
# Federal Public Debt: Annual Borrowing Plan 2007

**Number 7**

**Brasília**
**2007**

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***Federal Public Debt: Annual Borrowing Plan 2007*** is *a yearly publication of the National Treasury Secretariat.* 

**Circulation: 400 copies**

Federal Public Debt: Annual Borrowing Plan 2007 1/Ministry of Finance. National Treasury Secretariat, Brasília: National Treasury Secretariat, January 2007, number 7

1. Public Debt 2. Annual Borrowing Plan 3. Planning 4. Strategy

I. Brazil. National Treasury Secretariat II. Title

*In 2006, the overriding characteristic of the Brazilian economy was, once again, economic stability. It was a period of consolidation of the successes of the recent past: inflation firmly under control, sharply diminished external vulnerability and continued fiscal responsibility as the major underpinnings of macroeconomic equilibrium, coupled with gradual but steady cutbacks in the Net Public Sector Debt (DLSP) as a ratio of GDP. As evinced by rising income and employment levels and marked improvement in income distribution, these successes have made it possible for the Federal Government to pave the way toward a process of sustained economic growth. There is no doubt whatsoever that Brazil now has the macroeconomic conditions required to launch a new period of rapid economic expansion.*

*Aside from macroeconomic aspects clearly conducive to sustainable growth, important structural changes are expected to further reinforce the already positive investment environment in Brazil. Credit market reforms and declining interest rates will doubtlessly expand the volume of credit available to the economy. Measures targeted at reducing federal taxes on capital gains, including incentives to rapid depreciation of investment outlays, will aid in fostering private investment.*

*The outlook for 2007 clearly heralds a period of continued economic stability, based on fiscal and monetary austerity with increased and more efficient public investment, expanding household consumption, growth in private investment, progress in implementing the required structural reforms and continued application of the major social policies now underway in Brazil.*

*One of the primary pillars undergirding recent economic progress has been steady improvement in the Federal Public Debt - DPF over the last several years. Since 2002, the DLSP/GDP ratio has declined systematically, making it possible to predict a reduction into the range of 40% of GDP by the end of this decade, without in any way hampering continued economic stability. Parallel to this, exposure of the debt to risk has been sharply attenuated by reducing the share of DPF indexed to short-term interest rates and, above all, to exchange rates. At the same time, the participation of fixed rate bonds and inflation-linked bonds has expanded considerably. Backed by significant improvement in external indicators, interest rates paid by Brazil to international market investors dropped to record lows while, for the first time in history, the EMBI country risk evaluation dropped below 200 basis points.*

*It is in this context that I have the pleasure of presenting the 2007 Annual Borrowing Plan - PAF. This is a fiscal management instrument that clearly defines the objectives and guidelines of Federal Public Debt management. The PAF is the instrument utilized by the National Treasury to express its commitment to cost reductions, risk monitoring and strategic planning of debt management in such a way as to further enhance investor confidence.*

*Once again, we must reaffirm our commitment to fiscal responsibility and transparency as the principles that have permeated government action in recent years, furthering development of our institutions, while enhancing the nation's credibility, with unprecedented positive impacts on the social well being of the population as a whole.*

***Guido Mantega***
***Minister of Finance***

*When one analyzes the trajectory of Federal Government debt in the 2003-2006 period, it is easy to perceive the progress achieved by the National Treasury in its management role. At the start of 2003, not only was the debt/GDP ratio high, but also maturities were mostly short-term and the debt was primarily indexed to FX and to the Selic rate. When 2006 drew to a close, the debt/GDP ratio had a downward trajectory, total fixed rate and inflation-linked debt was greater than the sum of FX-indexed and Selic-indexed debt, while the percentage of debt due in 12 months had decreased.*

*Current indicators suggest that the process of structural improvement to which the Federal Public debt - DPF has been subjected will not only continue, but also produce even more positive results in 2007. Inflation is firmly under control, making it possible to reduce the Selic rate and, therefore, diminish the cost of the debt. The commitment of the recently reelected administration to continued fiscal responsibility ensures more favorable conditions for a continued decline in the debt/GDP ratio. The net external debt/exports ratio has already dropped to its lowest level since this indicator was first calculated in the 1970s. This factor, coupled with the historically high level of reserves held by the Central Bank, has made the country considerably more resilient to external shocks. Early redemption of debts originating in past restructuring processes (Brady Plan and Paris Club), reduction of the short-term external debt and issuance of external debt bonds referenced to real are factors that have ensured Treasury access to external credits under increasingly more favorable conditions, resulting in significantly lesser costs on public and private bond issuances.*

*It is in this framework that the 2007 Annual Borrowing Plan - PAF presents its DPF borrowing strategies and targets for the year. Just as in recent years, 2007 strategy calls for continued substitution of foreign exchange and Selic-indexed securities for fixed rate and inflation-linked bonds, lengthening of the average debt maturity, smoothing of the maturity profile, reductions in the percentage of debt due in 12 months, expansion of the investor base and development of interest rate term structures for federal public securities on internal and external markets.*

*More specifically, it is hoped that fixed rate debt will become the major DPF debt category in 2007, for the first time since 1997. At that time - one must recall - the debt structure was considerably less stable and much more fragile than today, since it was almost entirely composed of short-term debt. In the context of the Federal External Public Debt, Brazil will continue operations of a qualitative nature aimed at strengthening benchmarks and correcting distortions in the Brazilian interest curve, while respecting market conditions.*

*What is new is a model that has been developed to indicate the optimal public debt structure, understood as that which minimizes DLSP costs and risks. The model is already used in other countries and is an important strategic DPF planning tool. The need to develop a more sophisticated risk analysis and strategic planning tool is rooted in recognition that, as the DPF structure improves, the trade-offs become more subtle and the following steps can only be defined after a more detailed examination of the costs and risks involved in each new issuance strategy.*

*Thus, I present this 2007 PAF with full confidence that the progress achieved in recent years will be extended into 2007, convinced that the National Treasury has the human and technological resources required to cope with the challenges of the future.*

***Tarcísio José Massote de Godoy***
***National Treasury Secretary***

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## Executive Summary

The objective of Federal Public Debt – DPF management is to **minimize long-term financing costs, while ensuring the maintenance of prudent risk levels and contributing to the well functioning of the public debt market**. Taking full account of market conditions, measures adopted by the National Treasury will prioritize the following: i) lengthening of average DPF maturities, mainly by increasing the average maturity of bonds issued in public offers; ii) reduction of the percentage of DPF to mature in 12 months; iii) gradual substitution of Selic-indexed and exchange rate-indexed bonds for fixed rate and inflation-linked securities; iv) qualitative issues of securities in foreign currency; v) incentives to development of interest rate term structures for federal public securities on the internal and external markets; and vi) broadening of the investor base.

Financing strategy for 2007 was based on a variety of issuance possibilities drawn from analysis of alternative scenarios. In all of them, the major hypothesis adopted in their elaboration was preservation of current economic policy guidelines and, consequently, coherent responses to the shocks analyzed.

In formulating debt management strategies for 2007, the first factor analyzed was DPF financing requirements. Federal government debt maturities on the market projected for 2007 correspond to approximately R$ 436.1 billion, including R$ 320.6 billion in principal and R$ 115.5 billion in interest. A breakdown of this total shows that R$ 412.8 billion involved Domestic Federal Public Debt - DPMFi and R$ 23.2 billion corresponded to External Federal Public Debt - DPFe. When the R$ 23.3 billion in charges on National Treasury securities in the Central Bank portfolio are included, DPF maturities climb to R$ 459.4 billion. Utilizing this volume of maturities and deducting R$ 88.9 billion in available budget resources, net federal government borrowing requirements for 2007 total R$ 370.5 billion.

DPMFi financing strategy for 2007 is focused specifically on the following: i) issuance of fixed rate bonds (LTN and NTN-F) in volumes and maturities that will make it possible to increase the participation of these securities in composition of the overall public debt, while gradually lengthening average maturities at issue; ii) emphasis on issuances of NTN-B, a security referenced to the Broad National Consumer Price Index - IPCA, while no issuances of NTN-C, referenced to the General Market Price Index – IGP-M, are projected; iii) net redemptions of Selic-indexed securities (LFT) and maintenance of average issuance maturities at levels similar to those in effect in 2006 (approximately 44 months); and iv) continuation of the policy in effect since 2003 of not issuing exchange rate-indexed NTN-D.

