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Public Sector Debt

The Walking Dead (Part III): The Equilibrium Primary Surplus

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- **We believe that the recent deterioration in overall macroeconomic conditions, particularly the substantial worsening of debt dynamics, implies that the primary surplus required to stabilize the public sector debt-to-GDP ratio may be far away from the 2% of GDP suggested by policymakers at the beginning of this year.**
- **According to our estimates, this ratio will be probably higher than 4% after 2017, when we forecast that the general government public sector debt will surpass 80% of GDP, and net debt will likely reach 50% of GDP.**
- **Based on these departing points for debt, and on assumptions for potential GDP growth and real interest rates of 2% and 7.5%, respectively, we estimate the equilibrium primary surplus to be 3.3% of GDP for gross debt and 5.1% for net debt.**
- **Therefore, in our view, any realistic attempt to restore fiscal confidence requires an adjustment of at least 5% of GDP in terms of the primary surplus.**
- **For such fiscal consolidation, we believe that an additional tax burden will probably be unavoidable, though useless without aggressive reforms aimed at containing the structural pace of spending growth (see our August 6, 2015 report, *The Fiscal Maze I: Origins*).**
- **These reforms necessarily include the social security system and indexation mechanisms related to the minimum wage.**
- **An important contributor to an adverse dynamic for net debt to GDP relates to bank lending at TJLP rates. Suggesting, in our view, that another way of mitigating this problem should include further narrowing between the Selic and the TJLP.**

Primary Surplus (% of GDP) Required to Stabilize General Government Gross Debt to GDP ratio at 80% and Consolidated Public Sector Net Debt to GDP ratio at 50%, respectively, from 2017 onwards

		Annual GDP Growth		
		1%	2%	3%
real	10.0%	5.3% - 7.0%	4.5% - 6.5%	3.7% - 6.0%
"ex post"	7.5%	4.1% - 5.6%	3.3% - 5.1%	2.5% - 4.6%
interest	5.0%	2.9% - 4.1%	2.1% - 3.6%	1.3% - 3.1%
rates	2.5%	1.7% - 2.6%	0.9% - 2.1%	0.1% - 1.6%

Source: Santander estimates based on BCB data.

Introduction

Our November 25, 2015 report, *The Walking Dead (Part I): Useful Alternative Fiscal Indicators and Debt Tutorial*, scrutinized debt-to-GDP dynamics.

In our later December 1 report, *The Walking Dead (Part II): How High Will Public Sector Debt Go?*, we incorporated our macro scenario into the model in order to develop forecasts for the next four years. We concluded that without severe fiscal measures, general government gross debt would likely increase from 66% of GDP (as of September 2015) to 75% at year-end 2016 and 90% in 2019. Net debt could, by the same approach and hypothesis, go as high as 43% in 2016 and 60% before 2020, according to our calculations.

We note that those trajectories depend upon variables that cannot be directly controlled by policymakers — such as GDP growth and the cost of debt (although there are still those who believe that the public sector can control its own borrowing costs). The recent increasing trend in the debt-to-GDP ratio indicates, in our view, that the current primary surplus is well below its long-term equilibrium. And by the magnitude of expansion in the most recent years, it is clear to us that the primary surplus is actually very far from the level that would be compatible with stable debt.

In this piece, we estimate the equilibrium primary surplus and its main drivers. Our key takeaway: we believe that the equilibrium primary surplus, probably around 2% of the GDP by the end of 2014, will be no lower than 4% of the GDP at the end of 2017. This difference is explained by higher real interest rates and debt in the near future — higher than those prevailing one year ago.

