Fiscal consolidation and macroeconomic challenges in Brazil

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Abstract

This paper explores two important points regarding the Brazilian fiscal framework. The first part analyses the significant improvement of the fiscal stance in the last decade as the result of the promotion of fiscal discipline and debt management policies. This consolidation is argued to be one of the reasons why Brazil has not been subject to the same concerns about debt sustainability that have become a focal point in most developed economies. The second part studies how the coordination between monetary and fiscal policies is important in dealing with the issues that arose in the aftermath of the recent crisis. By using models simulated with Brazilian data, we show that the implications for inflation of implementing a fiscal retrenchment policy crucially depend on which instrument is being used and on the behaviour of monetary policy.

Keywords: Fiscal consolidation, fiscal policy, debt management, monetary policy, macroeconomic stabilization

JEL classification: E52, E62, E63

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1. Introduction

The financial crisis has highlighted the importance of coordination between monetary, macroprudential, and credit policies. Fiscal policy proved to be outstanding in tackling the urgent challenges that arose following the financial bump, attenuating the depth of the crisis and ensuring the resilience of the financial system. Indeed, governments of many developed countries[2] have used fiscal instruments to supply broad liquidity for firms, banks, and credit markets, while traditional fiscal policies have also been employed to stimulate the economic recovery. These actions helped reverse the recessionary process, improve financial conditions and contributed to the upturn in market confidence (IMF, 2009). Unfortunately, these measures are never without cost, and some countries built up such unsustainable public account imbalances that a structural solution is dramatically needed[3].

Acknowledged as the second stage of the financial crisis, the fiscal turmoil struck several developed countries, but Brazil has not undergone the same difficulties[4]. That can be explained by a virtuous combination of effective policy reactions during the crisis and strengthened fiscal conditions in the years preceding the crisis. Countercyclical policies were implemented immediately after the tightening of financial conditions[5]. Moreover, some targeted fiscal measures were undertaken in order to stimulate the recovery of aggregate supply[6]. Nevertheless, at the current phase of the international crisis, Brazil is required to demonstrate its strong commitment to the fiscal framework by fully meeting the primary surplus target.

The set of measures were successful in getting the economy out of the initial negative impact on GDP in the fourth quarter of 2008. Only two periods ahead, quarterly output started recovering towards pre-crisis growth rates[7]. Real interest rates dropped markedly, from a 13.75% yearly rate in September of 2008 to 8.5% in August of 2009. On the other hand, the consumer price index ended 2009 at 4.3%, below the 4.5% inflation target. However, there were signs of rising pressures on prices, and the interest rate started to suddenly increase in April 2010, after remaining steady for eight months.

Managing internal pressures on aggregate demand and, at the same time, recessionary conditions abroad leading to lower international interest rates, is complicated. Indeed,

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2 In fact, the United States, the Euro Zone, Japan, the United Kingdom and Canada undertook a series of initiatives to stabilize the financial system, such as capital injections, asset purchases, loans to financial firms, guarantees of financial assets and bank liabilities and deposit insurance, all of them with significant effects on public debt (IMF, 2009).

3 Between 2007 and 2010, the net public debt outstanding in terms of GDP increased sharply in many developed countries, for example, the United States (from 42.9% to 68.3%), Germany (50.2% – 57.6%), Japan (81.5% – 117.2%), the United Kingdom (38.2% – 67.7%), and France (59.5% – 76.6%). See IMF (2011).

4 The Brazilian net public debt decreased from 45.1% to 40.2% in percent of GDP between 2007 and 2010.

5 For example, monetary policy easing, reduction of reserve requirement rates for banks, increase in directed credit policies, supplying liquidity in foreign currencies, and a other policies were implemented between September 2008 and August 2009.

6 Taxes on industrial products (IPI) like vehicles, durable consumer goods, building materials, and capital goods were cut at the end of 2008. In turn, taxes on financial operations (IOF) for lending to households also dropped.

7 Quarterly GDP fell by 4.20% in the last quarter of 2008, and the drop in investment (-10.18%) led the results. In the first quarter of 2009, government consumption reacted by increasing 3.96%, in comparison to the fall (-3.66%) in the previous quarter. The effective countercyclical measures were important to reverse local expectations in spite of a volatile scenario abroad, and investment leapt to 5.99% in the second quarter of 2009, with high rates observed in following quarters as well. Likewise, output grew up by 2.01% in the second quarter of 2009.

emerging markets around the world showing strong growth and financial resilience share the same situation in which monetary policy could lead to higher interest rate spreads and attract large global capital inflows. In order to deal with this dilemma, Brazil adopted a series of policies that included strengthening the macroprudential framework to ensure that financial risks are contained, allowing appreciation of the exchange rate and accumulation of external reserves and adjusting the mix of monetary and fiscal policy in order to assure a sustained pace of demand growth and to keep inflation under control and converging towards the target.

