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Brazil's Financial System:
Resilience to Shocks, No Currency Substitution,
But Struggling to Promote Growth*

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Abstract

Brazil has evolved a financial system with a smaller presence of public banks and larger participation of foreign banks, less directed credit, and well capitalized banks. Over the years it has been resilient to shocks and was able to preserve the real value of savings in the system, thus avoiding both dollarization and desintermediation. However, reducing the cost and increasing the volume of credit in the economy remains a challenge. Notwithstanding these hurdles, recent advances in the regulation of the financial system should pave the way for better intermediation and higher growth.

Key words: Financial System, Economic Development, Brazil
JEL Classification: G21, G28, O16

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1. Introduction

Over the past decade and a half, Brazil has had two very different financial systems. The first system had a strong presence of public banks (owned by both the federal and state governments), a limited number of foreign banks, a large role for directed credit, limited competition, and heavy dependence of banks' profits on revenues associated with high inflation. The second system, in place today, has a small number of public banks, a strong presence of foreign banks, a mostly free allocation of credit, and well-capitalized banks whose profits do not depend on inflation. The conversion from the first to the second system has occurred over the last decade in the wake of a sharp shift to a more open economy both in terms of trade and capital flows, a deep restructuring process that followed the end of high inflation, and, more recently, renewed efforts to develop a set of regulations and procedures that strengthen the financial system (microeconomic and legal reforms).

High inflation prior to the Real plan in 1994 provided incentives for banks to compete for deposits because of the profits banks earned by investing the resources in inflation-protected government securities. The inflation profits (from the so called "float") induced banks to expand, open new branches, offer "free" bank services and develop a high degree of technological progress, especially aimed at enhancing the speed of processing financial transactions. Investments that would not be feasible in a low inflation environment turned out to be profitable.

The end of high inflation induced a rapid revamp of the system. Banks had to find alternative sources of revenue. Financial institutions could not continue to offer free services. Consolidation was the order of the day, as offering deposits was less profitable. In a Darwinian process, only the most competitive and strong banks survived this major shift in the banking business.

It is no coincidence that the major official bank restructuring programs were launched less than a year after the inflation stabilization in 1994. Three large private banks made up the core of the Program of Incentives for Restructuring and Strengthening the

National Financial System (PROER). The end of the inflation tax and implicit government guarantee led also to the restructuring and privatization of banks owned by Brazil's state governments under the Program of Incentives for the Reduction of the State Role in Banking Activity (PROES) (out of an initial 35 state-owned banks, only 12 banks remain under state control, of which 5 are scheduled to be privatized).

The banking system still has two major federal banks – Caixa Econômica Federal and Banco do Brasil. Under the Program for the Strengthening of the Federal Financial Institutions (PROEF) these banks, along with two development banks (Banco do Nordeste and Banco da Amazônia), were subject to more rigorous than usual supervision by the Central Bank of Brazil (BCB), carried out during 1999 and 2000. This effort showed the need for larger provisions and adjustment for capital adequacy (stricter than those suggested in the Basle Accord). The objective under the program was to promote more competitive, transparent and efficient federal banks.

The restructuring programs were followed by the creation of the FGC (Fundo Garantidor de Crédito) – a mandatory, privately funded deposit insurance scheme. Concerns about the strength of the financial system led the BCB to take actions to enhance the prudential regulatory and supervisory framework. In 1997 the BCB launched the Global Consolidated Inspection (GCI) program to enhance supervisory practices, upgrade the skills of supervisors, and evolve a strategic vision of the future of the financial system. It has also taken measures necessary to bring regulations and supervisory practices into compliance with the Basle Core Principles. In April 2002, the authorities put into operation a new real-time gross settlement (RTGS) payment system that avoids the possibility of overdrafts at any time.

Brazil's experience with high inflation did not give rise to a significant process of currency substitution. Experiences in other economies show that high and variable inflation rates encourage a flight from domestic money and raise demand for alternative assets, including those denominated in foreign currency. This paper claims that the rapid response by the Brazilian financial system to a changing and turbulent environment, as well as

actions by the government, have enabled not only the preservation of residents' deposits invested in domestic assets, but also helped to ensure depositors against exogenous shocks, thus helping to bolster domestic households' and firms' confidence in domestic financial assets. The financial system has introduced several new financial products over time that have enabled households and firms to preserve the value of their assets, and the government in turn has played a critical role in providing the appropriate mix of public debt instruments that has allowed banks to frame products to protect savings against macroeconomic instabilities.

The perception that value will be preserved also depends on confidence in the system. In this respect, the rapid response to and resolution of bank problems, together with improvements in the prudential area in the early phase of the macroeconomic stabilization process, helped the Brazilian economy to withstand the turbulent financial environment that it faced in the late 1990s, as well as more recently. Resilience to shocks provides confidence in the system, which allows the system to preserve the depositor base.

In the new financial system, important challenges remain. Inefficiencies and imperfections in the system still persist, as evidenced by large bank spreads, a low volume of credit as a share of GDP, and almost no supply of non-government longer-term loans. Thus, there is room for improvements that will enable the system to properly fulfill its role of financial intermediation to support economic development. In this respect, further efforts are required in the regulatory and supervisory framework to reduce inefficiencies and make the system safer. In addition, there is a need for institutional reforms to minimize the costs of intermediation, as well as for appropriate schemes to allow the development of markets for new financial instruments.

This paper is organized as follows. The next section presents the Brazilian financial system's stylized facts. Section 3 describes the deep restructuring process of the Brazilian financial system in the second half of the 1990´s. Section 4 explains how currency substitution was avoided in a high inflation economy. Section 5 explains the problems that

still stand in the way of a better functioning system. Section 6 describes the recent progress in improving the system. And Section 7 presents concluding remarks.

2. Stylized facts of the Brazilian Financial System

This section presents a set of stylized facts that characterizes the Brazilian financial system. The following sections will analyze these facts, providing explanations of past and current trends.

i. In the second half of the 1980s, the system was characterized by the strong presence of commercial banks, with a large number of publicly-owned banks. Since 1988, the number of universal banks increased rapidly, as commercial banks were converted into universal banks and new institutions were created. The number of financial institutions almost doubled – from 111 to 203 – and there was also a large increase in the number of branches that lasted until the launch of the Real Plan in 1994 (Table 1). Since then, this trend has been reversed.[1]

Table 1 - Banks: institutions and branches

Itemization	1988		1994		2002 (June)	
	Institutions	Branches	Institutions	Branches	Institutions	Branches
Commercial banks	106	13 837	28	4 160	24	380
Universal banks	0	0	173	11 305	146	14 874
Saving banks	5	2 374	2	1 935	1	1 694
Total 1/	111	58.2	203	59.8	171	72.6

Source: Central Bank of Brazil, Economic Department and authors

Note: Banco do Brasil became a universal bank in 2001
1/ GDP to branches ratio (R$ million/branche)

ii. The ownership composition of the system has changed significantly, with the participation of the private sector in the system increasing from 49.1 to 66.6 percent, and the presence of foreign banks rising considerably (Table 2).

[1] See Central Bank of Brazil, 2000b, for a more detailed explanation on the evolution of the Brazilian Financial System.

Table 2 - Bank ownership, total banking assets, December 1993 and June 2002

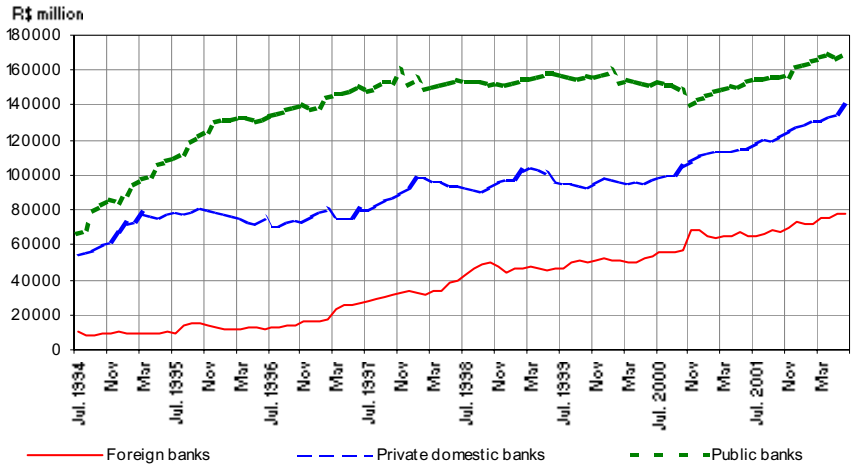
Institutions	1993 (December)		2002 (June)	
(by ownership)	CR$ billion	%	R$ million	%
Public banks	46 947	50.94	329 949	33.41
Federal	36 189	39.27	291 137	29.48
State	10 758	11.67	38 812	3.93
Private banks	45 213	49.06	657 674	66.59
Domestic	37 226	40.39	357 925	36.24
Foreign	7 987	8.67	299 749	30.35
Total	92 160	100	987 623	100

Source: Central Bank of Brazil, Economic Department

iii. The Brazilian financial system is one of the largest among emerging market countries. Total assets excluding mutual funds reached R$ 1,147 billion in June 2002, equivalent to around 90% of GDP. The banking system, including commercial and universal banks and saving banks, accounts for 84% of the System's total assets, with remaining assets held by development banks, credit unions, and non-banking institutions.

iv. In the last decades, there was a steady demand for financial assets denominated in domestic currency. Figure 1 shows the evolution of deposit share by groups of banks – public, private and foreign – since the launching of the Real stabilization program in 1994. Funds deposited in private banks have expanded, with an increasing share of deposits in foreign banks during the period.