The Approach

As addressed in previous *Walking Dead* publications, it's easy to access debt dynamics by the usual formula:

$d(D) = (i - y)D - pr + Aj$

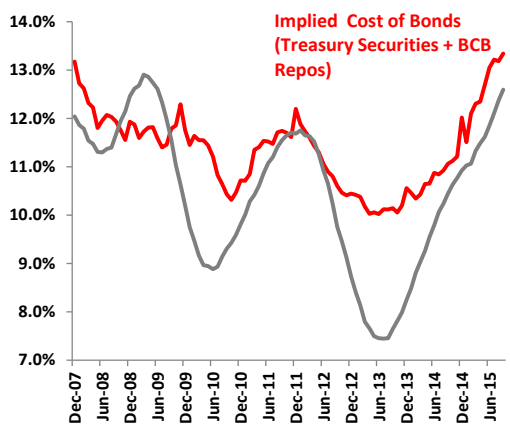
where d(D) is the variation of debt (D), r is the implied cost of debt[1] (in real terms, deduced by inflation), g is real GDP growth, pr is the primary balance and Aj is the exchange rate adjustment of public sector assets and liabilities and other adjustments (such as the incorporation of unrecognized debt or proceeds of privatizations not accounted in the primary surplus).

Assuming Aj = 0 in the long term (if the exchange rate variation is equal to the GDP deflator), the primary surplus consistent with stable debt is:

$pr = (r - g)D$

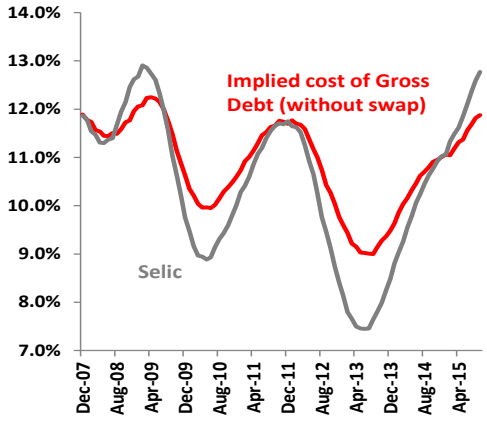
In practical terms, the most difficult challenge here is to come up with a good estimate for the cost of debt as a function of relevant market variables (Selic, exchange rate, TJLP, Treasury yields…). One alternative is to apply an econometric model relating the implied cost of debt to those variables.

Implied Cost of Bonds (Treasury Securities + BCB Repos) and Selic (12 months)



Source: Santander estimates based on BCB data.

Gross Debt Implied Cost and Selic (% 12 months)



Source: Santander estimates based on BCB data.

[1] It incorporates the impact of exchange rate variations on the stock of swaps, but not the FX effect on external debt and reserves, which are considered separately in Aj.

In our Debt Tutorial (*Walking Dead I*), we proposed a different approach, which consists of relating the Selic only to the cost of debt related to Treasury securities and BCB repos. The cost of other assets and liabilities would be defined "ad hoc": the TJLP as the yield of Brazilian Treasury assets denominated in local currency, zero for the cost of the monetary base, the Selic as defining the yield of financial institutions' deposits at the BCB, the exchange rate variation plus local and external interest rate differential as the cost of swaps, two-year Treasury yields on international reserves and the same measure, with a country risk premium for external debt.

Previous charts show a close relationship between the Selic and the implied cost of Bonds+Repos and the implied cost of gross debt.

Note that the variation of implied cost of debt is much lower than the variation of the Selic, which makes sense, considering that a substantial share of the debt is settled at fixed rates or indexed to inflation. The close relationship between our measures and the base rate also seems to reinforce the "ad hoc" assumptions we made to other assets and liabilities make sense.

The next step would be to make assumptions for market variables and economic growth and estimate debt dynamics. For most financial markets, we will rely on the same set of assumptions used in *Walking Dead II* (see our reasoning and some illustrations in the Appendix, at the end of this piece). For the sake of this exercise, we are going to focus on growth and the Selic rate.

Primary Surplus Equilibrium from 2014

Assuming potential GDP growth of 2% per year, a stable exchange rate in real terms and departing from debt levels and implied costs at the end of 2014, we have:

Nominal Selic: 11.25%

Ex post real Selic: 4.75%

Implied cost of Gross Debt: 4.5% (in real terms)

Implied cost of net debt (ex swaps): 10.2% (in real terms)

Therefore,

Gross Debt Equilibrium Primary Surplus: 1.5%

Net Debt Equilibrium Primary Surplus: 2.8%

Our estimates seem to be in line with the official reasoning, in the beginning of 2015, that a primary surplus of 2% of the GDP would be pursued in 2016, and would probably be enough to stabilize gross debt. In terms of net debt, although 2% seemed insufficient, a resulting upward trend would be moderate, from a historically low level and therefore not a major concern.

