

Analysis of the Evolution of Nominal Interests Appropriation on the PSND

The evolution of the public indebtedness profile over the recent years mostly reflects the participation of fixed-income and indexed to price indices securities, as well as of the Worker Assistance Fund (FAT) assets, the Brazilian Development Bank (BNDES) loans and the international reserves. This box aims to analyze the major factors underlying the evolution of the Public Sector Net Debt (PSND) average cost.

Table 1 – Selic, nominal interests and PSND implicit interest rate

Period	Selic average	Nominal interests (% GDP)	% p.y.		
			Implicit rate		
			Net debt total	Credits	Debts
2002	19.2	7.7	15.6	8.8	12.9
2003	23.3	8.5	17.5	12.2	15.0
2004	16.2	6.6	14.4	8.6	12.7
2005	19.0	7.4	17.2	6.7	14.0
2006	15.1	6.8	16.3	6.6	13.0
2007	11.8	6.1	15.1	5.9	11.7
2008	12.5	5.5	14.6	7.0	11.9
2009	9.9	5.4	14.5	2.9	9.9
2010	9.8	5.3	14.9	4.3	10.1

While the Selic rate decreased 13.5 p.p. from 2003 to 2010, the implicit PSND rate decreased 2.6 p.p., emphasizing the distinction between the reduction of implicit credit rates, 7.9 p.p., and debit rates, 4.9 p.p. In the same comparison basis, the appropriation of nominal interests dropped by 3.2 p.p. of Gross Domestic Product (GDP). According to Table 1, since 2006 the PSND implicit interest rate has been higher than the Selic rate, evolution consistent with the changes in the indebtedness profile mentioned in the previous paragraph.

The analysis of PSND composition shows that the participation of fixed-rate securities increased from 9.8%, at the end of 2003, to 41.8% at the end of 2010. In a scenario of downward basic interest rates, this growth contributed for a less sharp reduction in the implicit rate of appropriation of nominal interests as compared to the Selic rate. The reason for this is that the rates defined for fixed-rate securities at the issue date prevail until their maturity. However, it should be stressed that the growing participation of fixed-rate securities provides greater predictability to the government financial commitments, reducing its exposure to market risks, among other benefits.

Another factor that contributes to explain the divergent trajectory of the implicit rate and the Selic

Table 2 – International reserves

Liquidity concept

Period	US\$ billion	R\$ billion	Exchange rate (R\$/US\$)
2002	37.8	133.6	3.53
2003	49.3	142.4	2.89
2004	52.9	140.5	2.65
2005	53.8	125.9	2.34
2006	85.8	183.5	2.14
2007	180.3	319.3	1.77
2008	193.8	452.7	2.34
2009	238.5	415.1	1.74
2010	288.6	480.6	1.67
2011 - Jan	297.7	497.9	1.67

Table 3 – PSND/GDP ratio

Selic impact

Period	Selic (% p.y.) (A)	Average elasticity Selic ^{1/} (B)	Selic cost in the PSND/GDP ^{2/} ratio (A*B)
2002 Sep	17.90		
2003 May	26.27		
Change	8.37	0.25	2.11
2008 Sep	13.66		
2009 Jul	8.65		
Change	(5.01)	0.26	(1.32)
Total			3.43

1/ Change in the PSND/GDP ratio as a result of 1 p.p. increase and maintained for one year.

2/ In percentage points of GDP.

Table 4 – PSND/GDP ratio

Exchange impact

Period	Exchange rate R\$/US\$ (A)	Average elasticity exchange rate ^{1/} (B)	Exchange cost in the PSND/GDP ^{2/} ratio (A*B)
2002 Jan	2.42		
Sep	3.89		
Change	61.08	0.22	13.54
2008 Aug	1.63		
2009 Feb	2.38		
Change	45.54	-0.10	-4.73
Total			18.27

1/ Change in the PSND/GDP ratio as a result of 1% increase in the exchange rate.

2/ In percentage points of GDP.

rate is the accumulation of certain capital assets with nonfinancial purposes. For instance, it should be mentioned the growth of international reserves, from US\$49.3 billion in 2003 to US\$288.6 billion in 2010 (Table 2). As a matter of fact, it is important to emphasize that, in the absence of other factors impacting liquidity, the accumulation of reserves implies contracting open market operations aimed to neutralize the monetary expansion that it generates.

In 2006, with the accumulation of international reserves, the PSND started to register a net creditor position in foreign currency. Among other benefits, this introduced important degrees of freedom for the conduction of the economic policy. In the fiscal framework, this benefit in particular may be illustrated by the impact of the exchange and Selic rate variations during two stressful financial periods in the PSND/GDP ratio: the first, in 2002, when the volume of reserves was not appropriate in view of the uncertainties prevailing in the economic environment; and the second, in 2008, with the outbreak of the international crisis, when the stock of reserves seemed to fit better to the country's requirements.

In view of the international liquidity cushion, the Selic rate dropped 5 p.p. from September 2008 to July 2009¹. On the other hand, from September 2002 until May 2003, the Selic rate increased 8.4 p.p. due to the excessive external vulnerability. Taken into account the elasticity of the PSND/GDP ratio to the Selic rate in both periods, the estimated gain reached 3.4 p.p. of GDP in the most recent episode. In addition, the 45.5% exchange rate depreciation accumulated from September 2008 to February 2009 led to the 4.7 p.p. drop in the PSND/GDP, given the net creditor position in dollars. On the other hand, the 61.1% exchange rate depreciation registered from January to September 2002 increased the PSND/GDP ratio by 13.5 p.p. of GDP. These figures are shown in Tables 3 and 4.