In more specific terms, it is important to emphasize the initiative taken by the National Treasury to standardize the original maturities of fixed rate securities and NTN-B. Among other positive consequences, this measure will aid in consolidating the medium and long-term curve. In the case of fixed rate securities, LTN with maturities of 6, 12 and 24 months will be used as benchmarks and NTN-F will have maturities of 3, 5 and 10 years, thus adapting them to international market practices. As far as NTN-B are concerned, alteration of already existent maturity dates may occur should it become possible to determine a benchmark issue structure, with terms of 3, 5, 10, 20, 30 and 40 years.

With respect to DPFe management, the National Treasury will carry out qualitative operations on the external market, with the aim of consolidating the external yield curve through construction and maintenance of benchmarks in the major markets.

The strategy adopted by the National Treasury should generate quantitative results at the end of 2007. As shown in the charts below, these results will be reflected in the upper and lower indicative

limits for the major DPF and DPMFi statistics. The projected intervals show continued improvement in overall public debt indicators.

### Results: Federal Public Debt - DPF

| Indicators | Dec-06 | PAF-2007 | |
|---|---|---|---|
| | | Minimum | Maximum |
| Stock of DPF held by the public (R$ billion) | 1237.0 | 1370 | 1450 |
| Average Maturity (months) | 36.6 | 37 | 42 |
| % Maturing in 12 months | 33.3 | 27 | 31 |
| Share of DPF (%) | | | |
| Fixed Rate (%) | 31.9 | 33 | 39 |
| Price Index (%) | 19.9 | 20 | 24 |
| Floating Rate (%) | 33.4 | 26 | 32 |
| Exchange Rate (%) | 12.7 | 10 | 12 |
| Others (%) | 2.0 | 1 | 3 |

Source: STN/COGEP

### Results: Domestic Federal Public Debt – DPMFi

| Indicators | Dec-06 | PAF-2007 | |
|---|---|---|---|
| | | Minimum | Maximum |
| Stock of DPMFi held by the public (R$ billion) | 1093.5 | 1230 | 1300 |
| Average Maturity (months) | 31.1 | 32 | 36 |
| % Maturing in 12 months | 35.7 | 29 | 33 |
| Share of DPMFi (%) | | | |
| Fixed Rate (%) | 36.1 | 37 | 43 |
| Price Index (%) | 22.5 | 23 | 27 |
| Floating Rate (%) | 37.8 | 29 | 36 |
| Exchange Rate (%) | 1.3 | 1 | 2 |
| Others (%) | 2.2 | 2 | 4 |

Source: STN/COGEP

DPF management will be targeted to reducing exposure to risk. In this framework, reduction of the share of debt scheduled to mature in 12 months will play an important role in **reducing refinancing risk**. This reduction will be further strengthened by attenuation of the volatility of maturities, as a consequence of the improved debt structure (in terms of both composition and short-term maturities), maintenance of comfortable cash reserves (National Treasury reserves available exclusively for DPF payments) and anticipated redemptions of foreign currency for purposes of paying the External Federal Public Debt - DPFe.

Improvement in DPF composition, coupled with increased participation of fixed rate and inflation-linked securities, will aid in reducing DPF sensitivity to changes in exchange rates and short-term interest rates, thus reducing the **market risk** of the Brazilian public debt. One should also underscore that the targets proposed for 2007 will result in an improved federal government asset and liability structure, aiding in reducing the vulnerability of the debt to shocks in the major macroeconomic indicators.

The final analysis refers to **strategy risk** - in other words, the risk of noncompliance with the predetermined limits. This is an indication that the targets for DPMFi composition must be complied with in a natural manner. Continuation of the 2006 issuance pattern, considered feasible for 2007 without generating undue pressures on the financial market, will result in DPMFi composition indicators quite close to the center point of the stipulated ranges.

Finally, the PAF presents a series of considerations on the model developed by the National Treasury for the purpose of indicating the optimal debt structure, understood as that which minimizes DLSP costs and risks. This model will guide short and medium-term financing strategy and will be utilized as an important strategic planning instrument capable of orienting management decisions taken with the aim of achieving the debt structure desired by the government, based on its preferences among risks and costs.

Early results generated by the model indicate that the guidelines and targets defined in this PAF are consistent with the optimal expected DPF structure. In this sense, the model confirms that there is room for increasing the participation of inflation-linked securities, considering that there is a strong correlation between earnings on these securities and GDP evolution and, consequently, government revenues, thus reducing DLSP exposure to risks. There is also room for broadening the relative participation of fixed rate securities, since they ensure enhanced predictability in relation to DPF costs and, therefore, DLSP evolution.

The analysis also calls for cutbacks in the weight of Selic-indexed bonds in public financing, albeit at a gradual pace. In this regard, though payment on these securities may be more volatile than on fixed rate and inflation-linked bonds, it is important to stress that they have the advantage of aiding in reducing DPF costs in the transition to a scenario of lower interest rates, consistent with greater economic stability. Insofar as the external debt is concerned, the benchmark indicates a level of participation coherent with the stock of exchange reserves.

## Introduction

The objective of the Annual Borrowing Plan - PAF is to provide society with information on Federal Public Debt - DPF planning for 2007. This document is an element of the ongoing initiative of making DPF management more transparent and predictable, particularly with regard to end-of-year performance indicators.

The 2007 PAF is structured as follows. Section 1 presents the objectives and guidelines that orient DPF management, together with the various macroeconomic scenarios used by the National Treasury in elaborating 2007 borrowing strategy.

Section 2 describes Federal Government Borrowing Requirements for 2007 and discusses borrowing strategy in the light of the previously defined guidelines and objectives. Following that, the expected results for the major DPF indicators are presented. These results are expressed in terms of upper and lower limits within which the major public debt parameters are expected to close the year.

Section 3 presents an analysis of DPF exposure to risks, coupled with the measures taken to minimize them. This analysis includes refinancing and market risks in the context of the alterations expected in the public debt structure as summarized in Section 2. At the same time, this Section highlights the risk margin consequent upon compliance with PAF targets.

By way of conclusion, Section 4 contains final considerations, pointing out the advances achieved in DPF management, together with medium and long-term expectations regarding the DPF structure and National Treasury debt management.

## Section 1: Federal Public Debt Planning

Elaboration of the Annual Borrowing Plan – PAF considers the broad array of information underlying strategic Federal Public Debt – DPF planning, in the framework of the objectives and guidelines of Brazilian public debt policy. These data make it possible to design prospective scenarios and elaborate alternative domestic and international market financing strategies.

### 1.1. DPF Objectives and Guidelines

Federal Public Debt – DPF management, including both the domestic and external debts for which the Federal Government is liable, is aimed at **minimizing long-term financing costs, whlie ensuring the maintenance of prudent risk levels and contributing to the well functioning of the public debt market**.

Based on market conditions, the general guidelines underlying DPF management are as follows:

- Lengthen average DPF maturities, mainly by increasing the average maturities of bonds issued in public offerings;
- Reduce the percentage of DPF to mature in 12 months and, in this way, attenuate refinancing risk;
- Gradually substitute Selic-indexed and FX-indexed bonds for fixed rate or inflation-linked securities, diminishing the volatility of DPF maturity volumes, among other advantages;
- With due attention to market conditions, effect qualitative issuances in foreign currency;
- Foster development of interest rate term structures for federal public securities on internal and external markets; and
- Broaden the investor base.

"…minimizing long-term financing costs, ensuring maintenance of prudent risk levels..."

### 1.2. Scenarios

Formulation of 2007 financing strategy incorporates a wide range of issue possibilities developed through analysis of alternative scenarios that suggest the upper and lower limits for debt indicators. In all of the various scenarios, the major hypothesis adopted in their elaboration was continued application of current economic policy guidelines, with the corresponding implications regarding responses to shocks.

The baseline scenario is quite close to market expectations for 2007[1]. Its premises are the absence of significant external or internal shocks with continued application of current economic policy guidelines or, in other words,

1 In accordance with the Market Report released by the Central Bank of Brazil.

fiscal and monetary responsibility, exchange stability and structural improvements in the nation's economy. The scenario points to a gradual though not necessarily uninterrupted interest rate decline and a continued favorable trajectory under fiscal and external solvency indicators.