Figure 1 - Total deposits in Brazilian banks, June 1994-June 2002



***Source**: Central Bank of Brazil, Economic Department*

v. As compared to other economies with a similar level of development, the volume of credit to GDP in Brazil is low. Nevertheless, since 1999, the volume of free, market-based credit has increased not only in absolute terms but also as a share of total credit (see Table 3).

Table 3 - Total credit of the financial system as proportion of GDP

% of GDP

	2000	2001	2002*
Free resources	14.17	16.38	17.40
Households	4.72	5.90	6.15
Enterprises	6.32	7.08	7.13
Forex linked	3.12	3.40	4.11
Directed resources	12.86	9.87	10.76
Housing	4.62	1.79	1.72
Agricultural	2.49	2.21	2.34
BNDES	5.25	5.53	6.60
Others	0.51	0.33	0.11
Leasing	1.26	0.97	0.82
Public Sector	1.16	0.83	0.87
Total	29.45	28.05	29.85

Source: Central Bank of Brazil, Monetary Policy Press Release, October 2002

* September

vi. Brazilian banking spreads (between borrowing and lending rates) are very wide but have narrowed somewhat recently (Figure 2 and Tables 4 and 5). Considering freely allocated resources, in September 2002, 58% of credits were fixed interest rate. Loans with indexed interest rates, usually rates linked to the change in the exchange rate, represent 29.2% of the total; operations with floating interest rates account for the remainder of outstanding free credit.

Figure 2 - Evolution of the interest rate spread and total freely allocated resources, Feb.1998 - Aug.2002

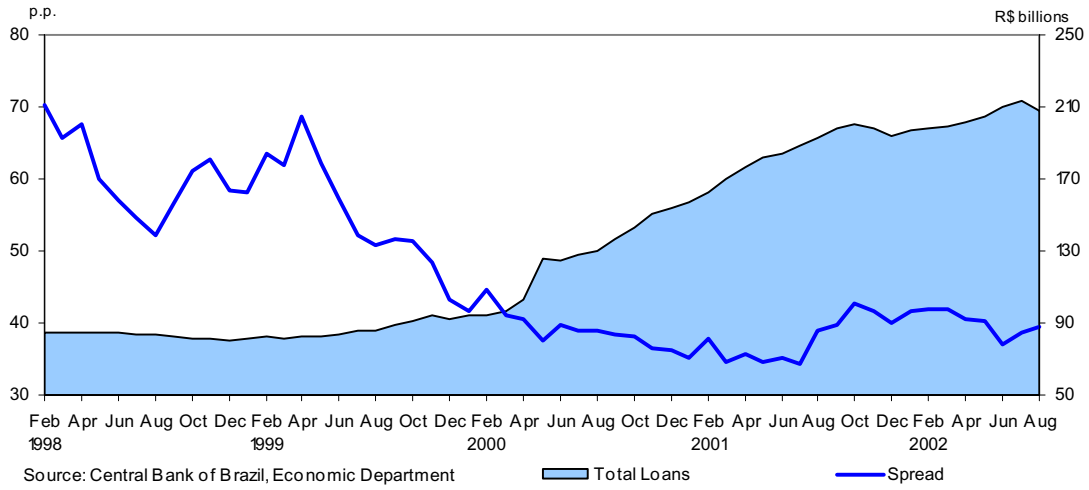


Table 4 - Average interest rates and spreads charged in loans: freely allocated resources

	Deposits (% p.a.)	Loans (% p.a.)	Spread (p.p.)
2001 Dec	20.3	49.0	28.7
2002 Sep	13.5	43.6	30.1

Source: Central Bank of Brazil, Monetary Policy Press Release, October 2002.

Table 5 - Interest rates and spread charged in loans: freely allocated resources

	Interest rate (% p.a.)				Spreads (p.p.)		
	Fixed rate		Indexed [1/]	Floating rate [2/]	Fixed rate	Indexed [1/]	Floating rate [2/]
	Enterprises	Households					
2001 Dec	43.8	71.8	25.4	28.4	39.9	4.4	9.3
2002 Sep	42.3	74.7	6.5	25.9	39.4	13.3	8.0

Source: Central Bank of Brazil, Monetary Policy Press Release, October 2002.

1/ Linked to foreign exchange variation
2/ Linked to interbank deposit certificates (CDI)

vii. Banks have performed well in terms of profitability. In June 2002, the system's return on equity (ROE) stood at 9.1%, up from 5.1% in December 2001. Results have been better on average for foreign banks, which posted an ROE of 12.8%, compared to private domestic banks' 8.2% and public banks' 7.6%. The system's return on total assets has also increased, from 0.5% in December 2001 to 0.9% on average in June 2002.[2]

viii. Banks' capital ratio has increased and exceeds standard requirements. In June 2002, the system's ratio of net worth to total assets weighted by risk stood at 16.1%, compared to the 11% level required for banks and other financial institutions by Brazilian regulations (Banks owned by credit unions and for credit unions have minimum ratios of 13% and 20% respectively). The Basle ratio for the banking system was 15.6% in June 2002, higher than the 8% level recommended internationally. Additionally, stress tests carried out with 137 banks and based on June 2002 data have shown the system's resilience to exchange, interest rate, and credit shocks.

[2] See Central Bank of Brazil Financial Stability Report, 2002b.

3. Restructuring the Financial System

This section describes the restructuring process of the Brazilian financial system. This process produced changes in three areas: a reduction in the number of banks, a smaller public sector presence, and increased participation of foreign banks. This section also describes the resolution of the banking crisis in Brazil after the Real plan and estimates its fiscal costs.

The banking system in Brazil is composed mostly of universal banks as a result of government policies from the late 1980s. Following the National Monetary Council's (CMN) approval of Resolution 1.542 in 1988, the number of banks increased significantly, enhancing competition and leading to the opening of a large number of new branches nationwide. This trend also reflected the system's response to the inflationary process, as the network of branches was used to collect seignorage revenue, especially through the opening of new demand deposit accounts.

Since the launching of the Real Plan, the Brazilian financial system has experienced a deep process of restructuring. Financial environment has changed significantly with the macroeconomic stabilization, forcing a voluntary structural change by banks that resulted not only in a shift of the focus concerning profitable activities, but also in a new design of the market.

Facing the sharp fall in seignorage soon after the launching of the Real Plan, banks expanded their lending to the private sector significantly in an attempt to preserve profits. In increasing their lending to the private sector in this period, banks were also satisfying strong private demand for credit that was stimulated by the more stable economic environment.

In the early stages of the inflation stabilization program in Brazil, when the banking system was still adjusting to the new environment, two large banks faced serious difficulties that led the government to launch important programs to restructure the system. These programs and associated measures by the government prevented the occurrence of a systemic crisis.

Nevertheless, in the initial phase of the process, the smaller banks were the ones strongly impacted by the change in the economic environment and many experienced difficulties. The BCB began to intervene in banks, and a series of mergers and acquisitions took place (Table 6). Between June 1994 and the end of 1995, twenty-eight institutions were intervened by the BCB.

Table 6 - Number of institutions liquidated, intervened in or under RAET [1], and merger and acquisitons, 1994-2002

Year	Institutions liquidated, intervened in or under RAET	Merger and acquisitons
1994	10	0
1995	18	1
1996	5	8
1997	10	6
1998	6	11
1999	1	2
2000	2	10
2001	4	3
2002*	1	5
Total	57	46

Source: Central Bank of Brazil, Organization of the Financial System Department and Rocha, 2001

* Up to 15.10.2002

1/ RAET: Regime de Administração Especial Temporária (under temporary special administration)

Subsequently the situation worsened as two of the ten largest banks experienced difficulties, raising systemic problems. The government responded by putting in place the Program of Incentives for Restructuring and Strengthening the National Financial System (PROER), and measures to reinforce the BCB's power.

Furthermore, the BCB introduced measures to stimulate restructuring of the financial system. Mergers and acquisitions and transfers of shareholders were favored as the minimum capital requirement for these operations was maintained, while the requirement for establishing new banks was raised. To foster the normalization of financial market conditions, the BCB authorized banks to charge fees for financial services.