Primary Surplus Equilibrium from 2017

The following table summarizes the outcome of our model for different assumptions of GDP growth and ex-post Selic rate, departing from our estimated levels for general government gross debt (80%) and net consolidated public sector debt (50%).

Equilibrium Primary Surplus from Dec 2017

For Gross Debt at 80%

		GDP Growth		
		1.0%	**2.0%**	**3.0%**
real	**10.0%**	5.3%	4.5%	3.7%
"ex post"	**7.5%**	4.1%	3.3%	2.5%
interest	**5.0%**	2.9%	2.1%	1.3%
rates	**2.5%**	1.7%	0.9%	0.1%

Source: Santander estimates based on BCB data.

For Net Debt at 50%

		GDP Growth		
		1.0%	**2.0%**	**3.0%**
real	**10.0%**	7.0%	6.5%	6.0%
"ex post"	**7.5%**	5.6%	5.1%	4.6%
interest	**5.0%**	4.1%	3.6%	3.1%
rates	**2.5%**	2.6%	2.1%	1.6%

Source: Santander estimates based on BCB data.

Our preferred combination of variables is highlighted in the tables above. We are assuming the same "ad hoc" potential GDP growth of 2% but with higher real long-term real interest rates to reflect the fact that Brazilian risk premiums should be higher in this much worse state of fiscal accounts, as well as due to unanchored inflation.

According to our estimates, equilibrium primary surplus for net consolidated public sector debt will likely increase from 2.8% to 5.1% of GDP from 2014 to 2017.

As for general government gross debt, the level of the primary surplus compatible with stability is probably going to migrate from 1.5% to 3.3% of GDP in the same period.

The straightforward conclusion is that bringing the primary surplus from the current -0.7% of GDP (as of October 2015) to 2%, apart from being an almost impossible task considering the current political environment and the intensity of the recession, is far from enough to stabilize debt and provide substantial relief to the market.

Any realistic attempt to restore fiscal confidence requires an adjustment of at least 5% of GDP in terms of the primary surplus. For such fiscal consolidation, additional tax burden will probably be unavoidable, in our view, but it will be useless without aggressive reforms aimed at containing the structural pace of spending growth (see *The Fiscal Maze I: Origins*, published August 6, 2015). Those reforms necessarily include the social security system and indexation mechanisms related to the minimum wage.

Different Dynamics for Net and Gross Debt

Although we believe that it is easy to understand why the equilibrium primary surplus is different for gross and net debt, the magnitude may be seen as a surprise. This is due to the substantial distance between the yields of assets and liabilities, which is expected to persist. The following chart illustrates separate estimates for the implied cost of debt and liabilities.

This difference is mostly attributable to our assumption that assets tend to be mostly related to the TJLP and international interest rates, while liabilities are closely linked to the Selic.

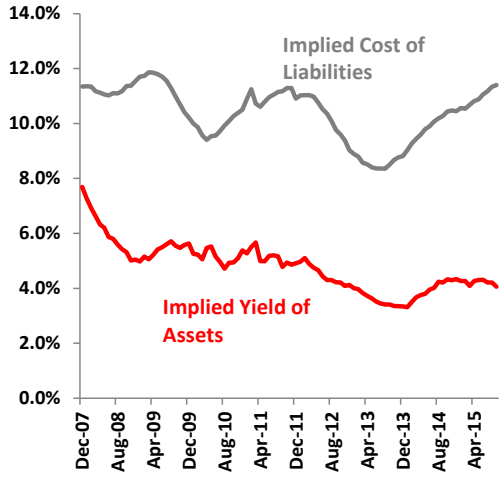
And even more important is the fact that asset yields are probably also below nominal GDP growth, meaning net debt dynamics directly incorporate substantial losses resulting from holding assets, which are not included in gross debt dynamics.

About these losses:
1) They are mostly related to reserves, which should be seen as a cost of an insurance (we estimate this cost to have been around 1.5% of GDP between 2010 and 2014).

2) The recent currency correction has substantially increased the stock of reserves measured in BRL. This has been positive in terms of preventing net debt from increasing, but it is negative for future dynamics, as it implies greater losses related to holding assets with lower yields than nominal GDP.