The alternative scenarios, on the one hand, consider the convergence of positive factors, providing a greater margin for internal interest rate reductions, coupled with sustained growth devoid of significant inflationary and exchange pressures in a framework of a benign external situation. On the other hand, the analysis also considers a scenario that incorporates negative risks in the external environment, capable of reducing the intensity of the interest rate decline and increasing uncertainties among economic agents. Scenarios based on strong shocks or stress situations have not been included among those used as the basis for defining the final parameters of this borrowing plan.

## Section 2: Annual Borrowing Plan

This section presents details on domestic and external financing strategies, together with their underlying assumptions, followed by quantitative targets for the domestic Federal Public Debt - DPMFi[2] and Federal Public Debt - DPF[3].

### 2.1. Assumptions and Borrowing Requirements

The first factor considered in formulating 2007 strategy was DPF borrowing requirements for the period, reflecting projected 2007 maturities of Federal Government debt on the market. These debts correspond to approximately R$ 436.1 billion, distributed as follows: R$ 412.8 billion in domestic Federal Public Debt - DPMFi and R$ 23.2 billion in External Federal Public Debt – DPFe (Table 1).

**Table 1. DPF Maturing in 2007**

*R$ Million*

| | DPMFi | DPFe | DPF |
|---|---|---|---|
| Jan-07 | 57,637.95 | 3,278.04 | 60,915.99 |
| Feb-07 | 3,120.40 | 2,821.82 | 5,942.21 |
| Mar-07 | 35,553.62 | 1,340.82 | 36,894.44 |
| Apr-07 | 59,916.74 | 2,771.25 | 62,687.99 |
| May-07 | 17,426.89 | 779.22 | 18,206.11 |
| Jun-07 | 40,938.82 | 596.91 | 41,535.73 |
| Jul-07 | 76,844.20 | 4,749.65 | 81,593.85 |
| Aug-07 | 3,297.96 | 1,104.56 | 4,402.53 |
| Sep-07 | 34,346.10 | 1,256.05 | 35,602.15 |
| Oct-07 | 38,142.39 | 3,208.10 | 41,350.49 |
| Nov-07 | 8,240.27 | 769.96 | 9,010.22 |
| Dec-07 | 37,356.79 | 552.33 | 37,909.11 |
| **Total** | **412,822.13** | **23,228.71** | **436,050.84** |

Position in 12/31/2006.

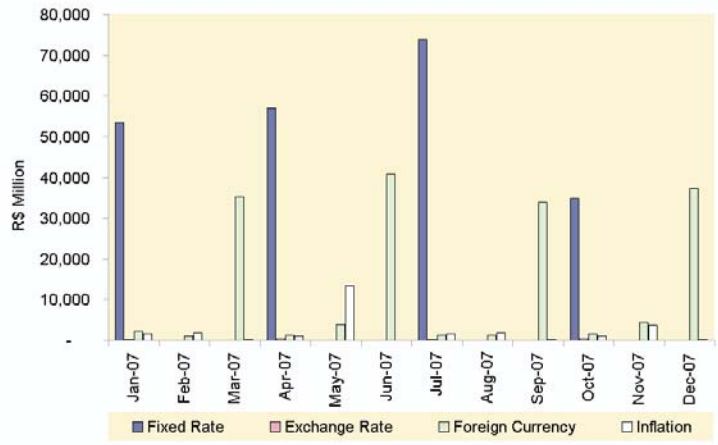
Source: National Treasury

Of total 2007 DPMFi maturities (R$ 412.8 billion), R$ 309.4 billion correspond to principal and the remaining R$ 103.4 billion to interest. It is important to note that 53.1% of total maturities reflect fixed rate bonds, always scheduled for the start of the quarter (Graph 1). A breakdown of the remainder shows 39.9% in floating rate bonds (Selic, TR and TJLP), 6.6% in inflation-linked securities and 0.3% in FX-indexed securities. Inflation-linked bonds have maturities due in12 months well below the level of their participation in the public debt stock, since their average maturities are reasonably greater than the overall average DPF maturity.

2 The DPMFi includes all bonds of the domestic Federal Public Debt, held by the public, issued by the National Treasury.

3 The DPF corresponds to the combination of the DPMFi with the External Federal Public Debt – DPFe, the latter consisting of both Securities and Contractual Debt.

**Graph 1. DPMFi Maturing in 2007 per Type of Index**

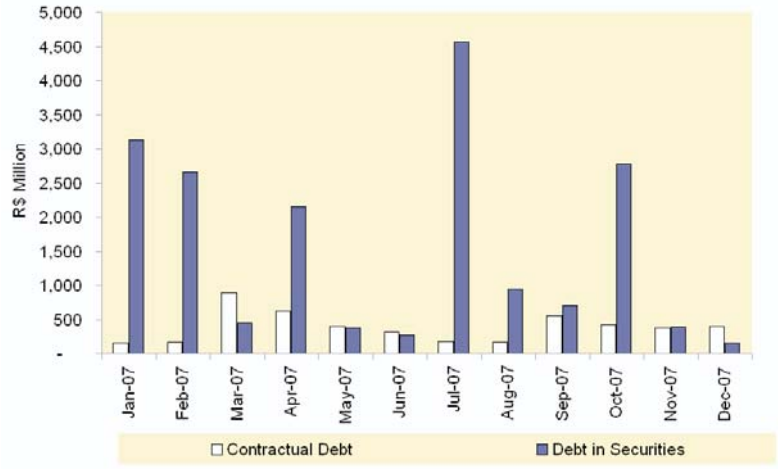



(a) Securities linked to the Selic, TR and TJLP rates.

Source: National Treasury

Among DPFe maturities, totaling R$ 23.2 billion (US$ 10.6 billion), 80.0% referred to an estimated total securities debt of R$ 18.6 billion (US$ 8.5 billion). Of this total, R$ 10.3 billion referred to interest and R$ 8.2 billion to principal. The remaining 20.0% reflect contractual debt payments, estimated at R$ 4.6 million (US$ 2.1 billion), of which R$ 3.0 billion correspond to principal and R$ 1.6 billion to interest (Graph 2).

**Graph 2. DPFe Maturing in 2007**




Source: National Treasury

With respect to DPFe maturities, the Treasury has already concluded anticipated purchase of US$ 3.5 billion, thus reducing the need for purchasing foreign currency to approximately US$ 7.1 billion. The additional funds will be acquired on local exchange markets or, alternatively, through Central Bank international reserve purchases. With the reduction in external borrowing requirements and expectations of positive balance of payments conditions, 2007 issuance on the external market will not be aimed at mobilizing resources to meet maturities in the period.

Considering the R$ 459.4 billion[4] in DPF maturities and deducting R$ 88.9 billion in projected budget resources, the conclusion is that net Federal Government borrowing requirements will total R$ 370.5 billion (Table 2).

**Table 2. Federal Government Borrowing Requirements**

*R$ Billion*

| | | | |
|---|---|---|---|
| A | Estimated Redemptions | | **459.4** |
| | National Treasury | *Domestic Debt Held by the Public* | 412.8 |
| | | *Interest due to Central Bank* | 23.3 |
| | | *External Debt* | 23.2 |
| B | Budgetary Resources | | **88.9** |
| C | Financing Requirements (A - B) | | **370.5** |

Source: National Treasury

## 2.2. Issuance Strategy

### Domestic Debt

Current issuance strategy is targeted at increasing the participation of fixed rate and inflation-linked bonds, while reducing the weight of Selic-indexed and FX-indexed securities. The overall aim is to improve debt profile and the composition, based on guidelines adopted successfully in recent years.

At the same time, this strategy has the objective of stimulating development of yield curves for both fixed rate and inflation-lonked bonds, both of which play fundamental roles in bond market and, in the broader sense, capital market evolution.

The National Treasury will continue to act as a go-between among the various representative segments of the financial market, while taking other initiatives aimed at expanding the investor base and ensuring a more adequate supply of public securities.

### Fixed Rate Securities

As part of its effort to increase the average maturity of fixed rate public bonds begun in 2006, the National Treasury will continue the process of adopting new rules on issues of these bonds.

4 Out of the $ 459.4 billion, R$ 412.8 billion refer to maturities of DPMFi held by the public, R$ 23.2 billion to DPFe maturities, and R$ 23.3 billion to interest payments to the Central Bank. The interest payments of the National Treasury bonds held by the Central Bank, according to the Fiscal Responsibility Law, article n° 39, can not be refinanced through the Central Bank.