Hence, there are two very interesting points to explore with regard to the Brazilian fiscal framework. The first is the fiscal consolidation that has been ongoing since 1999, which can explain to a large degree why Brazil has not been subject to the same concerns about debt sustainability that are currently a focal point in most developed economies. The second issue is the importance of coordination between fiscal and monetary policy to deal with the challenges of the present conjuncture. In fact, simulations performed by models estimated with Brazilian data show a tighter fiscal policy could lead to meaningful decreases in inflationary pressures, even when the effort is short-lived, and that a long-lasting policy could imply significant structural changes in the long run.

2. The Brazilian fiscal framework

Brazil's recent economic policy can be described by a framework based on three main guidelines implemented in 1999: a floating exchange rate, an inflation target regime and fiscal austerity. In that year, targets for the fiscal surplus as a ratio of GDP (on average above 3%) were announced, and these have been an important guideline for policy since then. As shown in Graph 1, in the first year there was already a significant increase of the primary surplus to 2.92% after being null in 1998. The following year, the Fiscal Responsibility Law (FRL) was enacted to strengthen fiscal institutions and establish a broad framework of fiscal planning, execution, and transparency at the federal, state, and municipal levels. It reinforced the goal of promoting fiscal discipline and has helped to obtain consistent surpluses, even during the crisis.

The fiscal consolidation process has been the result not only of the implementation of the FRL and of meeting the primary surplus target, but also of the efforts made by the Central Bank of Brazil (BCB) and the Treasury Department regarding the management of public debt[8]. The government has been working to promote fiscal discipline meant to reduce indebtedness and is also following a set of guidelines to enhance the debt profile[9]. These include the reduction of short-term debt and lengthening of the average debt maturity, progressive replacement of overnight rate-indexed and dollar-indexed securities by fixed rate and inflation-indexed securities, the expansion and diversification of the investor base, and the stimulation of the secondary market for public debt.

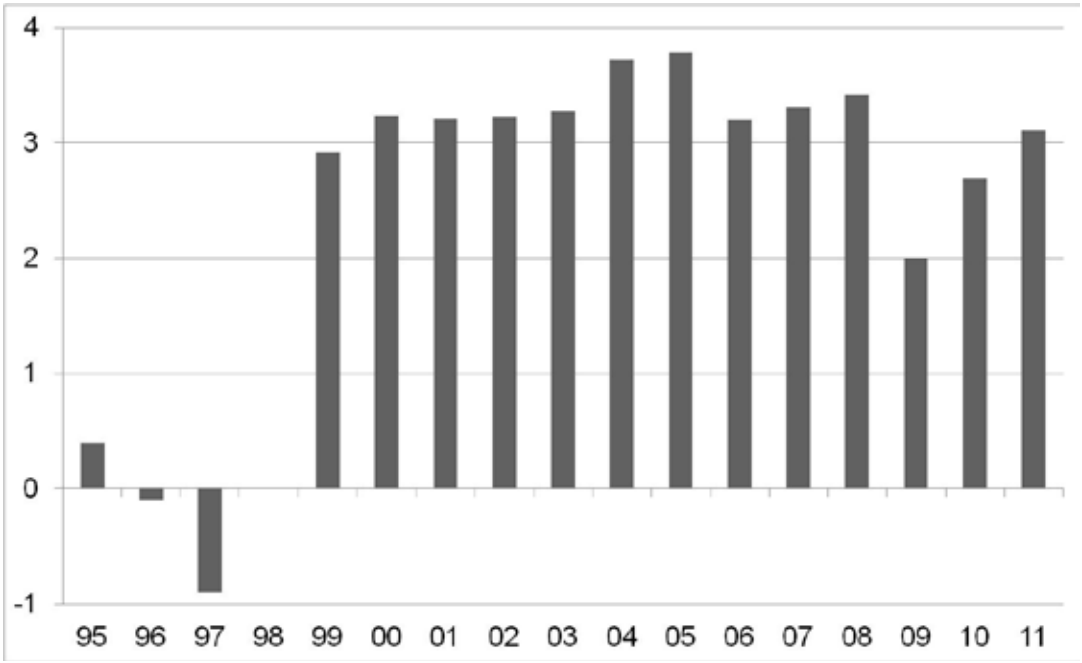
[8] Turner (2002) argues that an important reason for fostering debt markets is that such markets can contribute to the operation of monetary policy. The author points out how essential for the smooth transmission of policy this market is. Besides, the long-term market also gives relevant information about expectations of likely macroeconomic developments and about market reactions to monetary policy actions.

[9] These improvements are a trend observed in most EMEs, as pointed out in the background paper "Developments of domestic government bond markets in EMEs and their implications".

Graph 1

Primary surplus

As a percentage of nominal GDP



Source: BCB.

The set of fiscal measures[10] adopted has proven to be very effective in helping the government move towards these goals. Graph 2 shows the notable decrease in the net debt-to-output ratio since 2001. In 2002, in the middle of political turmoil, with significant currency depreciation, the debt-to-GDP ratio peaked at 62.86%. Since then, it has shown a downward trend, especially since mid-2006 when the country started accumulating external surpluses. In September 2011, the ratio reached 36.49%, the lowest value in the observed series.