These actions increased concentration in the banking industry, especially the formation of large conglomerates (Figure 3). Some banks that changed the ownership have preserved their original names, but actually belong to a large group, and are thus under the same decision-making body. In analyzing the concentration process, therefore, these banks need to be considered as part of a single institution, as shown by Rocha (2001). Considering total assets, the Herfindahl-Hischman Index of concentration in terms of banking groups increased from 0.073 in June 1994 to 0.0812 in December 2000. The increase was more significant for the private sector – from 0.0392 to 0.0798 – and also in terms of total deposits, loans and net worth (Figure 4). [3]

One should be cautious, however, in analyzing the concentration index. Although this measure indicates a process of concentration, it does not necessarily mean that the system is concentrated. The Horizontal Merger Guidelines, from the U.S. Department of Justice and the Federal Trade Commission, use the Herfindahl-Hischman Index (HHI) of market concentration in their analysis. The Guidelines place the degree of concentration into 3 categories: unconcentrated (HHI below 0.1), moderately concentrated (HHI between 0.1 and 0.18) and highly concentrated (HHI above 0.18). Based on these guidelines, the Brazilian banking system is in the limit of the unconcentrated category. Other studies, such as the European Central Bank (2002), show that the Brazilian Banking System is less concentrated than Portugal – HHI of 0.10 –, Greece (0.11), Belgium (0.15), Holland (0.17), and Finland (0.25).

[3] See also Corazza, 2000, for an analysis on banking crises and restructuring in Brazil.

Figure 3 - Number of banks and groups, 1994-2001

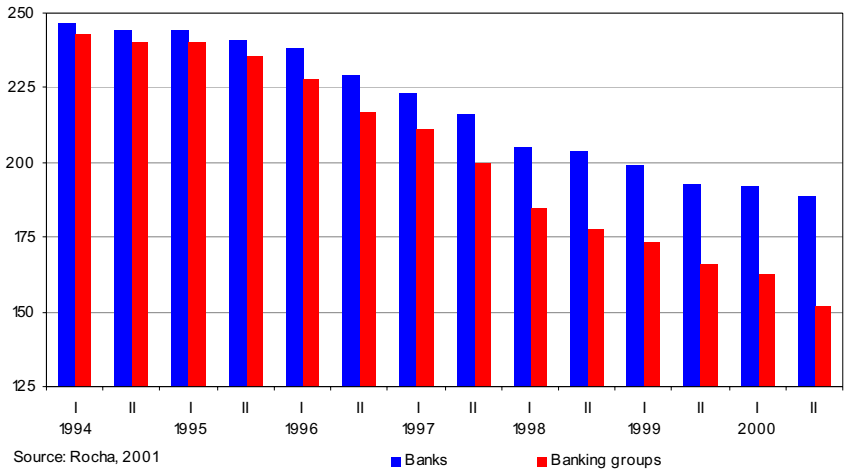
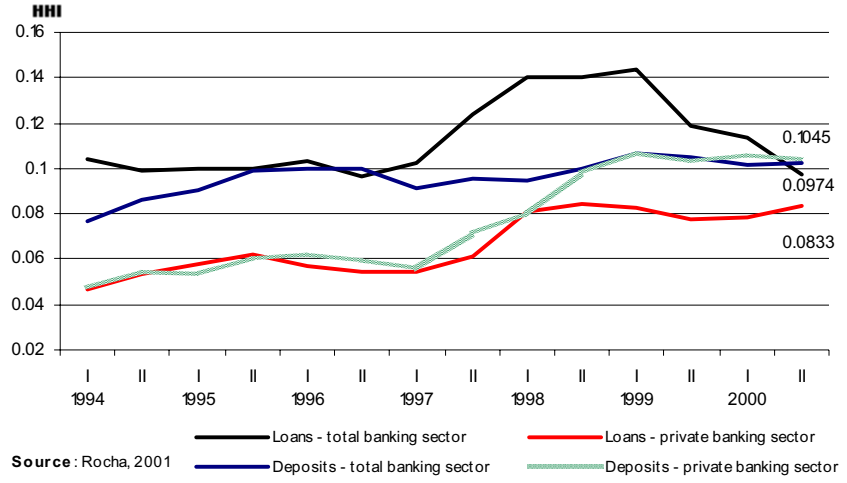


Figure 4 - Hirshman-Herfindahl Index for total loans and total deposits, total banking sector and private sector banking groups, 1994-2001



3.1 Program of Incentives for Restructuring and Strengthening the National Financial System (PROER)

Introduced in 1995, PROER was instituted to protect depositors by assuring the safety of their funds, and to prevent the emergence of a systemic crisis in the banking

system that could be costly in terms of welfare loss for the economy as a whole. Under PROER, the BCB intervened in the sixth and eighth largest banks in terms of net worth. The difficulties faced by these banks had led to a concentration of interbank market liquidity in several banks, as depositors reallocated their funds. If these funds were not redistributed appropriately among banks, the liquidity problem would have spread to the rest of the system. PROER ensured that depositors could claim their funds at any moment, and penalized bad banking practices by changing management, and by making management and owner assets non-disposable. The program incorporated some innovative aspects into the bank restructuring framework in Brazil, in particular, by requiring change in ownership of the institution, and making managers and owners legally and administratively responsible for their acts. PROER was applied 7 times. With the implementation of the Fiscal Responsibility Law (Complementary Law 101 of May 4, 2000), new operations using the PROER require specific authorization.

The procedures under PROER for large banks were somewhat different from those applied to smaller institutions.[4] PROER established that small and medium size banks experiencing difficulties would be sold with PROER tasked with financing uncovered liabilities and providing funds to offset deposit runs. Large banks in difficulties in turn were split in two, the good and bad bank. The good bank would keep the good quality assets and all deposits of the original institution, and would be sold to a new owner. The bad bank would keep problem assets and liabilities and would remain under BCB intervention to be liquidated later. Purchasers of the good bank could apply for a special credit facility from the BCB to be used to cover the costs of restructuring, reorganization and modernization.

The BCB's power to deal with problem banks and to prevent crises was also enhanced. First, new legislation in 1995 enabled the BCB to ask problem banks for (i) new funding, (ii) change of control, or (iii) a restructuring of shareholding. Until then, the BCB was enabled to act only after the problem had emerged, thus reducing the responsibility of bank owners and managers. Second, legislation approved in 1996 increased the responsibility of auditing firms by encouraging them to inform the BCB whenever

[4] More detailed explanations can be obtained in Hennings and Rocha (2002) and Maia (1999).

problems were identified, or whenever banks refused to disclose information. Also, the BCB had raised the minimum capital requirement for the opening of offices abroad by existing or new banks, while the BCB was empowered to supervise transactions carried out by these offices. Domestic financial institutions are required to include in their financial statements the operations of offices abroad to assess the compliance with the operational limits of the Basel Accord.

3.2 Program of Incentives for the Reduction of the State Role in the Banking Activity (PROES)

Official banks were particularly affected by the macroeconomic stabilization, as they had collected a large share of inflation revenue. For example, in 1993 these banks captured around 63% of the financial system's 4.2% of GDP in inflation revenues. Moreover their management practices were influenced by local governments interests, which complicated their rapid adjustment to the new economic conditions. In this context, PROES was a program aimed at reducing state government participation in financial activity, and also part of a broader program of fiscal restructuring at the state level. The objective was to eliminate the problem of state banks' poor finances, and these banks' frequent misuse that had hampered the management of state government finances.

Under PROES, depositors were protected. States applying for PROES were able to use a credit line to solve the bank's balance sheet problems up to 100% of the needed funds if the state government decided to privatize, close, or convert the institution into a development agency. Otherwise, if the state decided to keep the bank, the credit line covered only 50% of the needed funds. Under the program, ten state banks were liquidated, fifteen were privatized (of which seven were transferred to the federal government for privatization), and four were restructured. As a result, the number of state-owned banks fell from 35 in August 1996 to 12 in September 2002. [5]

[5] By August 1996 the state owned banks comprised 27 commercial banks, 5 development banks and 3 savings banks. Of this, 10 were closed, 15 were in privatization programs, 4 were restructured, 3 were kept and 3 were transformed into development agencies.

Table 7 - PROES

Situation of the banks	Number of institutions
Liquidated	10
Privatized	15
in process	5
Restructured	4
Development agencies authorized	16

Source: Central Bank of Brazil, Gedes

3.3 Program for the Strengthening of the Federal Financial Institutions (PROEF)

The process of adjustment and strengthening of federal banks – the Banco do Brasil (BB), Caixa Econômica Federal (CEF) and Banco Meridional – started in 1995. These institutions had accumulated losses over time as a result of the bad quality of their loans, which were often granted as a result of political influence in lending decisions. The first phase of the adjustment process involved the recognition of these losses. The recognition of losses forced the Federal Treasury to execute a US$8 billion recapitalization of BB. CEF was in turn a more complex case as it held housing loans.