In 2007, the objective is to consolidate issue of fixed rate bonds in this structure, using 6, 12 and 24 month LTN and 3, 5 and 10-year NTN-F as benchmarks. The overriding objective of this measure is to foster development of the Brazilian capital market, while adjusting issue maturities to international market standards, in which medium and long-term fixed rate securities provide intermediate interest coupon payments.

In order to achieve its objectives regarding composition and maturities as efficiently and rapidly as possible, the National Treasury is expected to increase the proportion of longer-term bonds offered, placing a volume of three-year NTN-F on the market sufficient to transform it into a significant financing instrument.

**Inflation-linked Securities**

NTN-B are referenced to the Broad National Consumer Price Index - IPCA and are destined to play an important role in 2007 issues. Though the terms and maturity dates in effect at the end of 2006 – 3, 5, 10, 20, 30 and 40 years - will be maintained, it is possible that new maturities will be introduced in the course of the year. Maturity date alterations may be introduced with the objective of creating new points on the medium and long-term yield curves.

The system of two-stage issuances in public offers of NTN-B should be maintained, with the possibility of exchanging bonds with shorter average maturities for longer-term securities in the second stage of the operation, as a way of furthering the policy of lengthening the debt maturity profile. At the same time, the practice of accepting Selic-indexed and FX-indexed bonds as payment for inflation-linked bonds will continue, as an instrument designed to improve DPF composition.

With respect to NTN-C, which are referenced to the General Market Price Index – IGP-M, no issuances are projected as part of 2007 financing strategy.

**Selic-Indexed Securities**

The year is expected to close with net redemptions of Selic-indexed bonds (LFT). The original average maturity of these bonds will be maintained at a level similar to 2006 (approximately 44 months). This strategy will aid in reducing the National Treasury's refinancing risk on the domestic market, while improving overall DPF composition.

**Exchange Rate-Indexed Securities**

Following what has occurred since 2003, no issues of NTN-D, exchange rate-indexed securities, are projected for 2007.

**Other Measures**

In keeping with the guidelines of reducing concentration of maturities, the National Treasury plans to continue early redemptions of short-term securities, while exchanging short-term bonds for longer- term securities.

Early redemptions of medium and long-term securities will continue, coupled with NTN-B interest coupon operations with the objective of increasing secondary market liquidity.

As has occurred in recent years, in moments of increased volatility, the National Treasury will make use of simultaneous public bond buy and sell operations with the aim of providing the fixed income market with price parameters.

The Treasury also intends to continue its policy of organizing the maturity dates of new bonds according to the following rules:

- Fixed rate bonds:
  - ✓ LTN – maturity on the first day of the months of January, April, July and October;
  - ✓ NTN-F – maturity on the first day of January, with the exception of the 3 year benchmark which could mature in July;
- Inflation-linked securities:
  - ✓ NTN-B: maturity of principal in the month of May for notes maturing in odd numbered years, with coupon payment in May and November; maturity of principal in August for those maturing in even numbered years, with coupon payment in February and August. This combination makes it possible to achieve a quarterly payment flow based on a combination of NTN-B with maturities in even and odd numbered years. The exception to this rule occurs with shorter term NTN-B, which can have November maturities of principal for notes scheduled to mature in odd numbered years;
- Selic-indexed securities:
  - ✓ LFT: maturity in the third month of each quarter.

The National Treasury will continue its task of furthering development of the secondary public bond market with the aim of expanding the investor base. In this context, the Treasury will act in tandem with the Central Bank, Securities and Exchange Commission - CVM, the Complementary Pension Fund Secretariat - SPC, the Private Insurance Superintendency - Susep, among other regulatory entities, all of which play an important role in this process. At the same time, it is important to highlight the increasingly closer relations between the institution and domestic investors, including entities operating with complementary pension funds, investment funds, commercial banks and investment banks, insurance companies and capitalization funds. For the most

part, this cooperation is channeled through such representative entities as ABRAPP, ANAPP, FENASEG, ANDIMA and ANBID[5].

The work carried out with the private sector aimed at disseminating information abroad regarding the Brazilian financial market and ways in which it can be improved will continue within the framework of the program Brazil: Excellence in Securities Transactions - BEST and other institutional initiatives. Coordination with government agencies aimed at facilitating and reducing the costs of foreign investor participation in the domestic bond market will be further intensified.

Parallel to these activities, the Investor Relations Management staff will expand its role, providing information and deepening its contacts with the various investor categories.

**External Debt**

Federal External Public Debt - DPFe management for the 2007-2008 period will be qualitative in nature, with the objective of consolidating external yield curves through construction and maintenance of benchmarks in the major bond markets. The strategy for obtaining this objective in the 2007-2008 period was summarized in August 2006 by the National Treasury in the following points:

- Development of an interest rate term structure in *Real* on the external market;
- Creation and improvement of benchmarks in the dollar interest rate term structure;
- Continuation of the program of early redemptions, in a manner consistent with market conditions; and
- Continued application of the strategy of correcting external yield curve distortions;

In 2007, DPFe management will remain subject to the terms of Federal Senate Resolution n. 20/2004, which authorizes early redemptions, bond exchanges and utilization of derivatives for purposes of DPFe management.

**2.3. Expected Results**

Just as in previous years, the expected results for 2007 are expressed through upper and lower limits for the major Federal Public Debt – DPF and Domestic Federal Public Debt – DPMFi statistics (Tables 3 and 4). This type of presentation is aimed at providing a clear vision of National Treasury borrowing policy, without in any way sacrificing the need for a flexible overall strategy.

5 Brazilian Association of Closed Complementary Pension Fund Entities (ABRAPP), National Association of Private Pension Funds (ANAPP), National Federation of Private Insurance and Capitalization Companies (FENASEG), National Association of Financial Market Institutions (ANDIMA), e National Association of Investment Banks (ANBID).

### Table 3. Federal Public Debt – DPF Results

| Indicators | Dec-06 | PAF-2007 | |
|---|---|---|---|
| | | Minimum | Maximum |
| Stock of DPF held by the public (R$ billion) | 1237.0 | 1370 | 1450 |
| Average Maturity (months) | 36.6 | 37 | 42 |
| % Maturing within 12 months | 33.3 | 27 | 31 |
| Share of DPF | | | |
| Fixed Rate (%) | 31.9 | 33 | 39 |
| Inflation-linked (%) | 19.9 | 20 | 24 |
| Floating Rate (%) | 33.4 | 26 | 32 |
| Exchange Rate (%) | 12.7 | 10 | 12 |
| Others (%) | 2.0 | 1 | 3 |

Source: National Treasury

### Table 4. Domestic Federal Public Debt – DPMFi Results

| Indicators | Dec-06 | PAF-2007 | |
|---|---|---|---|
| | | Minimum | Maximum |
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| Others (%) | 2.2 | 2 | 4 |

Source: National Treasury

The results forecast for 2007 also encompass expectations regarding securitization of contingent liabilities in an amount of up to R$ 16.0 billion[6] in 2007, the major share being in CVS bonds[7]. In the context of monetary and exchange policies, open market operations and foreign currency purchases for purposes of international reserve management, consideration is also given to the possible impacts of Central Bank measures on DPF statistics.

Following the example of previous years, the positive behavior of DPF and DPMFi indicators projected for end-2007 indicates lengthening of average debt maturities, reductions in the percentage to mature in 12 months and increased participation of fixed rate and inflation-linked bonds in the Federal Public Debt stock, with consequent cutbacks in the share of the Selic-indexed and FX-indexed bonds.

### Outstanding Stock

The DPF stock at the end of 2007 is forecast at between R$ 1.37 trillion and R$ 1.45 trillion, compared to R$ 1.24 trillion in December 2006. The DPMFi

6 Value for 2007 forecast in the Budgetary Guidelines Law – LDO, in its fiscal risks appendix.

7 The CVS are s issued by the National Treasury in the framework of the renegotiation of debts that originated in the Wage Variation Compensation Fund - FCVS, remaining after settlement of the housing financing contracts formalized by the former BNH.

stock is projected at between R$ 1.23 trillion and R$ 1.30 trillion, against R$ 1.09 trillion at the end of 2006.

It is important to observe that the projected increase in the 2007 stock is a result of expectations of a cutback in market liquidity generated by net National Treasury bond issues, resulting in creation of local currency and foreign exchange reserves without, however, affecting the Net Public Sector Debt[8].