The latest quarterly Inflation Report (BCB, 2011a) presents projections for selected fiscal variables, as in Table 1.

Table 1

Estimates of fiscal variables (% GDP)[1]

	PSND	GGGD	Nominal deficit	Nominal interest
2012	35.7	51.9	1.2	4.3
2013	33.8	48.8	1.1	4.2
2014	31.3	45.7	0.5	3.6
2015	28.9	43.0	0.3	3.4
2016	26.1	40.4	–0.1	3.0

[1] Consider the primary surplus expected in Lei de Diretrizes Orçamentárias (Budget Guidelines Law) for 2012, and 3.1% of GDP for the other years.

Source: Inflation Report (BCB, 2011a).

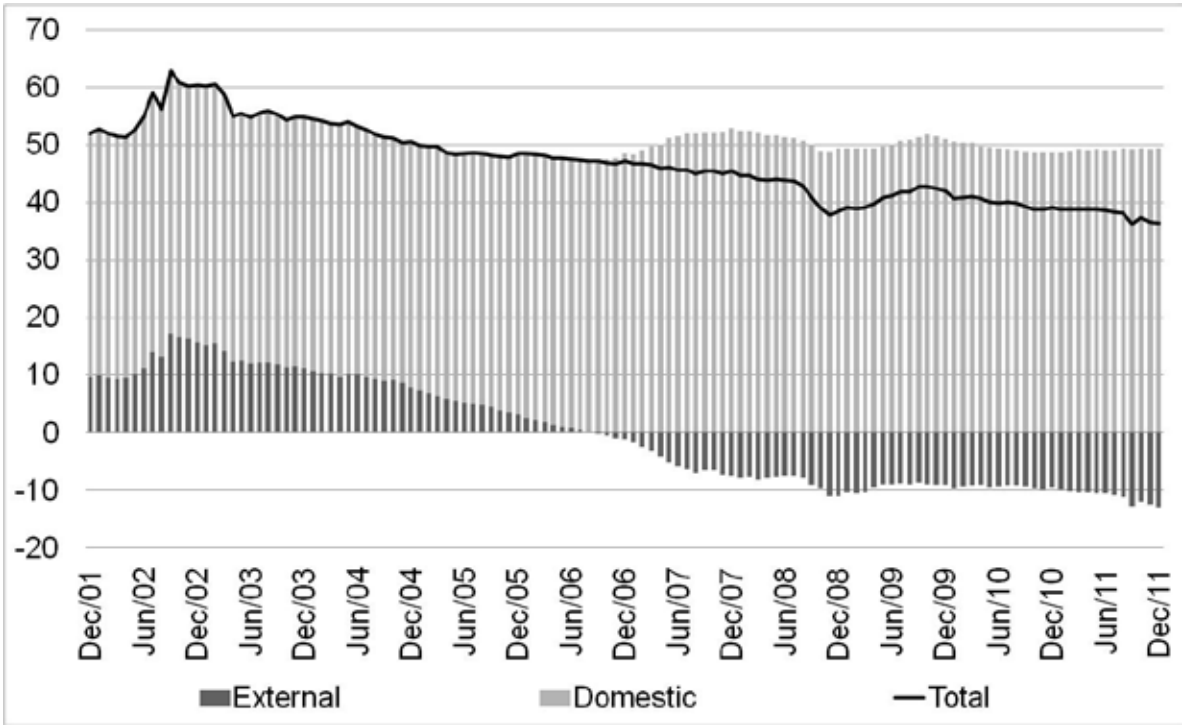
[10] See Figueiredo *et al.* (2002) for a description of the measures implemented in order to fulfill these guidelines.

They were formulated assuming the primary surplus target is met and using market perspectives for the main indexation indicators and projections for output presented in the same report. The public sector net debt (PSND) and general government gross debt (GGGD) are expected to continue their descending trajectory until 2016. The same is expected to happen to the nominal deficit and interest payments.

Graph 2

Public sector net debt

As a percentage of nominal GDP



Source: BCB.

Besides promoting debt reduction, fiscal consolidation has also achieved very positive results regarding the guidelines established to improve the domestic debt profile.

With regard to the composition of domestic debt outstanding, the guideline to increase the share of fixed rate securities and simultaneously reduce the share of dollar- and overnight rate-indexed securities has been clearly followed in the period, as shown in Graph 3. Although still high, the proportion of securities indexed to the overnight interest rate (Selic) dropped from 54.4% in December 2001 to 26.2% in December 2011. This was an important step towards fostering the efficacy of monetary policy, since this sort of security exacerbates the wealth effect generated by increases in the nominal interest rate.