The second phase involved a more rigorous than usual supervision effort. The supervision exercise, carried out by the BCB in 1999 and 2000, indicated the need for larger provisions. The exercise led to the creation of a special program – the Program for the Strengthening of the Federal Financial Institutions (PROEF) – in June 2001. The PROEF's basic objective was the adjustment of capital adequacy of the four public banks: the BB, CEF and two development banks – Banco do Nordeste and Banco da Amazônia. Under the program, the Government policy objective was to make these banks more competitive, transparent and efficient, as reflected in the actions already taken and in the objectives of the Consolidated General Inspection. As a result of this process, the federal banks are now required to comply with capital requirements stricter than those recommended in the Basle Accord.

The PROEF framework involved three actions: (i) the transfer of credit risks to the Treasury or a Special Purpose Company (Emgea); (ii) exchange of assets with low liquidity and low interest rates for more liquid instruments paying market interest rates; and (iii) a capital increase in three of these four banks. The Emgea was in turn tasked with managing credits transferred from federal banks to the Treasury. The program represented an addition of R$12.18 billion to the Treasury debt and R$ 62.4 billion of bonds issued.

3.4 The fiscal cost of the banking crisis in Brazil

In the last two decades, banking crises – defined as a concentrated number of bank failures – have occurred in many countries, with large impacts on the fiscal accounts and economic activity. In this section, we estimate the fiscal cost of bank restructuring in Brazil taking into account the impact on the Net Public Sector Debt, i.e., the additional new issuance of bonds needed in the year the events took place. The estimate under this procedure is still preliminary as the BCB and Treasury are still collecting revenues from the outstanding loans provided by PROER and PROES. Using this methodology, the fiscal impact of the PROER was 0.88% of GDP until June 2002. The cost of PROES reached 5.68% of GDP based on bonds issued minus privatization revenues. For PROEF, the net debt was increased by 2.09% of GDP. The fiscal cost of the three programs together amounted to approximately 8-9% of GDP.

The cost of the Brazilian restructuring programs was relatively low as compared to other countries. In a sample of 40 countries, Honohan and Klingebiel (2000) found that the average fiscal cost of bank restructuring was 12.8% of GDP. For developing countries, the cost was even higher, reaching 14.3% of GDP – in the range of 20% to 55% of GDP in the cases of East Asia. Estimates by Hoggarth, Reis and Saporta (2002) for the fiscal and quasi fiscal costs of banking crises amounted to 12.1% of GDP on average for high income countries and 17.6% for medium and low income countries (Table 8). Boyd and Smith (2000) and Rojas-Suárez and Weisbrod (1997), obtain similar results.

Table 8 – International Evidence of Banking Crisis Costs

Country	Period	Fiscal and quasi-fiscal costs/GDP
High Income Countries (average) [1/]		12,1
Argentina	1980-1982	55,3
Argentina	1995	1,6
Brazil	1994-1996	5 - 10 (8,6*)
Chile	1981-1983	41,2
Colombia	1982-1987	5,0
Indonesia	1997-	50 - 55
Malaysia	1985-1988	4,7
Mexico	1994-1995	20,0
Thailand	1983-1987	1,5
Thailand	1997-	42,3
Uruguay	1981-1984	31,2
Venezuela	1994-1995	20,0
Medium and Low Income Countries (average)		17,6

Source: Hoggarth, Reis and Saporta, 2002

1/ Average costs from: Finland. Japan, Korea, Norway, Spain, Sweden and United

* Author's estimate

3.5 Increasing the presence of foreign banks

In 1995, the government allowed foreign participation in the privatization of the banking sector for the first time and then widened the scope of foreign participation by allowing foreign bank entry into the domestic market irrespective of the privatization process. Foreign banks entered the Brazilian market by acquiring domestic banks through the privatization process (PROER) and also through normal mergers and acquisitions. As observed in other emerging market economies, the participation of foreign banks has increased in recent years, helping to stimulate competition and consolidation in the domestic system.

The main argument for opening the banking industry was to improve competition by increasing the supply of products and services, thus producing more efficiency and cost reduction. Another benefit would be the transfer of more advanced technology in terms of credit operations and risk evaluation, which would help to reduce bank spreads. All these

factors would contribute to improved efficiency and soundness, and therefore make the banking sector more resilient to adverse shocks. In fact, competition has been stimulated by increased foreign participation in the domestic market. The opening of the market to – and increasing share of – foreign banks can be evaluated in terms of inflows of foreign direct investment into the sector that have amounted to US$19.8 billion, or 15 percent of total FDI, over the past seven years. This tendency can also be noted as foreign banks have captured an increasing share of assets and deposits, as shown above in figure 1 and table 2.

4. The role of the financial system in preserving the real value of private savings

One of the financial system's key roles is to provide financial services to households and firms (for example, allowing intertemporal smoothing of consumption and expenditures). The issue we examine in this section is whether the financial system in Brazil has fulfilled this objective. We conclude that Brazilian financial system has been able to provide firms and households with safe liquid financial instruments, and to carry purchasing power forward in time, so that money has remained mostly at home.

Brazil´s economic history has helped to shape its financial system structure and characteristics. High volatility of the main macroeconomic variables – high inflation prior to the Real plan and, subsequently, high volatility in real interest rates and, with the floating exchange regime, also in exchange rates – has led to a system resilient to shocks. In fact, in the period after the launching of the Real Plan, the Brazilian economy faced a sequence of exogenous shocks, but the financial system was able to preserve its investor and depositor base, as shown in Table 9.

Table 9 - Financial savings as proportion of GDP, 1995-2002

% GDP

	1995	1996	1997	1998	1999	2000	2001	2002 July
Mutual Funds	11.6	16.3	16.2	17.1	24.2	28.2	30.2	27.6
Savings Accounts	9.8	9.2	11.1	11.8	11.5	10.3	10.0	10.6
Time Deposits	12.6	10.3	10.0	9.7	9.8	8.3	9.1	10.2
Total	34.0	35.8	37.3	38.5	45.6	46.8	49.3	48.4

Source: Central Bank of Brazil, Economic Department

An economy with a healthy and well-developed financial market is, in principle, capable of adapting rapidly to a high inflation environment by offering a broad set of fairly liquid, high-yield instruments denominated in domestic currency ("quasi-monies") that preserve the real value of firms' and households' portfolios. In contrast, a "financially repressed" economy undergoing high inflation generally offers domestic residents few options other than to seek protection in foreign currency denominated assets and instruments.

In general, the financial and institutional frameworks of an economy determine whether the flight from domestic money results in a rapid and sizable process of currency substitution. The relative importance of foreign currency to hedge against inflation will be inversely related to the economy's level of financial development. Depositors need to be assured that the real value of their financial assets will be preserved, as well as that domestic financial assets are safe instruments. This would require a sound financial system and confidence that, for example, those assets would not be frozen or unilaterally restructured by the government.

We claim that the rapid response by the Brazilian financial system to a changing and turbulent environment, plus actions by the government, have not only preserved the value of residents' deposits invested in domestic assets, but also helped to insure them against exogenous shocks. These protections have helped to reinforce domestic households' and firms' confidence in domestic financial assets. Over time, the financial system has introduced new financial products to preserve the value of households' and firms' assets.

The government, in turn, has had a critical role in providing the mix of public debt instruments that banks needed in order to frame products to protect savings against macroeconomic instabilities. The government benefited as it was able to finance itself domestically through a variety of indexed instruments in the period of high inflation and especially when external financing – both to the sovereign and the private sector – was closed for Brazil during the period in which the country was in arrears on its external debt.

Brazil has experienced several episodes of high inflation, but these not give rise to a significant process of currency substitution (see Bevilaqua & Garcia, 1999). Experiences in other economies show that high and variable inflation rates encourage a flight from domestic money and raise demand for alternative assets, including those denominated in foreign currency.

Figure 5 - Inflation path, Consumer Price Index (IPCA), monthly variation, 1991-2002

Source: Central Bank of Brazil, Economic Department

Sudden outbursts of inflation do not generally lead to a massive flight from the domestic money, nor do protracted periods of high inflation erode at the same time or pace the three basic functions of the national currency – store of value, unit of account and medium of exchange. Instead, the flight from money in high inflation countries tends to be a gradual process, whereby the national currency loses its functions in sequence. The store-

of-value function is typically the first to go, but it usually takes a prolonged period of high inflation – or a hyperinflationary burst – before the domestic money starts losing its roles as a unit of account and, especially, as a medium of exchange (Calvo & Végh, 1992).