**Average Maturity**

In December 2006, the average maturity of the DPF stock reached 36.5 months. This indicator is expected to close the current year between 37 and 42 months. As regards DPMFi, 2006 closed with an average maturity of 31.1 months, against a projected end-2007 average maturity between 32 and 36 months.

**Percentage Maturing within 12 Months**

At the end of 2006, the percentage of DPF to maturing within 12 months corresponded to 33.2% of the stock. Current estimates indicate a final 2007 level between 27% and 31%. In the case of DPMFi, the projected limits are 29% and 33%, compared to the final 2006 figure of 35.7%. The projections for 2007 cited above reflect measures taken to attenuate the concentration of short-term maturities for both DPF and DPMFi.

**Debt Composition**

According to current guidelines, the participation of fixed rate bonds in the total debt stock is expected to rise to levels between 33% and 39% for DPF and 37% and 43% for DPMFi in December 2007. The participation of these bonds in DPF and DPMFi stood at 31.9% and 36.1%, respectively, in December 2006.

The participation of inflation-linked bonds in DPF is projected to increase to a final 2007 level between 20% and 24%, compared to 19.9% at end-2006. With regard to DPMFi, participation is projected at between 23% and 27% at the end of the current year, compared to 22.5% of the total at the end of 2006.

While the participation of fixed rate and inflation-linked bonds increased, projections for Selic-indexed securities and FX-indexed bonds indicate a downward trajectory in 2007. The proposed limits for Selic-indexed bond participation are between 26% and 32% of DPF and between 29% and 36% of DPMFi, compared to 33.4% and 37.8%, respectively, at the end of 2006.

Finally, the participation of FX-indexed bonds in DPF is expected to close 2007 at between 10% and 12%, compared to 12.7% in 2006. For DPMFi, the result is projected at between 1% and 2% at the end of the current year, compared to 1.3% in December of the previous year.

8 Indicator commonly used as reference for monitoring the sustainability of the fiscal policy.

## Section 3. Risk Assessment

As already stated, the core objective of Federal Public Debt - DPF management is to minimize long-term borrowing costs, thus ensuring continued prudent levels of risk. With this in mind, risk assessment and risk exposure management are fundamental components of strategic public debt planning. In the framework of the highly positive international scenario that has marked recent years, coupled with sharp improvement in domestic macroeconomic indicators, the National Treasury has taken advantage of the opportunity to restructure DPF with the ultimate aim of reducing the level of risk exposure. The major risks[9] targeted for constant assessment are listed below and are at the center of mitigation policies developed by the National Treasury.

**Refinancing risk** is rooted in the possibility that the National Treasury will have to bear the burden of higher costs to obtain short-term financing or, in an extreme case, will fail to obtain the resources required to honor its debt maturities. This risk is a consequence of the maturity profile once available cash resources are deducted, and of the sensitivity of short-term public debt maturities to shocks in the underlying economic variables. Assessment of this risk utilizes such indicators as percentages maturing within 12 months, together with average maturity and volatility measurements of expected payments, as shown through the Cashflow-at-Risk (CfaR) technique.

In its turn, **market risk** is a consequence of alterations in the financing cost of public securities resulting from changes in short-term interest rates, exchange rates, inflation or the interest rate term structure. Considering that each type of National Treasury bond reacts in a specific manner to changes in these factors, public debt composition is seen to be one of the most relevant parameters for market risk management.

Finally, **strategy risk** concerns capacity to comply with the targets presented in this PAF.

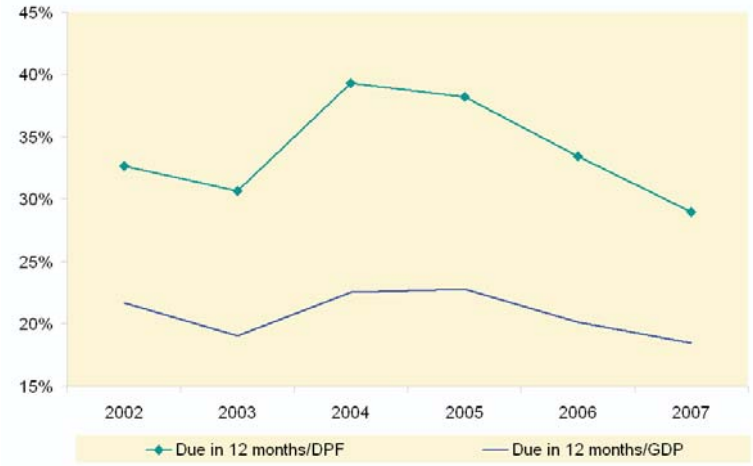
### Refinancing Risk

Analysis of the concentration of DPF maturities (Graph 3) shows a reduction in the debt due in 12 months both as a percentage of GDP and as a percentage of DPF between 2005 and 2006. The reduction in short-term maturity concentration aids in attenuating refinancing risk. The analysis also demonstrates that 2007 financing strategy will follow the same lines and should further reduce refinancing risk[10].

9 Other relevant types of risks are the operational risk, the legal risk and the credit risk.

10 In this section, in order to project indicators for 2007, the mid point of the upper and lower limits were taken as estimates.

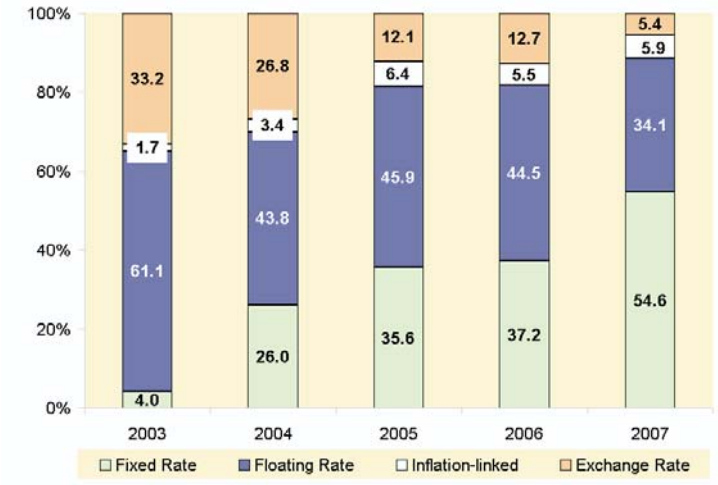
**Graph 3. Concentration of Short-term Federal Public Debt Maturities**




Source: National Treasury

Aside from the reduction in the proportion of debt maturing within 12 months, evolution of the maturity profile also contributes to attenuation of risk. In this sense, the increased participation of fixed rate debt, coupled with reductions in Selic-indexed debt and, principally, in FX-indexed debt, has resulted in considerably less volatility in the flows of debt due within 12 months. As noted in Graph 4, less than 10% of short-term DPF maturities in 2003 corresponded to fixed rate bonds, compared to a 2007 level of approximately 55%.

**Graph 4. DPF Short-term Maturity Profile per Type of Index**



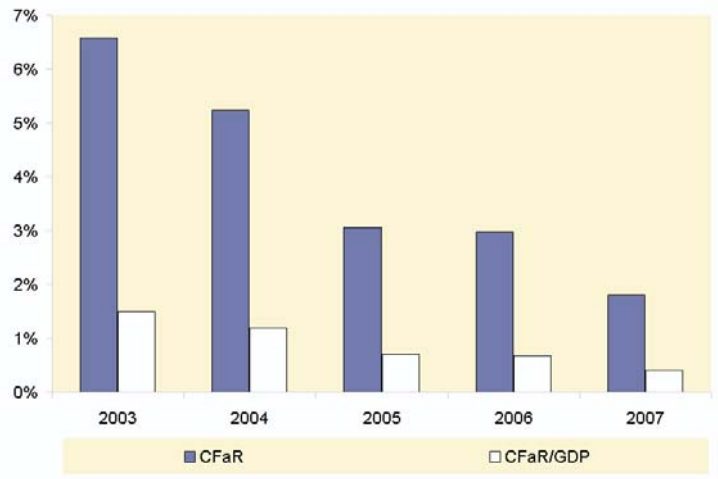

Source: National Treasury

The reduction in the volatility of DPF maturity flows generated by alterations in the composition of these flows can be measured through relative Cashflow-at-risk (CfaR)[11], as shown in Graph 5. This is an indicator of the magnitude of

11 This exercise consists in simulate, for each hypothesis of composition of DPF maturities, the probability distribution of these maturities at the end of every month in 2007, based on stochastic scenarios for interest rates, inflation and exchange rate. The maturity of reference is the amount projected to fall due in 2007 (R$ 436.1 billion), which does not take into account the refinancing strategy in 2007. The maturities of each group of bonds (fixed rate, Selic-indexed, inflation-linked and FX -linked) are given by their share in the total sum of DPF maturities for each year (from 2003 to 2007, as exposed on Graph 4) and are equally distributed in the 12 months of 2007.

deviations in the value of expected debt maturities consequent upon stochastic shocks on interest, exchange and inflation, coupled with a specific level of statistical significance[12] in the occurrence of these shocks.