Over the same period, the share of indexed securities dropped from 29.5% to 0.5%, reducing the exposure of domestic debt to exchange rate volatility. Besides the reduction in new issuance, the appreciation of the exchange rate[11] has also contributed to the reduction of the share of this type of security. Meanwhile, fixed rate and inflation-indexed securities significantly increased their share, from, respectively, 8.1% and 7.2% in December 2001 to

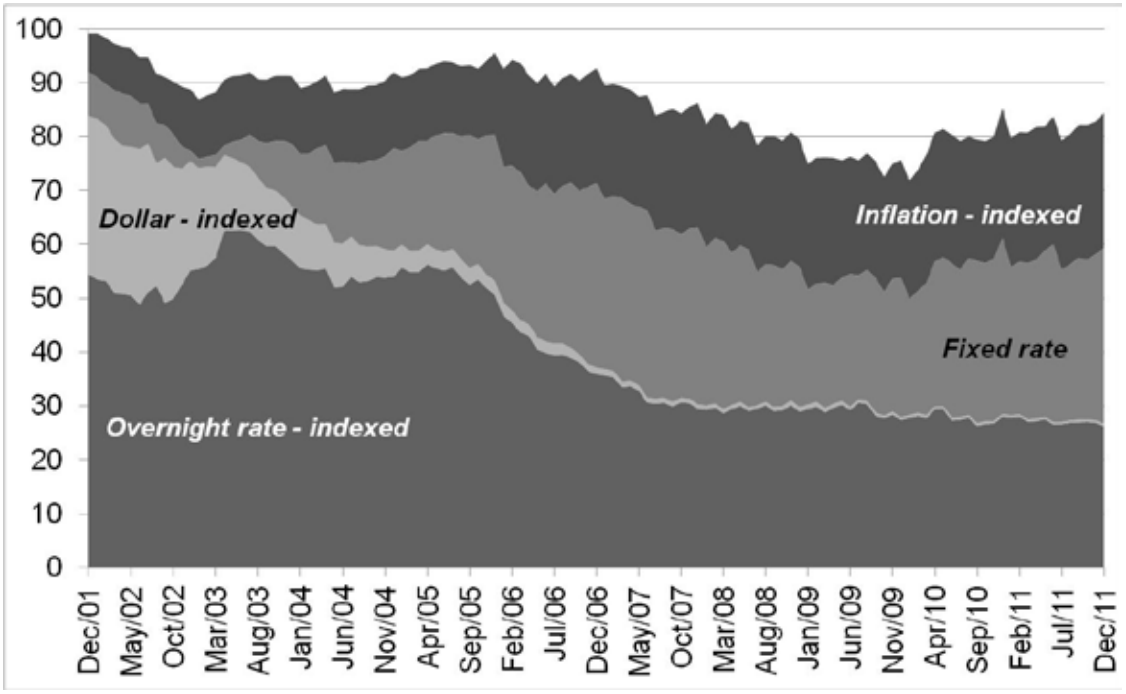
[11] It dropped from a peak of R$3.89/US$ in September 2002 to R$1.74/US$ in December 2011.

32.6% and 25.2% in December 2011. One aspect of economic policy that certainly contributed to the attractiveness of fixed rate securities was the downward trend of the nominal interest rate observed in recent years[12].

Graph 3

Composition of public debt outstanding

As a percentage of total debt



Source: BCB.

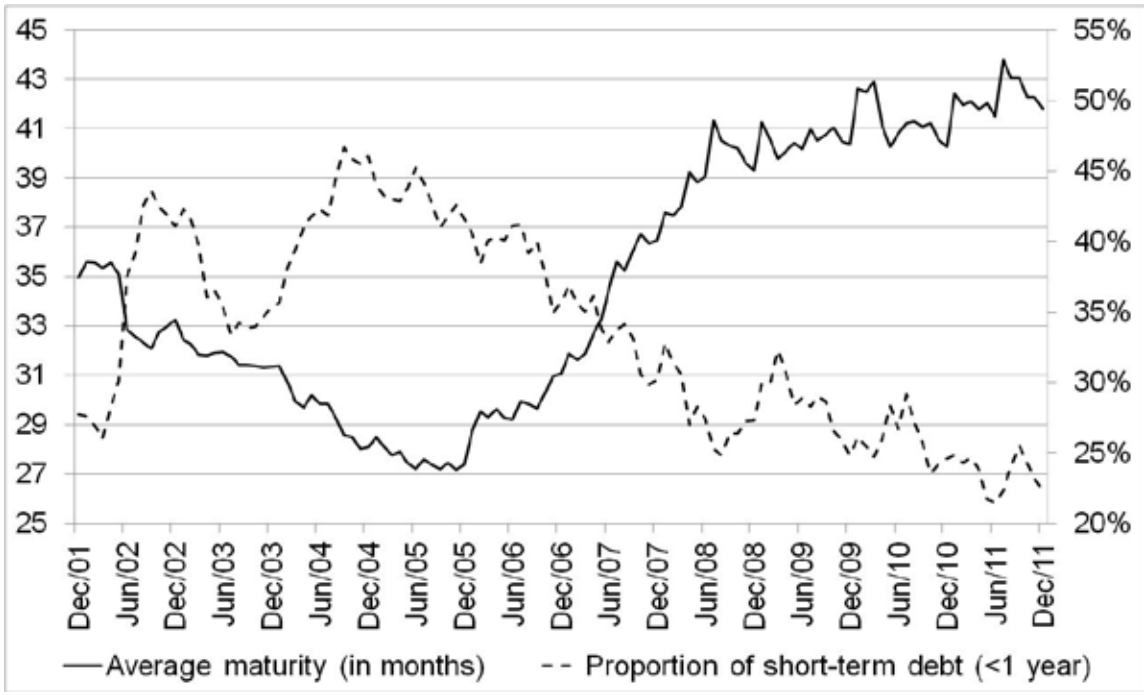
The average maturity and proportion of debt expiring in less than 12 months in total debt outstanding are presented in Graph 4. The average maturity (left axis) decreased until 2005, reaching a trough of 27 months in November. Since then, it has lengthened significantly, to 42 months in December 2011. At the same time, moving in the opposite direction, the proportion of short-term debt (right axis) was very volatile early in the period, but since mid-2004 has significantly improved, staying on average below 25% in 2011.

