation (backward looking) dropped to 2.1%yoy. External funding was reestablished, in part, through an emergency IMF agreement and by yearend the rate dropped to 32.9% with inflation falling farther to 1.7%yoy. By Jan/2000 the rate was at 18.9% and inflation at 8.9%yoy, for a real rate (backward looking) of 9.3%. For the next several years, the real rate would hover at around this value only falling substantially after mid-2007.
[xxiii] Why are Brazili's real rates so high? Literature.
[xxiv] Obsfeld, M. (1986) "Rational and self-fulfilling balance-of-payments crises." *American Economic Review* 76 (1). Calvo, G. (1988) "Servicing the Public Debt: The Role of Expectations". *American Economic Review* 78 (4). Bruno, M. (1989) "Econometrics and the Design of Economic Reform." *Econometrica*, Vol. 57, No. 2.
[xxv] Bruno (1989), op.cit, p.3.
[xxvi] See, for example, Garcia, M. (2004) "Brazil in the 21st Century: How to Escape the High Interest Trap?" Rio de Janeiro: PUC, Texto para Discussão No. 466, or the more recent discussion about the post-crisis Eurozone: De Grauwe, P. (2011) "The Governance of a Fragile Eurozone." CEPS Working Document No. 346.
[xxvii] Banco Central do Brasil: Notas do COPOM, 153ª Reunião, Published on the website on September 9, 2010, Par. 19.
[xxviii] Comments on Andre Lara Rezende? The Fischer equation and causality interest rate – prices.
[xxix] Blanchard, O., G. Dell'Ariccia and P. Mauro (2010) "Rethinking Macroeconomic Policy." IMF Staff Position Note.
[xxx] Several econometric studies point to a break in the central bank's reaction function somewhere near the introduction of NEM. See Vieira da Cunha (2015) and the literature cited therein.
[xxxi] Blanchard, O. (2004). Fiscal Dominance and Inflation Targeting: Lessons from Brazil. Cambridge, MA, NATIONAL BUREAU OF ECONOMIC RESEARCH, Working Paper 10389.
[xxxii] Goldfajn, I. (2002). Há Razões para Duvidar de Que a Dívida Pública no Brasil é Sustentável? Brasília, DF, Notas Técnicas do Banco Central do Brasil Notas Técnicas do Banco Central do Brasil. See also, Goldfajn, I. and E. R. Guardia. (2003) Regras Fiscais e Sustentabilidade da Dívida no Brasil. Brasília, DF, Notas Técnicas do Banco Central do Brasil.
[xxxiii] See, among others: Bonomo, M., & Martins, B. (2016). The Impact of Government-Driven Loans in the Monetary Transmission Mechanism: what can we learn from firm-level data? Banco Central do Brasil, Texto para discussão nº 419. Takeda, T., Rocha, F., & Nakane, M. I. (2005). The reaction of bank lending to monetary policy in Brazil. Revista Brasileira de Economia, 59(1), 107-126. de Mello, L., & Pisu, M. (2010). The bank lending channel of monetary transmission in Brazil: A VECM approach. The Quarterly Review of Economics and Finance, 50(1), 50-60.
[xxxiv] Reference
[xxxv] DEPEC (2015) "Fatores condicionantes da evolução das operações compromissadas e eventos correlatos. " Nota DEPEC/BACEN.
[xxxvi] In the repo operation, the central bank receives the Treasury as collateral. Thus, it receives the interest due on this paper, usually of longer duration than the *compromissadas*. Because of this mismatch in duration, usually, the central bank would receive a higher rate than it paid. The procedure may be compared with the Fed's "operation twist." Only, the Fed buys and sells paper outright in the secondary market. For example, in September 2011, to lower long-term interest rates, the Fed sold short-term Treasuries and bought long, pressuring their yields downward.
[xxxvii] Reference to Stella, etc in Mendes
[xxxviii] For an exhaustive and excellent discussion of these issues, see: Mendes, M. (2015) "Lei 11.803/2008 e a Relação Financeira Tesouro – Banco Central" in,
[xxxix] Domestic not foreign debt
[xl] For a critique, see Willem Buiter, "The Fiscal Theory of the Price Level: A Critique." London: European Bank for Reconstruction and Development, July 2001.
[xli] Reference.
[xlii] In its analysis of the constitutional reform proposed by the interim Temer administration and sent to Congress in August, 2016, the Congressional Research Service forecasted primary deficits for the entire 2014-2021 period (0.3% of GDP in the last year from a peak 2.5% of GDP in 2016) with the gross debt reaching 95.1% of GDP in 2024. See: Consultoria de Orçamento e Fiscalização Financeira (CONOF): "IMPACTOS DO "NOVO REGIME FISCAL" -

SUBSÍDIOS À ANÁLISE DA PROPOSTA DE EMENDA À CONSTITUIÇÃO - PEC Nº 241/2016, ” Estudo Técnico n. º 12/2016, August 2016, Table 3.

[xliii] Explain why.

[xliv] On May 1st, 1943 Getúlio Vargas signed into law the *Consolidação das Leis do Trabalho* (CLT) creating the legal framework for the operation of formal labor markets, including the formation of compulsory, parallel employer and worker unions within a hierarchical corporatist structure presided by the Ministry of Labor, and instituting the regime of social security. The CLT is thought to be one of the foundational laws of the modern Brazilian state.

[xlv] Reference to Bacha, etc. Fiscal theory of monetary policy a-la Sims. ALRezende discussion. Loyo, etc.