**Graph 5. Federal Public Debt Relative Cashflow-at-Risk**




Source: National Treasury

Graph 5 shows that the relative CfaR has been dropping since 2003, reaching a 2007 level equivalent to approximately 27% of the value projected when the hypothesis of maturity composition equivalent to that of 2003 is utilized. This result is one of the benefits of greater relative participation of fixed rate bonds in DPF, as evident in a reduction of more than 2/3 in the volatility of DPF maturities.

Other factors responsible for reduced refinancing risk are continued comfortable "liquidity cushion balances"[13] and management of foreign currency liabilities. The National Treasury has implemented - particularly in 2006 - an intense program of early redemptions of part of the external debt due to mature between 2006 and 2012, with the effect of smoothing the External Federal Public Debt - DPFe maturity profile. Parallel to this, new external issues of long-term bonds in *Real* have contributed to consolidating the long ebd of the domestic fixed rate yield curve.

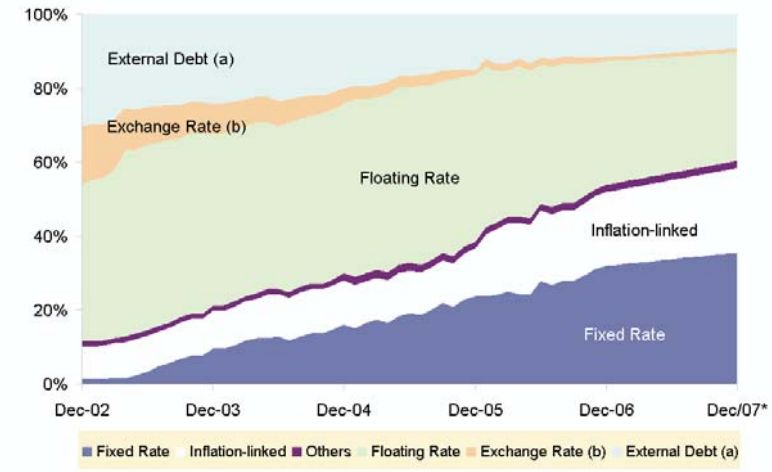
**Market Risk**

Public debt market risk has diminished sharply as a result of changes in the composition of DPF indexing factors, particularly the cutback in the shares of debt indexed to exchange and the Selic rate. At the end of 2006, the total of DPF shares of inflation-linked and fixed rate bonds surpassed 50% and is projected to exceed 60% at the end of 2007.

[12] The relative CfaR presented in this document is defined as the ratio of the 99% percentile (level of significance of 1%) and the average distribution simulated for the total value of DPF maturities over a one-year period.

[13] Budgetary resources available exclusively for DPF payments.

**Graph 6. Federal Public Debt Composition**




* The 2007 projected composition is estimated as the midpoint value of the target ranges of the PAF 2007.

(a) Sovereign foreign-currency external debt (does not include the *Real* bonds issued in external markets, which are part of the fixed rate share)

(b) NTN-D exchange rate linked domestic debt

Source: National Treasury

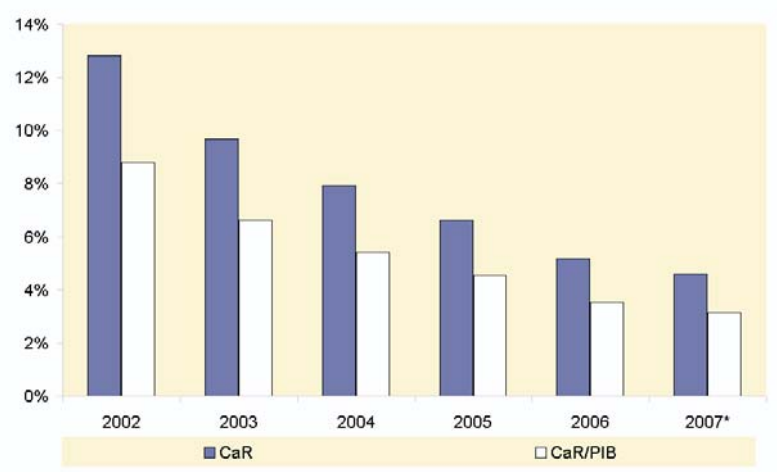
Constant alterations in DPF composition in recent years and the consequent increase in the participation of fixed rate and inflation-linked bonds have significantly reduced DPF exposure to the risk of shocks in financial indicators.

Graph 7 presents the results of the relative Cost-at-Risk (CaR)[14], estimation utilized here to measure the reduction in market risk generated by improvement in DPF composition. Relative CaR is an indicator of the volatility of DPF stock value aimed at determining the margin by which the debt stock can exceed expected value in a specific fiscal year, at a specified level of statistical significance[15], as a result of fluctuations in the economic variables that define the cost of that debt.

14 This exercise consists in simulating, for each hypothesis of DPF composition, the probability distribution of the debt stock at the end of 2007, based on stochastic scenarios for interest rates, inflation and exchange rate. The initial stocks, for each type of bond (fixed rate, Selic-indexed, inflation-linked and FX -linked), are given by their share in DPF at the end of each year of analysis (from 2003 to 2007 – in 2007 the mid point values of the target ranges are used as estimates). The DPF stock of reference is the value of end 2007 (R$ 1,237 billion).

15 The relative CaR presented in this document is defined as the ratio of the 99% percentile (level of significance of 1%) and the average distribution simulated for the DPF stock at the end of a one-year period.

### Graph 7. Federal Public Debt Relative Cost-at-Risk




* The 2007 projected composition is estimated as the midpoint value of the target ranges of the PAF 2007.

Source: National Treasury

As indicated in the simulations, relative CaR has dropped systematically since 2002. The projected value for end 2007 corresponds to just 36% of the amount projected using the debt composition of end 2002. This reflects a market risk cutback of approximately 2/3 over a 5-year horizon, as a consequence of the increased weight of fixed rate and inflation-linked bonds in DPF.

The diminished risk exposure is also evident in more conservative analyses. The exercise in Table 5, known as stress impact[16], is a simulation of the negative impact of strong and persistent pressure on real interest rates and real exchange in DPF value. These pressures are transmitted primarily through changes in the cost of FX-indexed bonds and Selic-indexed bonds and, therefore, are proportional to the participation of these bonds in DPF.

### Table 5. Stress Test for Interest and Exchange Rates

| Indicators | Share of DPF (%) | | | | | | Stress Impact (R$ billion) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007* | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Floating Rate | 42.4 | 46.5 | 45.7 | 43.9 | 33.4 | 29.0 | 52.7 (3.3%) | 57.8 (3.6%) | 56.8 (3.1%) | 54.6 (2.8%) | 41.5 (2.0%) | 36.1 (1.6%) |
| Exchange Rate | 45.8 | 32.4 | 24.2 | 17.6 | 12.7 | 11.0 | 299.4 (18.9%) | 211.9 (13.3%) | 158.2 (8.5%) | 115.0 (5.9%) | 83.0 (3.9%) | 71.9 (3.1%) |
| Total | 88.2 | 78.9 | 69.9 | 61.5 | 46.1 | 40.0 | 352.1 (22.2%) | 269.7 (16.9%) | 215.0 (11.6%) | 169.6 (8.7%) | 124.5 (5.9%) | 108.0 (4.7%) |

* The 2007 projected composition is estimated as the midpoint value of the target ranges of the PAF 2007.