Another improvement was the expansion and diversification of the investor base, as shown in Graph 6. Data are not available prior to January 2007, but from then a prominent increase in holdings by foreign residents is observed. They jumped from 1.6% at the beginning of the series to 11.3% in December 2011. One aspect that certainly contributed to attracting foreign investment in domestic debt was the "investment grade" rating granted by Standard & Poor's in April 2008, followed by Fitch, which granted the same rating to Brazil the following month. In 2009, Moody's also raised Brazil's rating to the "investment grade" category. In 2011, all three agencies increased the rating by one more level.

[12] In December 2001 the Selic rate was at 19%; it reached a peak of 26.5% in June 2003, but has been falling since then, reaching 11% in December 2011.

Graph 4

Average maturity and proportion of short-term debt in public debt outstanding

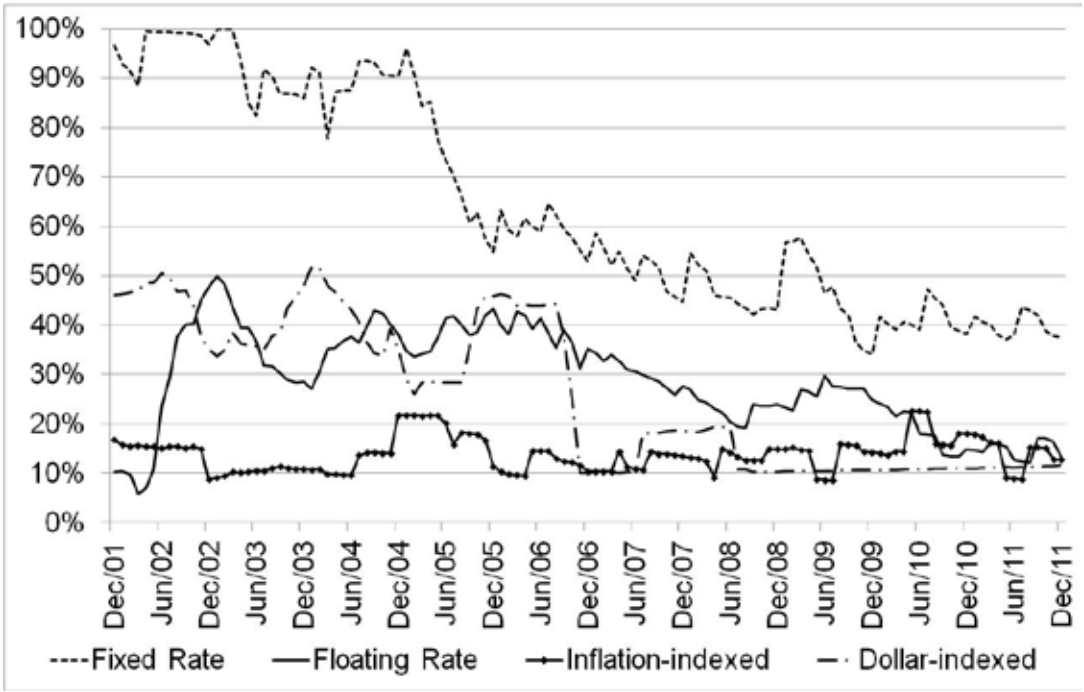


Source: BCB.