Although, banks were able to manage rather complex indexation arrangements and thus preserve the value of local currency assets during the years of hyperinflation, the Brazilian banking system is still adjusting to a more competitive market environment. Table 10 shows how the composition of corporate and household holdings of government securities has evolved from 1991-2002. This evolution essentially reflects the macroeconomic circumstances faced by economic agents. Contrary to some other high inflation countries in Latin America, Brazil was never a dollarized economy. Indeed, despite a series of failed stabilization plans – involving six monetary reforms in ten years – GDP growth in Brazil suffered relatively less damage than one would expect for an economy experiencing such a chronic high inflation process, though potential GDP growth had been hampered and all sorts of distortions developed. Indexation, the adaptive policy response, became pervasive throughout the economy and its capacity to accommodate inflation may perhaps partially explain Brazil's failure to engage in serious structural change before 1994.

Table 10: Composition of the Domestic Public Sector Debt (Marketable), held by private sector by remuneration

% of total

Year	Fixed rate	Selic 1/	Price index linked	Forex linked	Others
1991	16.06	67.17	5.30	11.47	0.01
1992	54.80	9.04	23.56	3.00	9.60
1993	26.41	3.78	42.08	17.26	10.47
1994	40.20	16.03	12.51	8.29	22.96
1995	42.70	37.77	5.26	5.28	8.98
1996	61.00	18.61	1.75	9.38	9.26
1997	40.91	34.78	0.34	15.36	8.61
1998	1.68	70.98	0.37	20.91	6.07
1999	9.19	61.09	2.37	24.23	3.11
2000	15.34	52.36	5.87	21.70	4.74
2001	7.21	53.76	7.08	28.11	3.84
2002*	10.95	52.22	8.72	26.35	1.76

Source: Central Bank of Brazil, Economic Department

* September

1/ Selic is the overnight interest rate

The dollarization process, defined as currency substitution (or dollarization of narrow money), or dollarization of less liquid assets such as time deposits (Catão and Terrones – 2000), has not occurred in Brazil. Use of foreign currencies for domestic purposes has been negligible. Domestic use of foreign currencies is not allowed in Brazil; but even informally such practices have been very limited. Usually, firms and households look for financial assets with the appropriate indexation that will preserve real value. Therefore, the most usual movement in the Brazilian financial system has been the allocation of funds among modalities of financial assets, due to differences in returns, or migration of deposits between banks, due to differences in confidence.

The dollarization of less liquid assets has not occurred either. Ize and Yeyati (1998) estimated the actual dollarization for some countries taking the average of total dollar deposits to total domestic and cross-border deposits for the period 1990-1996. The ratio for Brazil was 11.6% at the end of 1996 (Table 11). This figure can be compared with the ratio of 1.46 percent of Brazilian residents' deposits abroad in December 2001 – the result of the BCB survey on Brazilian Capital Abroad – to total domestic deposits plus deposits abroad. The ratio is adjusted upward to 7.38% if it is assumed that all deposits abroad are demand deposits.

Table 11 - Dollarization in emerging markets at the end of 1996

Country	Dollarization ratio
Bolivia	97.9
Hungary	36.9
Mexico	32.1
Peru	80.5
Poland	24.1
Chile	14.2
Brazil	11,6 (1,5 - 7,4*)
Israel	18.2

Source: Ize, Alain and Eduardo Levy-Yeyati, 1998

Note: Actual dollarization ratio is obtained as an average of total dollar deposits over total domestic and cross-border deposits for the period

* Author's estimate

Most banks have shown a strong preference for holding government securities, as well as short-term interbank placements. The preference for government securities is explained by their high liquidity and the fact that their rate of return adjusted for risk has been maintained at appropriate levels. Typically, the sum of these two categories of earning assets has been comparable to loans. For the banking system, securities and interbank placements make up a high 37 percent of total assets.

Innovations in telecommunications and computing were another factor contributing to the Brazilian financial system's ability to build a network of financial services to protect their customers from inflation. Also, as mentioned, direct official intervention was also required to ensure a sound banking system through restructuring banks, reinforcing prudential supervision and regulation. In the early phase of the stabilization program, some measures of a prudential nature were implemented, such as controls on capital inflows and an increase in reserve requirements to offset, on the external front, easy credit conditions in the international financial markets and, domestically, the exuberance of the wealth effect resulting from the sharp fall in inflation.

In a context of high uncertainty, the financial sector has fulfilled the role of intertemporal risk sharing; but much needs to be done in terms of its intratemporal allocation of risk function through intermediation. With the acceleration of inflation in the mid-1980s, indexation intervals became shorter and an increasing share of deposits was held in accounts linked to the daily behavior of overnight interest rates. Traditionally, private banks have restricted their private sector lending to short-term, self-liquidating commercial transactions. Medium- and long tem finance to industry and agriculture has mainly been provided by specialized federally owned institutions and development funds. The Brazilian banking sector, therefore, is not yet playing as full a role as it could in financial intermediation. Instead of intermediating credits to the private sector, banks have mainly engaged in short-term treasury operations. As a result, enterprises and households in Brazil have been disadvantaged by the lack of access to credit.

Brazil has also built a fairly sophisticated payment system motivated by the need to cope with high inflation rates (Listfield and Montes-Negret, 1996). This development was partly a result of the need to create alternative, quasi-money indexed financial assets before the launching of the Real Plan. During the high inflation period, the Brazilian payment system achieved a high degree of technological progress, especially aimed at enhancing the speed of processing financial transactions. Investments that would not be feasible in a low inflation environment turned out to be profitable. Costs were not incurred directly by the clients but rather compensated by float yields from inflation, which boosted the technological advances. The search for lowering the exposure of money balances to the effects of high inflation, for instance, motivated the widespread use of automation in check clearing. In other words, technology and human capital in banking, which are a legacy of the inflationary environment, were "positive" externalities to the further development of the payment system.

Furthermore, the external debt crisis in the early 1980s was crucial for the automation of foreign exchange transactions. The need to pursue a tight control of the cash flow in foreign currencies by the BCB encouraged the development of the settlement process, including the introduction of electronic inputs in the domestic currency leg of foreign exchange transactions in substitution for inputs via Telex.

The Brazilian financial system has weathered well the difficult economic environment in the process of adjustments – domestic and external – observed in the stabilization program. The exchange rate devaluation of January 1999, for instance, seems to have been anticipated by most financial institutions, which had reduced or hedged their external exposures. The relatively high share of government securities and interbank placements in banks' portfolios proved important in 1998 and the 1999, as many foreign banks withdrew credit lines to Brazilian financial institutions. By virtue of the large holdings of liquid, dollar indexed government securities, most banks were able to meet the withdrawal without suffering severe liquidity problems, and without having to call on the BCB to provide emergency liquidity.

5. Challenges to promote growth

Although financial institutions in Brazil have been efficient in preserving the value of financial assets, they have been struggling to perform the role of intermediating savings for investment. This section analyzes the relationship between growth and the development of the financial system in Brazil.

A fundamental role of the financial system is to channel household savings to the corporate sector and allocate investment funds among firms. In Brazil, both macro and microeconomic factors, which are reflected in high bank spreads and low credit to the private sector, have acted as constraints on the financial sector providing longer-term loans.[6] As compared to the average of upper middle-income countries, the volume of credit to GDP is relatively low in Brazil. Firms have relied on self-financing, or on long-term credits from official agencies.

Levine's (1996) survey of the literature on finance and development concludes that "the preponderance of theoretical reasoning and empirical evidence suggests a positive, first-order relationship between financial development and economic growth"; but – as he noted – this must be stated hesitantly and with ample qualifications. A growing body of empirical analyses, including firm-level, industry-level and individual country studies, and broad cross-country comparisons, demonstrate a strong positive link between the functioning of the financial system and long-run economic growth – that the financial system contributes to growth. Theory and evidence in turn make it difficult to conclude the opposite that the financial system merely – and automatically – responds to industrialization and economic activity, or that financial development is an inconsequential addendum to the process of economic growth.

On conceptual grounds, the role of financial institutions, markets and instruments in an economy is associated with the need to mitigate the effects of information and transactions costs. These costs may inhibit liquidity and intensify liquidity risk. Liquidity is

[6] See OECD, 2001.

defined as the ease and speed with which economic agents can convert assets into purchasing power at agreed prices; and liquidity risk arises due to uncertainties associated with converting assets into a medium of exchange. Liquid capital markets are markets where it is relatively inexpensive to trade financial instruments and where there is little uncertainty about the timing and settlement of those trades. Informational asymmetries and transactions costs, therefore, create incentives for the emergence of financial markets and institutions that augment liquidity.

The link between liquidity and economic development arises because some high-return projects require a long-run commitment of capital, but savers do not like to relinquish control of their savings for long periods. Thus, if the financial system does not augment the liquidity of long-term investment, less investment is likely to occur in the high-return projects. With liquid capital markets, savers can hold liquid assets that they can quickly and easily sell if they seek access to their savings. Simultaneously, capital markets transform these liquid financial instruments into long-term capital investments. By providing demand deposits and choosing an appropriate mixture of liquid and illiquid investments, banks provide complete insurance to savers against liquidity risk while simultaneously facilitating long-run investments in high return projects.