Source: National Treasury

Analysis of the data in the table above clearly indicates a substantial reduction of the impact that large-scale market turbulence would have on debt value, in nominal terms and as a percentage of GDP. Given the DPF stock at the end of 2006, the impact of a stress scenario on interest and exchange rates would

16 Stress represents a shock of 3 standard deviations on the average real Selic rate and average real cumulative exchange devaluation over 12 months (between Jan/00 and Dec/06), applied to the DPF stock on Dec/06 (R$ 1,237.0 billion). The stress scenario assumes a sustained increase in the interest and exchange rate, and its effect over a one-year period.

be equivalent to 22.2% of GDP in the case of a debt structure equivalent to that of 2002 and just 4.7% of GDP, utilizing a structure corresponding to the midpoint of indicative PAF limits for 2007.

In the case of DPF exposure to exchange shocks, this situation is considerably more favorable than suggested by the exercise above. The stress test does not take account of the level of international reserves accumulated by the Central Bank. Graph 8 shows the evolution of the FX-indexed share of DPF (including exchange swaps) and of international reserves.

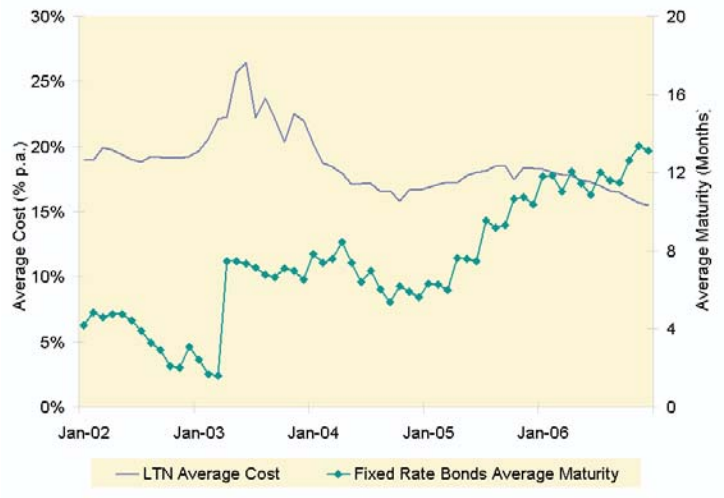
**Graph 8. Foreign Currency Exposure : (DPF + Swap) versus International Reserves**


Source: National Treasury

The graph shows that the level of international reserves has exceeded total FX-indexed Federal Government debt since mid-2006. Based on this result, one can infer that, despite provoking an increase in DPF value, exchange shocks would be immunized through an increase of the same magnitude in the value of international reserves, expressed in *Real*, thus eliminating its impact on Net Public Sector Debt. Projections for 2007 indicate continuation of this scenario, with international reserves exceeding the value of FX-indexed DPF.

It is important to stress that alterations in the debt structure imply costs and, in this context, the National Treasury must be constantly vigilant in order to choose the right moment and the best way of making this change. Though increasing the fixed rate share of the debt is important, there is a trade-off between composition, cost and duration that must be noted for the Treasury to be able to achieve debt management objectives. The graph below demonstrates that the National Treasury has been successful in taking advantage of the decline in basic interest rates (Selic rate) to increase the fixed rate share of the debt without increasing its cost or reducing the average maturity of that share of the debt. Simulations indicate that 2007 will be a year of opportunity for the Treasury to continue implementing its strategy of gradually improving DPF composition.

**Graph 9. Cost and Average Maturity of Fixed Rate Bonds**




Source: National Treasury

As measured by the stress test, the reduction in the share of Selic-indexed bonds in DPF resulted in a decrease in interest rate risk. Aside from this test, if one were to adopt the sum total of Selic-indexed and fixed rate debt maturing within one year as a conservative indicator for the risk of interest rate fluctuations, we would observe that, despite the more rigorous risk assessment approach, Treasury exposure has diminished since early 2005, as shown in Graph 10. This result is consistent with the policy of lengthening average issue maturities and consolidating benchmarks on the fixed rate bond market.

**Graph 10. Interest Rate Risk: Selic-indexed + Fixed Rate Debt maturing within 12 months**

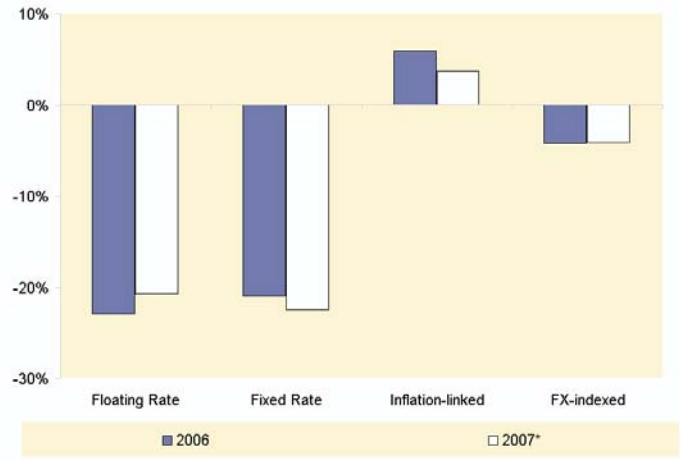

Source: National Treasury

The National Treasury is studying the possibility of using derivatives as a market risk management tool. Federal Senate Resolution n. 20/2004 authorized utilization of derivatives in external credit operations. Currently, the Treasury is evaluating which instruments would be more useful for purposes of implementing its financing strategies, while also developing specific pricing and risk models for such instruments.

### *Asset and Liability Management - GAP*

The targets proposed in PAF 2007 will also result in improvement in the Federal Government asset and liability structure, thus helping to reduce debt vulnerability to macroeconomic shocks. Considering the midpoints of the indicative limits specified in this PAF, DPF composition targets project an increase in fixed rate liabilities and reductions in net liabilities in interest and exchange rates, together with cutbacks in net inflation-linked assets.

**Graph 11. DPF Asset-Liability Mismatch per Type of Debt as a Percentage of GDP**




"...improvement in the Federal Government asset and liability structure..."

* The 2007 projected composition is estimated as the midpoint value of the target ranges of the PAF 2007.

Source: National Treasury

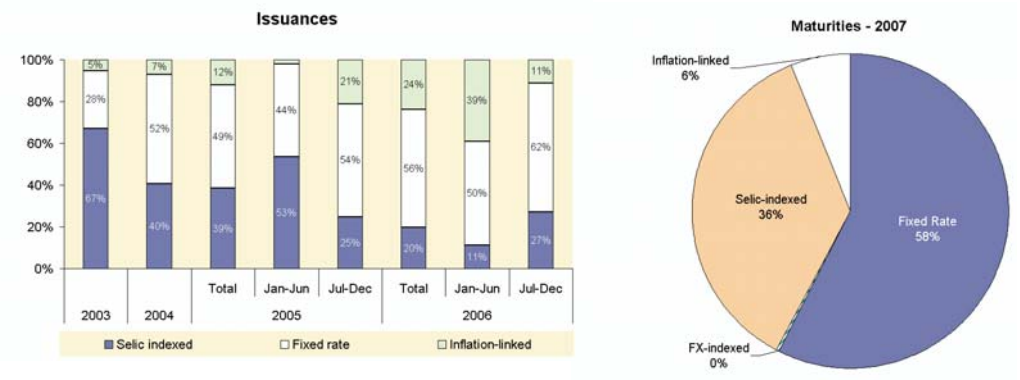
### Strategy Risk

During the process of elaborating public debt management guidelines, the National Treasury assesses the risks of noncompliance with the targets stipulated for the following period. Aside from the market sensitivities of the debt managers and professionals charged with market monitoring, objective exercises are carried out with the aim of deciding whether the planned strategy can be implemented and whether it will generate debt indicators at the desired target levels. Basically, these tests consist of evaluating whether the strategies required to reach the targets are consistent with recent National Treasury bond issuances.

Graph 12 demonstrates that inflation-linked and fixed rate bonds accounted for approximately 80% of 2006 bond issues in the DPMFi framework[17]. It is important to underscore that, in the first six months of 2006, inflation-linked bonds moved into a position of significance in Treasury financing operations, accounting for nearly 40% of issuance. In the final six months of the year, fixed rate bonds accounted for the major share.

17 Taking into account that the DPMFi represents approximately 90% of the DPF, the strategy risk analysis can be applied to the DPF.