Graph 5

Short-term debt by indexation

As a percentage of total debt by indexation

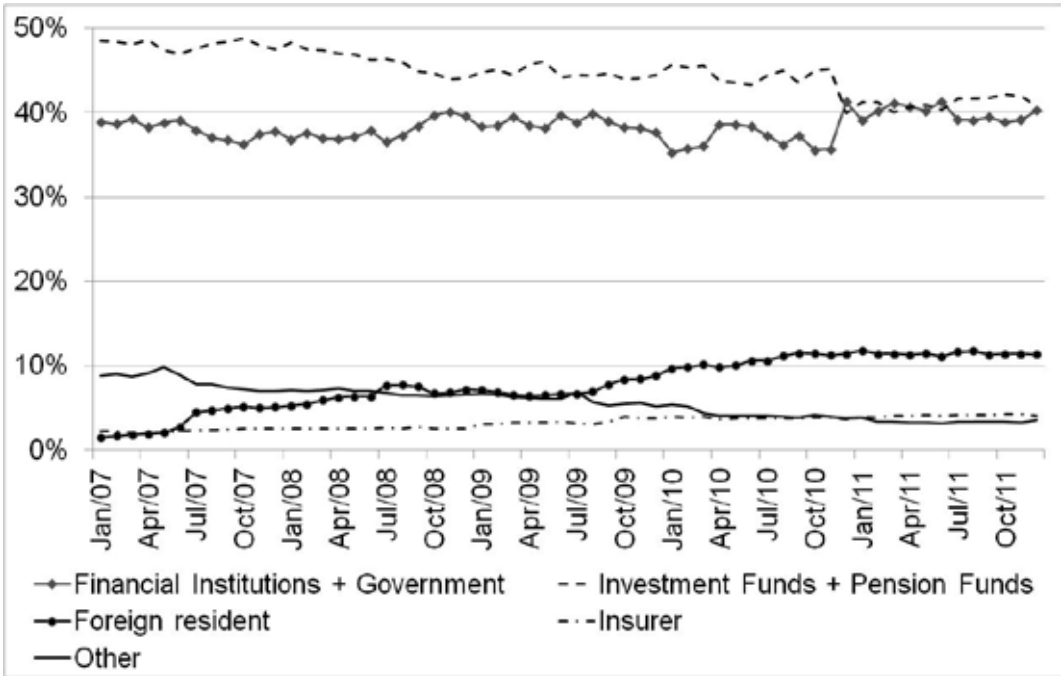


Source: BCB.

Graph 6

Holdings of general government debt

As a percentage of total debt



Source: Tesouro Nacional.

Obs.: Data for holdings by the government are available only after January 2011. Prior to that, the stocks were allocated between financial institutions and investment funds.

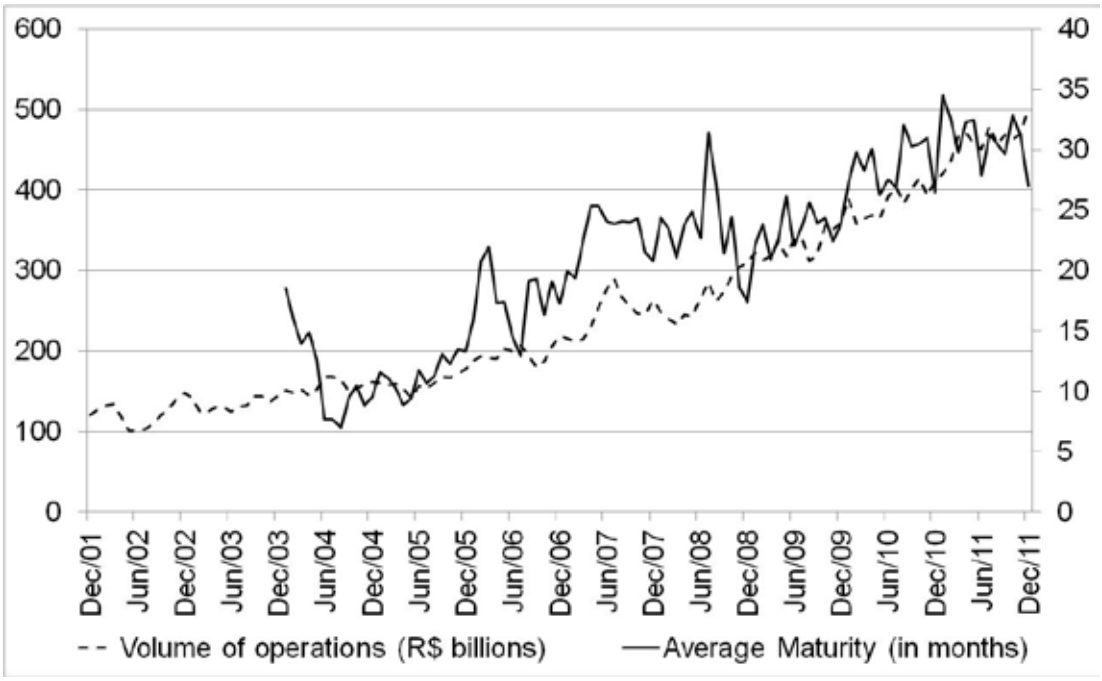
Changes were also observed regarding fostering the trading of domestic securities on the secondary market. The volume of operations (Graph 7, left axis) presented a steep upward trend over the past decade, with a significant boost after the implementation of the new payment system in 2002. The ratio between the volume of operations and outstanding debt jumped from an average of 19% in 2000 to 27% in 2011. The average maturity of operations[13] (Graph 7, right axis) also increased following the improvement of liquidity in the secondary market.