Thus the financial system facilitates the trading, hedging, diversifying, and pooling of risk; allocates resources; monitors managers and exerts corporate control; mobilizes savings; and eases the trading of goods, services, and financial contracts. Banks, mutual funds, and securities markets all provide vehicles for trading, pooling, and diversifying risk. The financial system's ability to provide risk diversification services can affect long-run economic growth by altering resource allocation and saving rates.

In the case of Brazil, we are particularly interested in the financial system's function of facilitating the management of liquidity and idiosyncratic risks. These concerns are related to the environment of high inflation and volatile nominal variables – especially interest and exchange rates – that the country has experienced over the past decades.

Empirical tests show that the maintenance of residents' deposits in the Brazilian financial system during the period of high inflation and external shocks was an important element in preserving GDP growth even in extreme circumstances. Carneiro de Matos (2002) tested the causality between financial development (D) and economic growth (Y) by adopting the following specification:

$$\Delta Y_t = a + \sum_{j=1}^{k} b_j . \Delta Y_{t-j} + \sum_{j=1}^{m} c_j . \Delta D_{t-j} + dU_{t-1} + u_t$$

$$\Delta D_t = \alpha + \sum_{j=1}^{k} \beta_j . \Delta Y_{t-j} + \sum_{j=1}^{m} \delta_j . \Delta D_{t-j} + \delta V_{t-1} + \upsilon_t$$

where U and V are error-correcting terms; k and m, lags of Y and D respectively.

Carneiro de Matos shows that GDP growth is affected positively by credit to the private sector (1964-2000) and the extent to which residents are willing to maintain their assets in the domestic financial system. He used other parameters but the results were weaker. Using, among other parameters, the ratio of residents' funds deposited in the financial system to M2 (1947-2000) as a proxy of financial development, empirical tests support the view that it is important to preserve the public's confidence in domestic financial assets to improve GDP growth prospects. This ratio may reflect an intangible asset of the financial intermediaries, i.e. the general public's confidence that contracts between customers and these intermediaries would be respected and protected. As long as deposits are maintained in the domestic system, the possibility of financial activities to develop domestically increases. Brazil had experienced changes of inflation indexes, forced lengthening of deposit maturities, banking failures, inflation and unstable macroeconomic policies, among other factors, which hampered somewhat households' and firms' confidence in the system. Economic agents have thus become more risk averse regarding investments in domestic assets, which may be reflected in the high interest rates and shorter-maturities prevailing in the economy.

Carneiro de Matos applied capital accumulation and macroeconomic instability as control variables. For the first variable, he used the capital stock to worker ratio and for the

second, the volatility of the monthly inflation rate. The empirical tests suggested, as a general result, that the causality is from financial development to economic growth. The variable "asset held by public in the system" indicated that financial development affects output per capita at the 5 percent level of significance for the null hypothesis of no causality between variables. If controlled by capital stock to worker and macroeconomic instability, the level of significance was reduced to 2.5 percent. The feedback hypothesis that GDP per capita causes the financial variable was rejected. Regarding the ratio of credit to the private sector to GDP, the null hypothesis was rejected at the 2.5 percent level of significance, and when controlled by capital stock and macroeconomic instability, the level of significance fell to 1 percent. The reverse causality, however, indicated a level of significance of 10 percent when the control variables were applied.

Another feature of the Brazilian financial system has been enterprises' reliance on self-financing, particularly for small and medium sized firms, which have often lacked access to credit markets. The generally high real interest rates prevailing in the country for many years now, as well as two decades of high and variable inflation that preceded the introduction of the Real Plan in mid-1994, encouraged Brazilian enterprises to reduce their reliance on debt financing and to rely more on retained earnings. As a result, Brazilian companies entered the 1990s with balance sheets that looked fairly underdeveloped when compared to companies in other countries. There is thus room for further gains to expand credit to the private sector, but the extent to which credit could be expanded requires careful consideration. As Allen and Gale (2000) note, for most developed countries internal finance dominates external finance, while in a range of emerging countries, external finance is more important. There seems to be, hence, no clear indication of what an appropriate level of credit to GDP would be, with this ratio instead possibly depending on the characteristics of each economy.

Private investments have been primarily financed by long-term credits from official agencies, especially from the national investment bank (BNDES). Brazilian enterprises' working capital has been financed by expensive short-term local currency loans. Also, their

balance sheets show a fairly large position in real assets (such as real estate) that were used to hedge against inflation instead of in the production process.

The disinflation brought about by the Real Plan has led to considerable corporate restructuring. This entailed two complementary strategies: reducing debt by liquidating unproductive (real) assets; and replacing expensive short-term bank debt with medium-term capital raised in either local, or increasingly, international capital markets.

Despite these restructurings that have taken place over the past few years, the level of indebtedness of Brazilian non-financial enterprises is still low compared with other Latin American countries. Although the advent of low inflation under the Real Plan in and of itself probably encouraged an increase in the supply of loanable funds, the demand for borrowing has been discouraged by the high real interest rates that have prevailed over the last several years due especially to the turbulent external environment. At the same time, in view of fiscal imbalances, lending to the private sector has also stagnated over the last several years, suggesting a classical case of crowding out.

The largest domestic enterprises and the multinational firms operating in Brazil have access to external markets as alternative sources of financing. Most firms with foreign currency liabilities either had a natural hedge in the form of foreign currency receivables, or hedged themselves in other ways, for example by acquiring U.S. dollar-indexed government securities. Those few enterprises that were unhedged or only partially hedged are typically the Brazilian subsidiaries of foreign conglomerates that may be assumed to provide sufficient financial backing.

The consequence of the relatively low gearing of Brazilian companies and their limited exposure to foreign currency risk is that the non-financial corporate sector was not seriously affected by the depreciation of the Real in recent years, nor by the continuing relatively high level of interest rates. For industries and firms that rely heavily on external financing, growth is faster in countries with well-developed banks and securities markets than in countries with poorly developed financial systems (Levine, 1998). Yet, in the

process of liberalizing the financial markets in Brazil, prudent expansion of credit to the private sector, requires further efforts in terms of macroeconomic stability and institutional reforms.

6. Recent progress to strengthen the Brazilian Financial System

In order to reduce high lending rates, interest margins and overhead costs, and low levels of credit as a proportion of GDP further progress is needed. This section describes the recent effort to strengthen the Brazilian financial system.

The major impediments to the development of more active medium- and long-term lending operations by the private banking sector are uncertain macroeconomic environment, notably high and volatile real interest rates, and crowding-out by the public sector's financing needs, at both federal and state levels. A continued commitment to a policy consistent with low inflation as followed since the launching of the Real Plan in 1994 is an important element. It is fundamental to persevere in the fiscal adjustment to enhance the credibility of macroeconomic policies, which would contribute to a sustainable reduction of interest rates. Improved fiscal performance and better management of the public debt is expected to create incentives for financing the private sector.

Co-ordination of macroeconomic policies has already led to substantially lower real interest rates. But other reforms are needed to reduce spreads in the economy. The cost of financial transactions needs to be reduced by reforming the tax system.

Since 1999, the BCB has been working towards the reduction of the interest rate spreads of domestic credit operations to a pattern more consistent with similar economies.[7] It has followed – whenever economic conditions allow – a policy of gradual reduction of reserve requirements and cuts in the financial market tax rate. Reducing reserve

[7] A specific annual report is published by Central Bank of Brazil presenting analysis on the development of loans and banking interest rates and spreads, as well as research papers on this field (Banking Interest Rates and Spreads in Brazil, 1999, Banking Interest Rate and Spreads in Brazil - Evaluation of 1 year of the Project, 2000a, Banking Interest Rate and Spreads in Brazil - Evaluation of 2 years of the Project, 2001). In 2002 the

requirements and directed credit could reduce bank spreads and net margin. Until the beginning of 2001, banking interest rates had been showing a downward trend, with more credit being offered, longer tenors and reduced default levels. Since early 2001 however, these trends reversed, due to the Argentine crisis, energy rationing, and the deceleration in the U.S. and world economies, with the consequent increase in the Over-Selic rate and the devaluation of the exchange rate. These effects are probably temporary and the outlook points to spreads returning to their downward trend as soon as the uncertainties are reduced. The volume of credit, on the other hand, remains on an upward trend, although at a slower pace. The segment of freely allocated resources in the past 12 months performed consistently with the change in the macroeconomic scenario observed in the Brazilian economy.

6.1 Interest rates and spreads in Brazil: Recent Studies

Despite the trend observed recently, bank spreads remain high by international standards. Part of the explanation for these spreads may be a certain degree of hysteresis in the system may. As mentioned, for many years, Brazilian banks had focused on treasury operations. The assets sold to clients as protection against inflation had to be very liquid, as they were cash substitutes. Even with indexation, a volatile inflation rate made intermediation very risky. To compensate this risk, private banks resorted to extremely high spreads in their lending interest rates, as well as very high levels of collateral. In addition, bank interest rates have presented high and persistent dispersion across banks. These elements displace a market where productive inefficiencies and regulatory constraints give room for some banks to operate even charging much higher interest rates than their competitors.