Regarding domestic assets, the credits linked to the Long-Term Interest Rate (TJLP) increased from 8.8% of PSND in 2003 to 26.4% in 2010. These assets are concentrated in constitutional funds

1/ Considering the daily average interest rate, yearly updated on the basis of 252 working days.

resources, FAT investments and credits held by federal financial institutions. This growth took place especially in recent years, as a consequence of the expansion of Federal Government loans granted to the BNDES by means of issues of public securities and creation of corresponding credits to the Federal Government, with no immediate impact on PSND or financing requirements. These operations provide the Federal Government with financial assets remunerated by the TJLP and financial liabilities indexed to marked-related costs. Table 5 shows the evolution of the volume of major public sector assets, highlighting the recent growth of loans granted to the BNDES and the Central Bank's net foreign credits.

Table 5 – Growth in the main public sector financial assets

Breakdown	R\$ million									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	
FAT resources	-75 840	-88 053	-102 559	-116 890	-130 807	-138 392	-153 635	-159 633	-169 517	
Hybrid instrument of capital and debt ^{1/}	0	0	0	0	-2 389	-7 504	-7 633	-15 550	-19 879	
Credit with the BNDES	-11 808	-13 622	-17 773	-16 814	-9 953	-6 645	-35 454	-129 237	-236 723	
Federal government investments (Funds) ^{2/}	-42 014	-60 865	-50 305	-57 718	-54 457	-59 175	-66 250	-78 627	-100 984	
Central Bank's net external credits	-59 141	-58 490	-73 080	-125 238	-183 111	-319 216	-483 110	-408 188	-473 588	
State government investments	-21 620	-20 854	-23 350	-23 578	-22 664	-28 050	-32 315	-34 025	-39 279	
Federal state-owned credits	-31 098	-29 122	-31 928	-29 087	-27 047	-24 217	-19 475	-15 709	-12 760	
Demand deposits	-4 893	-4 469	-4 516	-6 353	-6 099	-8 267	-9 156	-8 331	-8 116	
Total	-246 415	-275 474	-303 512	-375 680	-436 527	-591 467	-807 028	-849 301	-1060 846	

1/ Hybrid instruments of capital and debt – BNDES, CEF and BNB.

2/ Includes constitutional funds and other federal government funds and programs.

3/ The implicit rate of the net external debt does not include changes in the exchange rate.

Table 6 – PSND/GDP elasticity to index numbers

Impact on the PSND/GDP ratio

Period	p.p. of GDP						
	Interest rate ^{1/}		Price indices ^{1/}				Exchange ^{2/}
	Selic	TJLP	IPCA	IGP-DI	IGP-M	Total	
2002	0.25	-0.05	0.01	0.02	0.03	0.03	0.17
2003	0.26	-0.05	0.01	0.02	0.03	0.03	0.12
2004	0.27	-0.05	0.01	0.01	0.04	0.04	0.08
2005	0.23	-0.05	0.03	0.01	0.03	0.07	0.03
2006	0.21	-0.06	0.06	0.01	0.02	0.07	-0.02
2007	0.23	-0.06	0.07	0.01	0.02	0.10	-0.08
2008	0.24	-0.06	0.09	0.01	0.02	0.12	-0.11
2009	0.26	-0.08	0.08	0.00	0.02	0.10	-0.11
2010	0.27	-0.11	0.09	0.00	0.02	0.11	-0.11

1/ Variation of 1 p.p. maintained for one year.

2/ Variation of 1% in the exchange rate.

Changes in the PSND composition have impacted the elasticity of the PSND/GDP ratio in relation to several indexing factors. Thus, the elasticity regarding the Selic rate increased from 0.26 p.p. of GDP, in 2003, to 0.27 p.p. of GDP in 2010, according to Table 6. In the same period, the elasticity regarding the TJLP increased from 0.05 p.p. of GDP to -0.11 p.p. of GDP; regarding the Extended National Consumer Price Index (IPCA), from 0.01 p.p. of GDP to 0.09 p.p. of GDP; and to the exchange rate variation, from 0.12 p.p. of GDP to -0.11 p.p.

Table 7, elaborated on the basis of information gathered by Gerin with a group of experts, concerning indicators such as the Selic and exchange rate, among others, shows the trajectory of the implicit rate and the evolution of PSND/GDP ratio until 2014. Even in 2011, when the market predicts an increase in

Table 7 – Projection of fiscal variables based on market parameters^{1/}

Period	PSND	Nominal result	Nominal interests	% GDP
				Implicit rate (% p.y.)
2011	38.0	1.9	4.8	14.3
2012	36.0	1.2	4.3	13.1
2013	33.6	0.7	3.8	12.2
2014	31.2	0.4	3.5	12.1

1/ The primary surplus forecasted in the LDO was defined for 2011 and a 3.1% surplus was adopted for the other years. Also, a real GDP growth rate of 4% was defined for 2011. For the other years, market projections were used.

the Selic average rate, the implicit rate tends to decrease in relation to the previous year, a trend that is expected to persist in the following years.

In short, the changes in the composition of the Brazilian public indebtedness observed recently have led to a mismatch between the paces of reduction of the Selic rate, the average cost of indebtedness and the appropriation of nominal interests. In the medium-term, one should expect a reduction in the average cost of indebtedness and appropriation of nominal interests in relation to GDP.