This outlook shows how Brazil's debt management policy advanced in recent years, working towards the fulfillment of the guidelines established in the early 2000s. Since 2001, the Treasury Department has been publishing an annual borrowing plan ("Plano Anual de Financiamento" – PAF) for debt management, and the criteria analyzed above have been maintained as the main goals for domestic debt policy. The mission established in the plan is to ensure that the government's financial needs and payment obligations are met at the minimum possible cost in the medium and long term, while keeping risks at a prudent level, and to contribute to better operation of the debt market (Tesouro Nacional, 2011).

[13] Data only available after January 2004.

Graph7

Volume and average maturity of operations in the secondary market for domestic securities



Source: BCB.

3. Effects of fiscal policy on inflation and output

Beyond the structural efforts of fiscal consolidation, Brazil has also faced challenges in terms of fiscal policy. Macroeconomic conditions have created a tension between foreign capital inflows and domestic factors, like high domestic growth. Specifically, capital inflows are quickly increasing the foreign capital share in bank funding sources, enabling small and medium-sized banks to scale their credit supply, and posing important issues about the stability of the financial system.

Besides the medium-term concerns about capital inflows, the rapid expansion of credit in Brazil also has significant effects on inflation today. Indeed, excess credit supply has driven lending rates down and lengthened the maturities of credit contracts, despite the lack of reasonable improvements in borrowers' profiles. In other words, current credit expansion generated by large capital inflows has boosted aggregate demand and amplified pressures on inflation.

For that reason, the BCB has implemented several macroprudential policies to contain the unsustainable credit expansion. But the current general scenario requires a vast and coordinated series of measures to decrease inflationary pressures and, at the same time, sustain the economic growth and prevent the formation of asset price bubbles. In this context, fiscal policy has a lot to contribute.

In order to analyze the effects of fiscal policy on inflation and output in quantitative terms, the BCB has been performing various simulations using some of the analytical models available. Two recent editions of the quarterly Inflation Report – March and December, 2011 – came up with noteworthy results.

In March's edition (BCB, 2011b), simulations were performed by running a medium-size semi-structural model[14] estimated with Brazilian data. The fiscal tightening is exogenous, sized as equivalent to 1% of GDP, and lasts for four consecutive quarters. Two scenarios for monetary policy were considered: non-accommodative, in which the interest rate regularly follows the estimated Taylor rule reactions, and accommodative, in which the interest rate remains constant for four quarters but reacts according to the Taylor rule afterwards.

The results show that a contractionary fiscal impact can cause sudden, significant, and longstanding effects on inflation. The lack of action of an accommodative monetary policy can notably amplify the results since the nominal interest rate is unable to respond to the deflationary pressures. The transmission mechanism considered by the model is essentially the direct aggregate demand reduction, which is amplified if the interest rate is not allowed to go down to stabilize the economy.

A more structural analysis regarding the transmission channels can be addressed by performing simulations in medium-sized dynamic stochastic general equilibrium (DSGE) models. The standard model used by the BCB for forecasting and policy analysis is known as SAMBA[15]. Besides enabling the same scenarios, the structural model allows us to distinguish clearly between government consumption and public tax revenue changes, although the impact on the primary surplus is the same. The December Inflation Report (BCB, 2011c) gave those results.

In line with the results of the semi-structural model, in SAMBA a tightening of fiscal policy causes an initial and consistent drop in inflation whose effects last for several periods. The non-accommodative monetary policy also shows lower impacts in comparison to the reactive interest rate rule scenario. Contraction of public spending is interpreted as a temporary movement of the primary surplus target, which leads to an immediate reduction in demand for consumer goods and a direct fall in aggregate demand. So, second-order effects in the adjustment dynamic take place following the contraction in demand, such as downfalls in labor, wages, and rule-of-thumb[16] households' consumption. Reduction of production inputs leads to lower marginal cost, which explains much of the fall in inflation.

By raising taxes equivalently instead of cutting public spending, the fiscal authority will face other challenges in terms of timing and magnitude because the transmission channels involved are quite different. For instance, an increase in the rule-of-thumb households' tax rate produces an immediate reduction in demand, but the products purchased by households consist of both domestic and foreign goods, whereas government consumption is based on domestic goods only. The initial contractionary impacts on consumption[17] thus partially spread abroad, which reduces the second-order effects passing through the supply side. Not surprisingly, marginal cost and inflation fall less than when the fiscal policy is built on spending cuts.

Graph 8 compares the magnitudes of the effects on inflation of those shocks on both sides of government balance sheet. Although the timing of transmission seems quite similar in all scenarios, with maximum effects taking place between the fourth and fifth quarters after the

[14] See Minella and Souza-Sobrinho (2009) for further details.

[15] Stochastic Analytical Model with a Bayesian Approach; see Castro *et al.* (2011). The model was developed and estimated by the BCB.