BRAZIL: Main Economic indicators

	FHC-1	FHC-2	Lula-1	Lula-2	Dilma-1	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	1995-1998	1999-2002	2003-2006	2007-2010	2011-2014										
Real GDP growth (%) 1	2.5	2.3	3.5	4.6	2.4	6.1	5.1	-0.1	7.5	4.0	1.9	3.0	0.5	-3.8	-4.4
GDP (Index 1995=100) 1		111.7	125.9	149.6	171.1	141.4	148.7	148.5	159.6	166.0	169.2	174.3	175.1	168.5	163.5
GDP deflator 2/			9.0	7.7	7.9	6.4	8.8	7.3	8.4	8.3	7.9	7.5	7.8	7.9	8.8
Industrial production - 12moavg - eop (% Y/Y)	1.4	2.5	3.5	3.0	-0.7	5.9	3.1	-7.1	10.2	0.4	-2.3	2.1	-3.0	-8.2	-6.6
Unemployment rate - 12moavg - eop 3/			10.5	8.7	7.3	9.1	8.9	8.7	8.0	7.7	7.4	7.1	6.8	8.5	11.5
Employed workers' real income - 12moavg - eop (% YoY)			1.8	3.0	3.1	2.9	2.6	1.9	4.4	3.2	4.8	3.3	1.1	-0.3	-2.3
Real payroll - 12moavg - eop (% YoY) 4/			4.4	5.2	4.4	5.3	5.1	3.1	7.3	4.8	5.3	4.8	2.9	-0.2	-3.5
IPCA-IBGE - eop (%YoY) 5/	5.5	8.8	6.4	5.1	6.2	4.5	5.9	4.3	5.9	6.5	5.8	5.9	6.4	10.7	6.3
US$ - period average	1.04	2.23	2.65	1.88	2.03	1.95	1.84	1.99	1.76	1.67	1.95	2.16	2.35	3.33	3.49
US$ - eop (% YoY)	42.9	192.3	-39.5	-22.1	59.4	-17.2	31.9	-25.5	-4.3	12.6	9.0	14.6	13.4	47.0	-16.5
SELIC rate target - eop	29.00	25.00	13.25	10.75	11.75	11.25	13.75	8.75	10.75	11.00	7.25	10.00	11.75	14.25	13.75
SELIC effective rate - period average	34.10	20.09	18.50	11.05	9.81	11.98	12.35	10.06	9.80	11.66	8.53	8.18	10.86	13.37	14.01
Real SELIC effective rate - period average 6	21.88	10.45	11.38	5.63	3.48	7.10	6.26	5.39	3.75	4.85	2.54	2.23	4.28	2.46	7.48
Current account balance 12mo - eop (USD bn) 7	-26.8	-20.6	10.4	-33.1	-82.6	0.4	-30.6	-26.3	-75.8	-77.0	-74.2	-74.8	-104.2	-58.9	-23.5
Current account balance 12mo - eop (% GDP) 7	-3.2	-3.5	1.3	-1.7	-3.4	0.0	-1.9	-1.6	-3.5	-3.1	-3.3	-3.0	-4.3	-3.3	-1.3
Foreign exchange reserves - eop -liquidity (USD bn) 7	52.2	35.8	60.5	225.3	361.9	180.3	193.8	238.5	288.6	352.0	373.1	358.8	363.6	356.5	365.0
CDS (5yr/Brazil)- eop - (bp) 7		1,661	270	170	165	100	345	123	112	158	108	194	202	505	280
Primary budget balance - 12mo sum (% GDP)		3.2	3.5	2.8	1.6	3.2	3.3	1.9	2.6	2.9	2.2	1.7	-0.6	-1.9	-2.5
Nominal budget balance - 12mo sum (% GDP)		-4.4	-3.8	-2.6	-3.4	-2.7	-2.0	-3.2	-2.4	-2.5	-2.3	-3.0	-6.0	-10.2	-8.9
Gross public sector debt stock - eop (% GDP) 8				55.9	53.5	56.7	56.0	59.2	51.8	51.3	53.8	51.7	57.2	66.5	69.5
Public debt - domestic funding needs - 12mo sum (R$ bn) 8				170.6	291.1	222.1	159.0	265.8	35.7	213.6	326.6	142.3	481.9	582.8	462.3
Public debt - domestic funding needs - 12mo sum (% GDP) 8				5.5	5.7	8.2	5.1	8.0	0.9	4.9	6.8	2.7	8.5	9.9	7.3
Net new domestic public debt flow - 12mo sum (% GDP) 8				-0.5	0.3	1.6	-1.3	2.2	-4.7	-0.9	1.6	-2.5	3.0	2.3	-0.8
Domestic public debt interest payments - 12mo sum (% GDP)				6.1	5.4	6.6	6.5	5.7	5.6	5.8	5.2	5.1	5.5	7.6	8.1
Stock of credit to the private sector (% GDP)				40.3	50.0	34.7	39.7	42.6	44.1	46.5	49.3	51.0	53.1	54.5	49.3

Source: IBGE, BACEN, STN

1/ IBGE data, ref. 2010 w/indices 1995=100. Year-on-year growth rate of the four-quarter average during the period. For 2016 it is the average of the first 3 quarters.

2/ Implicit deflator; ratio between growth rates of GDP in current and constant prices; procedure and source as in note 1 above.

3/ PNAD definition

4/ RAIS data

5/ For Cardoso-1, 1996-1998

6/ The basic statistic is average monthly effective rate deflated by the month change in the IPCA index. The data refers to the period average of this statistic.

7/ For the Presidential periods, it is the average of the 4 eop observations.

8/ BCB - Indicadores econômicos consolidados, Table IV.26 - "Dívida bruta do Governo Geral – Fatores condicionantes – Fluxos mensais." For the Presidential periods, it is the average of the 4 years.