With inflation under control and a more stable macroeconomic environment, there has been a notable trend towards a more balanced credit market, with a vigorous fall in bank interest margins and an increase in credit to the private sector. Since 1995, interest

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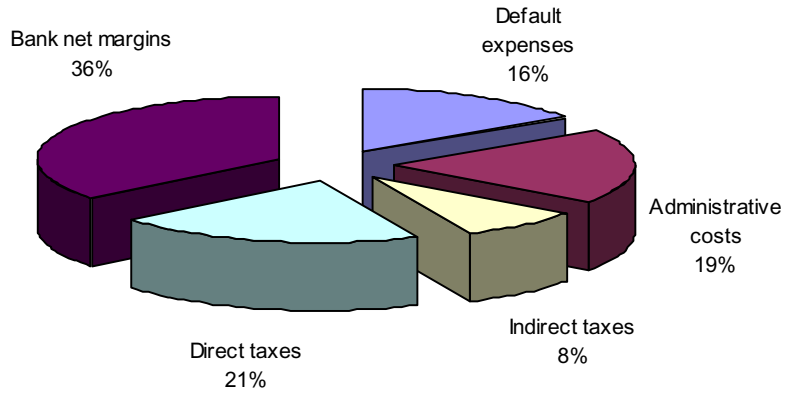
report take a broader form: The Economics of Banking and Credit - Evaluation of 3 years of the Project Interest Rates and Spreads in Brazil, 2002d.

spreads have been in a downward trend. The overall interest spread has fallen from an annual rate as high as 135 percent in 1995 to 35 percent in 2001 (Figure 2).

The estimates for the composition of banking spreads are: default expenses (15.8% of the spread), administrative costs (19.2%), indirect taxes (8.2%), direct taxes (21%) and bank net margins (35.7%) (Figure 6).

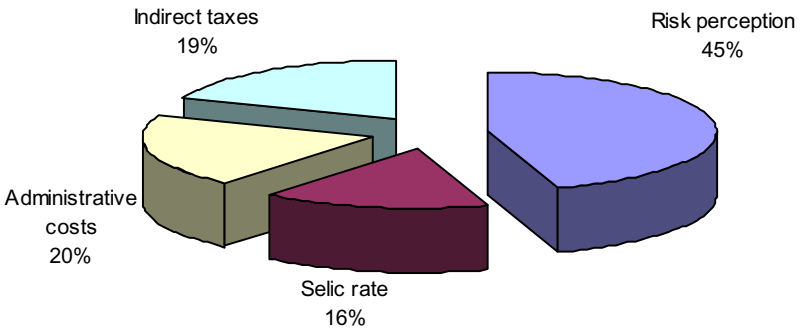
Figure 6- Accounting decomposition of banking spreads



Source: Central Bank of Brazil, 2001

The results of econometric tests indicate that 45% of the behavior of banking spreads is due to risk perception. Other factors are the Selic rate (16% of the spread), administrative costs (20%) and indirect taxes (19%) (Figure 7).

Figure 7 - Econometric decomposition of long-term spread



Source: Koyama and Nakane, 2002b

Some measures taken by the BCB since October 1999 have, along with a favorable environment, helped to gradually reduce banking spreads. In 2001, however, uncertainties resulting from domestic and external adverse shocks led the spreads to return to levels observed in January 2000. Based on such developments, Koyama and Nakane (2002a) investigated the existence of cyclical and inertial (persistent) components in the composition of spread time applying the ARFIMA[8] model. The following equation was estimated to express the relationship among the variables:

$$\ln spread_t = -0{,}0003\ Tend_t + 0{,}503 \ln selic_t + 1{,}554 \ln adm_t + 0{,}219 \ln risk_t + 0{,}723 \ln imp_t$$

where

$spread_t$ is the ratio of (1+) the interest rate of the lending operations in the freely allocated resources segment and (1+) the rate on the funding (30-day CDB), both monthly;

$Tend_t$ is a deterministic trend, to control the effect of other variables such as inflation rate and economic activity level on spread;

$selic_t$ is (1+) the average daily rate of Selic operations expressed monthly;

adm_t is (1+) the proportion of administrative costs in the volume of credit;

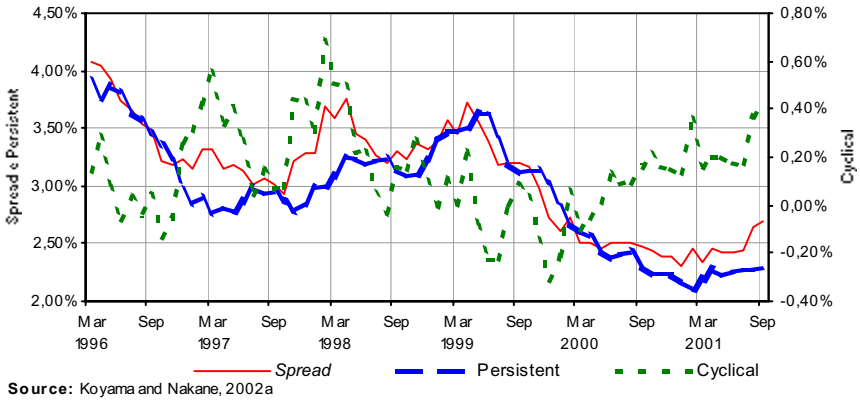
[8] Autoregressive Fractionally Integrated Moving Average

$risk_t$ is (1+) the yield of C-Bond over the U.S. Treasury yield with same maturity, monthly expressed;

imp_t is (1+) the indirect taxes quote, representing the weight of IOF, PIS, Cofins and CPMF in a 1-month loan funded through a 30-day CDB.

The econometric exercise indicated that the banking spread series has a "long memory." Figure 8 shows the behavior of the spread decomposed into cyclical and persistent components. After May 2000, the persistence component was below the spread series, while the cyclical component contributed significantly to the widening of spread. The historical analysis of the trend shows that the banking spread may be brought to its persistence component as soon as the macroeconomic environment becomes smoother, reversing the decoupling observed since May 2000. The persistence corresponds to a relationship between observations in time t and in lags of k (t-k).

Figure 8 - Spread Composition - Cyclical and Persistent Factors



Source: Koyama and Nakane, 2002a

Afanasieff, Lhacer e Nakane (2002) applied the two-step approach based on an adaptation of a model of bid-ask prices of securities dealers to the determination of banking spreads. The objective was to decompose the main determinants of the interest spread into microeconomic variables – inefficiencies or lack of competition of the sector, for example – and macroeconomic variables – volatility of the basic interest rate, inflation and economic growth.

Their empirical exercise using panel data from 142 banks for the period February 1997 to November 2000 showed the relevance of the macroeconomic conditions on bank's observable characteristics as the main determinants of bank interest spreads in Brazil. Some unidentified factors, however, still account for a large part of the behavior of spreads. It is thus unclear whether further reductions could be achieved with improvements in macroeconomic conditions only. Given the nature of the cross-sectional dispersion, spreads seem to be more affected by changes in microeconomic environment that touch upon industry structure and modify the behavior of banks to improve managerial practices. For the BCB's policy, the conclusion is that priority should now be focused on improvements in prudential regulation and supervision instruments as the most effective instrument to ensure the convergence of local banks toward international best practices.

Cardoso (2002) in turn shows the effect of seignorage on banking spreads. In all regressions, bank seignorage revenue has the expected negative sign and is significant: an increase in seignorage collected by commercial banks reduces the spread. Bank seignorage revenue would depend on the interaction between inflation, the market for demand deposits, and the rate of reserve requirements imposed by the BCB. Intermediation costs usually rise with inflation because of the following reasons: inflation shortens the maturity of contracts and thus requires more frequent interest rate transactions per unit of assets. Chronic inflation leads to an expansion of the branch network as banks compete for low cost deposits by offering more services and branches. Lower inflation would increase operational cost relative to banks' income, but this effect appears to be smaller than the response to other variables, such as explicit taxes on financial intermediation and the costs of provisioning for non-performing loans.

The author also noted that the modest credit to GDP (28 percent in 2001) cannot be attributed to the lack of sophisticated credit analysis or lending capacity but from high interest rates, high reserve requirements, and government-directed lending. High levels of taxation and the costs of non-performing loans also affect bank spreads between interest rates on deposits and those on loans. Since the stabilization of inflation in 1994, the role of

explicit taxation on financial intermediaries became more important for the explanation of the behavior of bank spreads than reserve requirements and bank seignorage revenue.