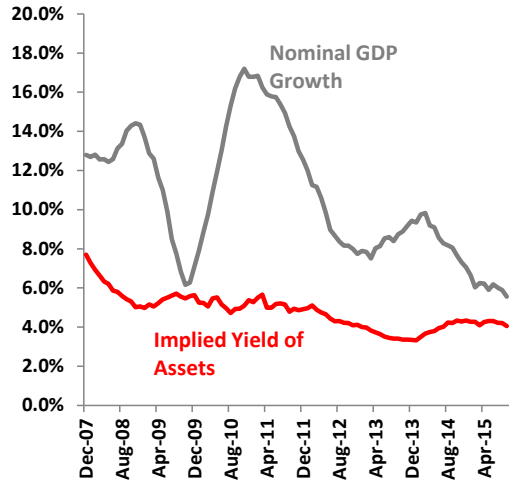
3) An important share of these losses is related to bank lending at TJLP rates (in our view, the cost of this subsidy may not be far from 0.5% of GDP per year). This means an alternative way of mitigating adverse net debt to GDP dynamics should include further reduction on the difference between the Selic and the TJLP.

Implied Costs of Assets and Liabilities (% in 12 months) (Excluding the Impact of FX Variations)



Source: Santander estimates based on BCB data.

Implied Yield of Assets (Excluding the impact of FX Variations) and Nominal GDP (% in 12 months)



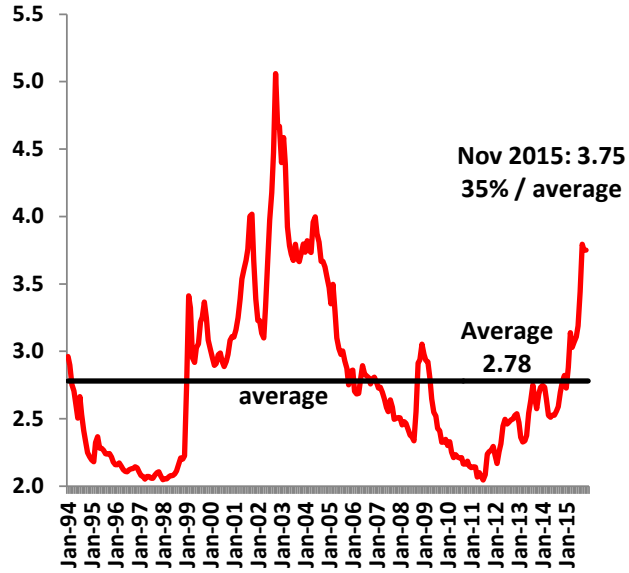
Source: Santander estimates based on BCB data.

Appendix: Assumptions – Base Case

1) We believe that, in real terms, the Brazilian **exchange rate** is currently not far from its long-term equilibria. Our scenario will assume the BRL will depreciate by the same rate of inflation, which means an exchange rate around BRL 4.10/USD by year-end 2016.

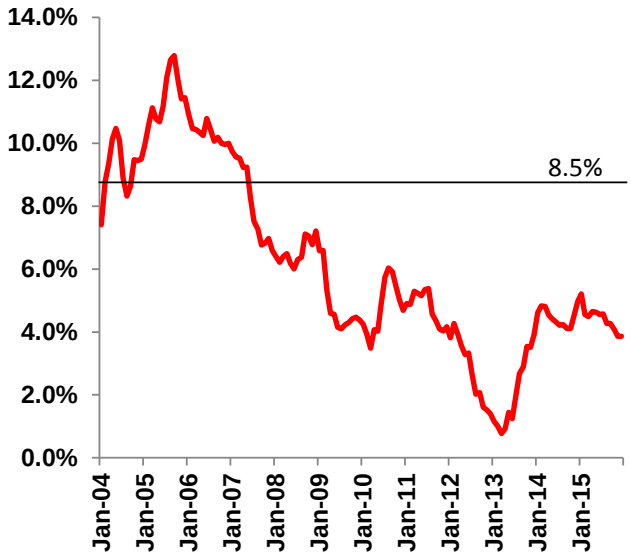
2) **Real interest rate** (Selic (-) ex post IPCA). We believe that the current adverse political and fiscal conditions will impose higher real interest rates for the near future. Our base-case assumption will be a Selic 7.5% above past inflation, not far from levels observed in the beginning of the last decade. From the point of the latest readings, this seems to be a quite conservative hypothesis, as the Selic will be at 14.25% p.a. by the end of the year vis-a-vis an inflation of 10%, meaning a real interest rate not far from 4%. But apart from fundamental considerations, we are considering the possibility of the base rate going somewhere around 15.5% in 2016 with inflation near 7%.