### Graph 12. Composition of DPMFi Issuances and Maturities

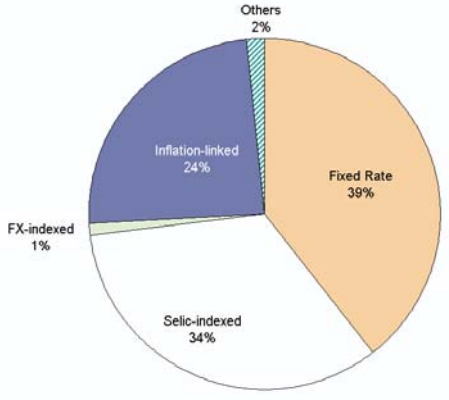



Note: Includes bond issued and redeemed in exchange operations as well as those canceled in early redemption operations.

Source: National Treasury

When one analyzes the maturity profile set out in Graph 12, together with the hypothesis of issuance composition similar to the standard registered in the second half of 2006, the conclusion is that DPMFi composition targets must be achieved in a natural manner. Observe that, on choosing this period as the reference for the issuance profile, we adopted the hypothesis of exchanging the indexing factor for approximately 10% of total maturities scheduled for 2007. In this case, these securities would shift from Selic-indexed or FX-indexed to inflation-linked or fixed rate bonds. The result of this hypothetical exercise is found in Graph 13.

### Graph 13. Simulation of Domestic Federal Public Debt - DPMFi structure at end 2007




| DPMFi Stock Composition | PAF-2007 Minimum | PAF-2007 Maximum |
|---|---|---|
| Fixed rate (%) | 37 | 43 |
| Inflation-linked (%) | 23 | 27 |
| Selic-indexed (%) | 29 | 36 |
| FX-indexed (%) | 1 | 2 |
| Others (%) | 2 | 4 |

Note: This result reflects only the extrapolation of the composition of issues in the second semester of 2006 and, therefore, has no direct relation with any specific issue strategy set down in PAF 2007.

Source: National Treasury

Observe that, in 2007, it would be feasible to simply continue this same issue standard, without provoking undue pressures on the debt market, while all DPMFi composition indicators would close in a range quite close to the center of the stipulated intervals. This exercise further reinforces confidence that, from the viewpoint of issue composition, no significant obstacles will be raised to implementation of the new strategy.

## Section 4: DPF Benchmark Model

The results achieved in public debt management in recent years will allow the National Treasury to pursue its proactive public debt management policy in 2007, aimed at improving composition, while lengthening average maturities and reducing the percentage due in 12 months.

However, such changes involve choices with respect to the balance between costs and risks implicit to a given public debt structure. Consequently, the National Treasury must define the profile desired for its long-term liabilities, so that financing can be implemented with the least possible cost without, however, causing high risk exposure.

With precisely this concern in mind, the National Treasury is progressing in development of an optimal long-term benchmark model for the Brazilian public debt. This study is essential to guiding the decisions of debt managers, making it possible to attain the debt structure desired by the government, based on its preferences between risks and costs.

Several countries, including Portugal, Sweden, Ireland and Denmark, already utilize benchmark models for this purpose. At the same time, international organizations such as the World Bank and International Monetary Fund recommend that sovereign debt managers adopt benchmark models as risk management and strategic planning tools[18].

### Theoretical principles

In summary, the benchmark is an optimal long-term debt structure used to guide short and medium-term financing strategy. It is an important risk management and strategic planning instrument. In a steady state[19], it indicates efficient debt compositions from the point of view of the trade-off between cost and risk. Based on information generated by the benchmark model, the debt manager is capable of performing financing operations, including both new issues as well as others exclusively for risk management purposes. In this way, the debt management process leads gradually to a situation of optimal composition from a cost minimizing standpoint, while maintaining prudent levels of risk.

Viewed from the theoretical angle, developments based on the “Ricardian Equivalence” hypothesis pursue a situation of neutrality of debt dimensions on economic activity[20]. Nonetheless, more realistic hypotheses have led to

18 See Guidelines for Public Debt Management (2001 e 2003), released by the International Monetary Fund and the World Bank.

19 The steady state is understood as a situation in which debt’s maturity relative profile is constant and the economic variables fluctuate around their long-term equilibrium values.

20 There are three conditions under which the Ricardian Equivalence is valid: (1) The economic agents must have infinite horizon of concern; (2) The existence of a perfect capital market (3) Existence of non distortionary taxes. About this subject, see Barro, Robert J. (1974), “Are Government Bonds Net Wealth?”, Journal of Political Monetary Economics, vol. 82, 1095-1118.

theories that consider public debt management relevant. Relaxing the hypotheses underlying "Ricardian Equivalence", public debt composition is important not only for purposes of minimizing the expected costs of debt servicing, but also in the interests of credibility and signaling, minimization of budget volatility and enhanced liquidity or increased information available on the market[21].

Literature about optimal taxation demonstrates that governments must define a constant tax load over time ("tax smoothing"), thus guaranteeing the intertemporal consistency of decisions taken by economic agents. Together with the objective of optimal taxation, the government must structure its debt in such a way as to stabilize the tax load over time and in different states of nature. In this context, governments should have very low tolerance for risky liability structures and the primary aim of the debt manager would be to obtain a portfolio structure that minimizes the risk of fluctuations in debt costs, since these fluctuations would be responsible for changes in taxation.

**Application of the Model to the Brazilian Case**

The general idea of the model developed by the National Treasury is quite simple. Evolution of the economy is based on stochastic[22] models of finance for relevant macroeconomic variables (interest rates, exchange rates, inflation and GDP). Though they are stochastic, these models are correlated in order to ensure macroeconomic consistency. The trajectories simulated for these variables are used to estimate the cost of each Treasury financing instrument, as well as DPF and DLSP/GDP evolution at the end of the period of analysis which was defined at 10 years. Based on this information, one obtains an efficient debt portfolio frontier in a steady state, in the risk-return[23] space of DLSP/GDP[24]. Each portfolio is different in terms of its composition by indexing factor (fixed rate, Selic, inflation and exchange rates) and also in relation to average maturities and the percentage to mature in 12 months.

Early results generated by the model indicate that the guidelines and targets presented in this PAF are consistent with the optimal expected structure for DPF. In this sense, the model confirms that there is space to increase the share of inflation-linked bonds, considering that earnings on these securities have a close correlation with GDP evolution and, therefore, with government revenues, thus reducing DLSP exposure to risk. At the same time, there is space for broadening the relative participation of fixed bonds, since these securities ensure enhanced predictability in relation to DPF costs and, therefore, to DLSP evolution.

21 See Goldfajn, Ilan e Paula, Áureo de (1999), "Uma Nota sobre a Composição Ótima da Dívida Pública – Reflexões Para o Caso Brasileiro", Texto para Discussão n° 411, PUC-Rio (December).

22 Stochastic models are those generated from random variables, with probability distribution.

23 The smaller the DLSP/GDP average probability distribution is at the end of the period of analysis (10 years), the greater the return provided by a given debt portfolio. The risk is measured through the 99% percentile probability distribution of the DLSP/GDP at the end of the period of analysis.

24 The DLSP/GDP ratio is considered the most important indicator of the public sector indebtedness, indicating government solvency, and for this reason it contributes to define fiscal policies.

This analysis further justifies reductions in the weight of Selic-indexed bonds in public financing, albeit at a gradual pace. In this regard, it is important to stress that, though earnings on these bonds may be more volatile than on fixed rate and inflation-linked securities, they have the advantage of contributing to DPF cost reductions in the transition to a scenario of lower interest rates consistent with economic stability. As far as the external debt is concerned, the benchmark points to coherent participation together with the stock of exchange reserves.

## Final Considerations

Though management of the trade-off between cost and risk suggests the use of traditional financial analysis instruments, one should recall that there are certain factors peculiar to the government that hamper indiscriminate use of finance theory in analyzing public debt. In this context, the government may have more complex objectives than simply reducing costs in line with the preservation of prudent risk levels. For example, cash flow indicators and impacts on annual budgets have implications for the choice of an optimal debt structure. Aside from this, the dimensions and nature of public bond issues and public debt composition provide the government with powerful influence on prices and, therefore, on the costs and risks of its financing strategy.

Just as occurs in most countries, Brazil has declared long-term cost minimization as the objective of public debt management, while preserving a prudent level of risk. Despite this, however, it has also demonstrated concern with secondary market development, an expanding investor base and development of an interest rate term structure, considered the basic reference for pricing public and private securities.

In light of these objectives and the guidelines and first results achieved in DPF's benchmark model, one can affirm that the guidelines and results presented in this PAF are consistent with a gradual shift toward medium and long-term attainment of a situation of optimal DPF composition.