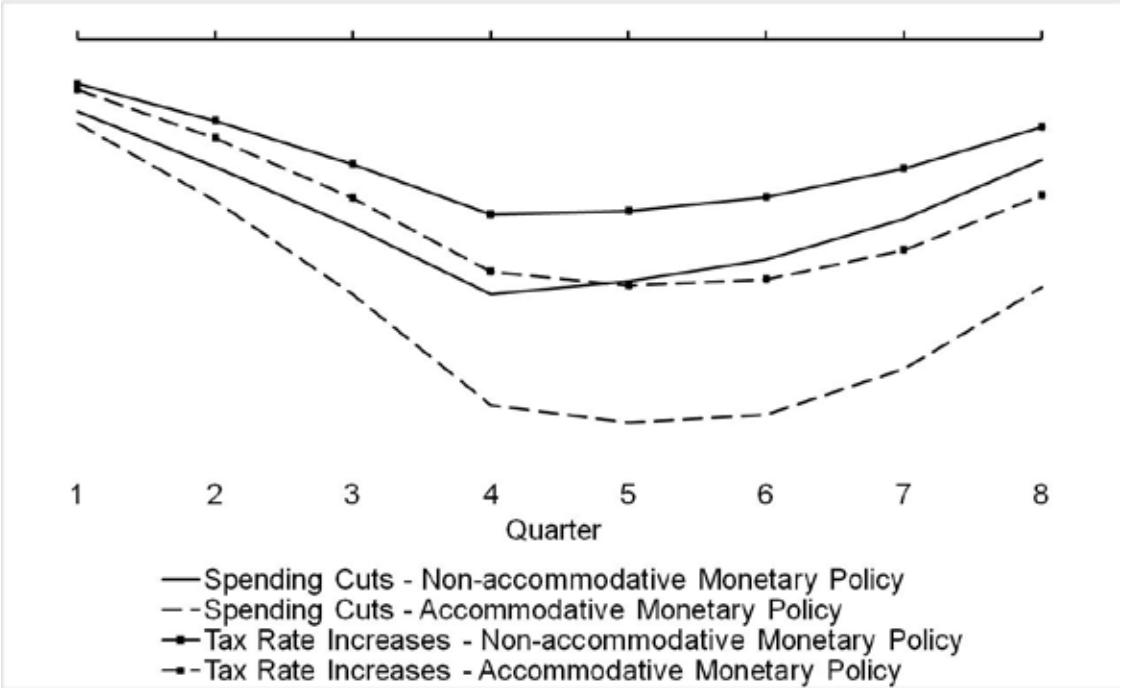
[16] Rule-of-thumb households (equivalently, non-Ricardian or hand-to-mouth households) are agents which face technological restrictions to transfer resources from one period to the next. Models usually have a certain fraction of non-Ricardian households as a kind of abstraction to simulate actual constraints on a fraction of consumers. In SAMBA, this group consumes all disposable income each period.

[17] The current version of SAMBA does not have as comprehensive an approach for taxation as some macro models focused on fiscal issues. Therefore, tax rate increases will primarily impact only household consumption.

impact, the fall in inflation caused by public spending cuts is more intense than when increases in tax rates are used as a fiscal instrument. For purposes of comparison, the overall effect on inflation of cuts in government spending is, on average, 1.6 larger than an equally sized impulse driven by increasing public revenue.

Graph 8

Effects on inflation of a tightening in fiscal policy equivalent to 1% of GPD and lasting for 4 quarters



Source: BCB.

The lower effects of incentives on taxation should be considered carefully. Tax revenues are collected by wage taxes that directly impact only non-Ricardian households' consumption. Traditional distorting mechanisms like taxation on investment and production are not factored into the model, nor are public investment and other aspects of government spending. In theory, this could explain why the effects of tax increases are smaller than expected.

Effects on output were also addressed. The public spending multiplier, measured by SAMBA, is around 1.2 under a non-accommodative monetary policy, and about 0.9 if calculated with the semi-structural model. In turn, the tax revenues multiplier is 0.9.

Results yielded by both the semi-structural and DSGE models used by the BCB are closely in line with the theoretical literature and the practical experience in central banks. Coenen *et al.* (2010) study fiscal multipliers and effects on inflation of several fiscal instruments by performing simulations in DSGE models used by seven international institutions, such as the Federal Reserve Board, European Central Bank, Bank of Canada, European Commission, OECD, and IMF. The effects on inflation depend to a great extent on what policy instrument is used. However, it is clear that a non-accommodative monetary policy always generates lower responses, because accommodative monetary policy allows real interest rates to fall further, leading to greater responses in consumption and investment.

4. Final remarks

Fiscal policy has an important role in the policy balance. Indeed, both public revenue and government spending can be effectively used to tighten aggregate demand, although their different transmission channels and total effects in the economy must be taken into account. The government's significant direct participation in the credit markets and historical role as an investment catalyst in Brazil are two factors that demonstrate the importance of consistent use of fiscal instruments as tools to help achieve macroeconomic stability.

Brazil's fiscal consolidation has demonstrated the effectiveness of the long-term framework, as seen during the financial crisis. Notwithstanding, a more sustained strengthening of fiscal conditions is needed for the Brazilian economy to reach a new baseline for monetary and fiscal frameworks in the medium term, by enhancing the sustainability of the public debt, the investment-savings dynamic, and the broad mechanisms of price setting.

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