Real Exchange Rate (BRL adjusted by inflation differentials – Brazil x Trading Partners weighted by total Trade) (at BRL Sep 2013 prices)



Source: BCB.

Real Ex post Interest Rate (Selic (-) YoY IPCA)



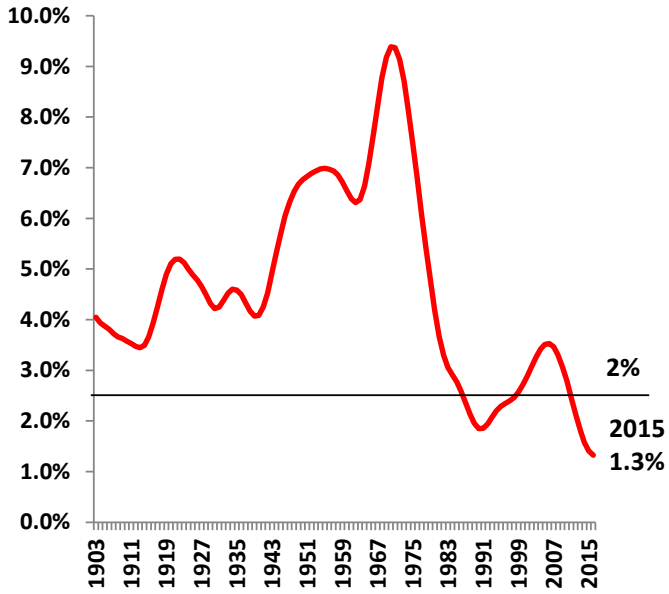
Source: Santander estimation based on BCB and IBGE data.

3) After contracting 2% in 2016, we will incorporate a conservative hypothesis of flat real GDP in 2016 (considering -2% for 2016 seems optimistic at this point) and +2% thereafter.

4) In our view, current political conditions and contracting GDP suggest the primary balance will remain in the vicinity of -1% of GDP in 2016. Our assumption for the following years is an improvement on 1 p.p. per year.

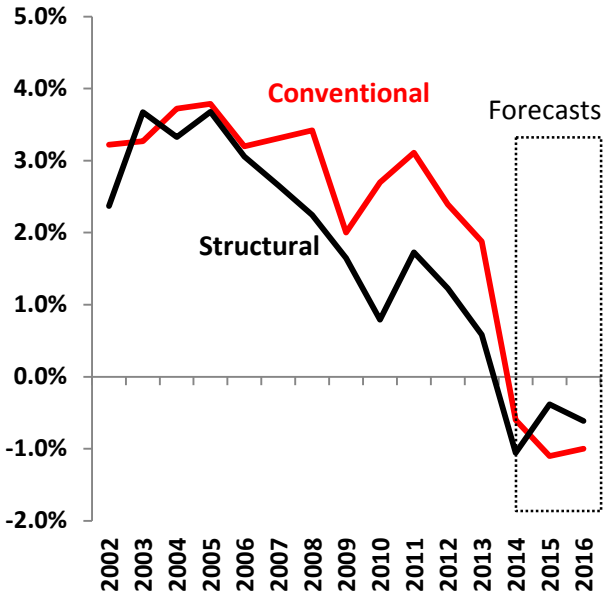
5) Other assumptions: TJLP of +1% (in real terms), two-year Treasury yields linearly going from the current 0.7% p.a. to 2% in 2017) and additional lending capitalization of public owned companies (and / or banks) of 3 p.p. of GDP.

Real GDP Growth – Trend (HP Statistical Filter)



Source: Santander estimates based on IPEA data.

Primary Surplus (% of GDP)



Source: Santander estimates based on BCB data.

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