Empirical evidence indicates that financial liberalization – i.e., elimination of credit controls, deregulation of interest rates, private ownership of banks, free entry into the banking sector, freely flowing international capital, and bank autonomy over internal governance procedures under good regulation and supervision – may promote both financial deepening and a more efficient allocation of investment.

6.2 Microeconomic and structural reforms

There are also important microeconomic reasons for the low level of financial intermediation. The BCB has been taking measures to reduce interest rates and banking spreads, with particular emphasis on structural and microeconomic factors:

Information

To foster competition and the culture of credit, the BCB has been aiming at disseminating and improving the quality of information. In this regard, when the project of the Payment System was released, the BCB started to disclose on its website basic information on interest rates charged by financial institutions. It also responded to demands for quality and detail of this information. The Accounting Statements of Financial Institutions (Cosif) was revised in order to adjust its accounting reporting standards to international patterns, amplifying its transparency.

To boost competition and to strengthen customers' power, since last April, more detailed information on the overdraft account was reinforced. The financial institutions are obliged to give to their customers information filed over the past two years, including personal data, historical credit and financing operations, and average monthly balance in the current accounts and in the other types of investment. Aiming at improving transparency on overdraft accounts, commercial banks must disclose more detailed

information about the financial fees on overdrafts, even in the monthly statements free of charge, comprising the period considered for the charge, the effective interest rate, and the amounts charged each month.

Among measures adopted to reduce costs of financial intermediation, the BCB introduced a Credit Risk Data Center ("Central de Risco de Crédito") in 1997. This Center functions to provide information on the quality of loans to individuals and economic groups, which is becoming an effective tool to improve credit portfolio monitoring for both the BCB and individual banks.

The credit risk system is used to measure the overall exposure of the banking system to any one borrower, with differences in the details that are required for the reporting of large exposures. All bank financing (loan, leasing operation, advance, guarantees given, or losses on such operations) that exceeds R$ 5,000 (equivalent to US$1,700 as of mid 2002) and any collateral attached to such financing must be reported monthly, loan by loan, classified by entity exercising ultimate economic control over the borrower. Information provided by the system includes debts forgiven, collateral protection and internal loan grading information. The BCB has devoted considerable effort to ensuring that banks are accurately filing borrower information in the system. Banks have been able to incorporate information from the risk bureau into credit scoring models for use in evaluating prospective borrowers. The high utility of the system stems from the fact that most borrowers have loans with more than one bank.

The information provided for the Credit Risk Data Center was widened. The data gathered on this center now includes information on good performance, and financial institutions may access them to analyze credit profile. A detailed revision is under progress, to be finalized by November 2002, with support of market experts and international consultancies, with high investment in information technology. The BCB is preparing a comprehensive text about the Credit Risk Data Center, explaining how it works and detailing its effects on lending interest rates. The inclusion of a specific page on the BCB's website is under development.

New Payment System

An important project is the launch of the new Payment System in June 2002.[9] The core features of the new payment system are: (1) clear definition of the role of the BCB in the payment system and establishment of a well-founded legal basis to allow better risk control devices; (2) setting up of a large-value fund transfer system at the BCB, operating under a real-time gross settlement (RTGS) mode and a real time monitoring of banks' reserve account balances to avoid the possibility of overdrafts at any time; (3) enabling clearing houses to assume certainty of settlement through the establishment of proper safeguard mechanisms; and (4) clear definition of all the risks involved in every stage of the pre-settlement and settlement process. The restructuring of the system was carried mainly to address two concerns: the episodes of overdrafts on Banks' reserve accounts and systemic risk issues.

Credit Risks: Legal Improvements

Imperfections of the legal system are likely to be an important bar to developing credit markets (OECD, 2001). Although difficult to quantify, the lack of effective bankruptcy procedure and secured credits is an important contributor to the cost of financial intermediation. Even secured lending is rather problematic as, under existing commercial legislation, enforcing claims on collateral is difficult given the debt's lack of seniority to federal, state, and local authorities as well as to employees. This situation has been further aggravated by moral hazard, arising from a bias towards borrower protection where disputes arise.

[9] See Central Bank of Brazil, 2002a and 2002e, Investor Relations Group reports on the restructuring of the Brazilian Payment System. See also Sales, 2002, for a more complete analysis.

To reduce the legal risks in credit operations, the BCB is working towards authorizing more adequate financial instruments, fostering improvement in the guarantees of operations, and the minimization of losses in cases of insolvency. In October 1999, the Banking Credit Note was created, a credit instrument with quicker and easier transit through the Judiciary system, and the liquidity of the credits supported by this note was increased in March 2001. The coverage of chattel mortgage as a guarantee was widened and now includes securities and other credit instruments, in addition to goods and real estate. It gives room to more credit operations with thus type of guarantee, which has historically had lower interest rates and banking spreads.

Additionally, the netting of obligations in derivative instruments was permitted. Provisional Measure n. 2,192 contemplates the possibility of agreements to net obligations. The netting is therefore not affected by insolvency, creditor's agreement, bankruptcy, intervention or liquidation: after the netting, if there is a positive balance in favor of the insolvent party, it will be transferred in order to be part of the bankruptcy; if the balance is negative, it becomes a credit against the insolvent party. The target of this rule is the set of hedging operations disseminated in the past years and that must be protected in default situations, and liquidated by difference. The better protection these operations may have, the lower the risk, and the lower the interest rates.

An important project is the development of a new Bankruptcy Law. The judiciary bankruptcy system and corporations' ability to recover need to be improved to preserve the firms value and provide a fast reallocation of resources in the economy. Currently, the bankruptcy process takes too long and creditors are hardly ever compensated. Creditors' agreements are a rigid and inflexible and the judicial system does not support informal ways of recovering corporations.[10]

[10] See Appendix B

Supervision and Capital Requirements

The BCB has been able to adapt several – previously less than effective – regulations and supervisory practices, to the 25 Basle Core Principles, which emphasized strict enforcement of rules on transparency and financial soundness. Since 1995, the BCB has assessed bank capital adequacy on the basis of a Basle-type risk-weighted ratio. In May 1997, minimum capital was increased from 8 to 10 percent; and in November 1997, the ratio was further raised to 11 percent. In Brazil, only tier-one shareholders' equity, plus revaluation reserves, counts towards meeting minimum capital requirements. Depending on the specific bank's capital profile, this condition actually makes Brazil's current capital adequacy ratio much tighter, equivalent to around 13-15 percent under the Basle rules. The capital requirements covering counterpart credit risks from banks' derivatives transactions are also more stringent than recommended by the Basle principles.

In parallel to rules on capital adequacy, other mechanisms have been created to enhance the supervisory capacity of the BCB. Banks have to submit quarterly consolidated accounts to the supervisory authority. There are still differences between accounting principles in Brazil and International Accounting Standards, which influence banks' reporting performance, such as reporting of tax credit and rules for the consolidation of certain types of subsidiaries. Regulations are being developed to ensure full conformity of banks' accounting practices with international standards, as well as to assist in the management of liquidity risk.

In 1998, the BCB adopted an important measure setting forth that financial institutions should present an implementation program for internal control systems in accordance with, and in some case more stringent, than the Basle core principles. Capital requirements to cover market risk, which includes both foreign exchange exposure and interest rate risk, were introduced in 2000. Also in 2000, the BCB created a new department to increase routine monitoring of individual banks on the basis of quantitative financial indicators (indirect supervision).

Progress has also been made in developing (i) new regulations on a forward-looking loan classification and provisioning system; and (ii) new prudential regulations for foreign exchange and market risk. The new loan classification system was integrated with the risk bureau.

The new regulation for loan classification and provisioning classifies loans according to borrower's ability to repay and places special emphasis on the payment status, the borrower's financial factors (e.g., cash flow guarantees, collateral) and the evaluation of the borrower by other banks in the BCB's credit risk bureau. It includes controls on the rescheduling of loans, which has been a weakness of the past system.

The BCB issued a regulation on July 1, 1999 dealing with foreign exchange risk as part of the efforts to upgrade capital regulation to take adequate account of market risk. This regulation mandates a progressively higher capital charge, as banks elect to take on larger foreign exchange positions. The foreign exchange position is defined to be the sum of the net on-balance sheet asset-liability exposure, the notional value of derivatives and the delta for option contracts. The BCB is also making progress towards putting in place an interest-rate regulation for the trading book that mandates an add-on capital charge based on a standardized interest-rate model. In many respects, the standardized model is similar to the approach used under the Market Risk Amendment to the Basle Capital Accord.

The BCB formally launched in December 1997 the Global Consolidated Inspection (GCI) program for the modernization of its supervision practices. The broad objectives of the program are to strengthen the BCB's supervisory practices, upgrade the skills of its human resources, and evolve a strategic vision for the future of the financial system. The GCI includes: examination of financial and non-financial activities on a consolidated basis; an assessment of controlled subsidiaries and affiliates, both local and foreign; and an inspection of branches abroad. The BCB expects that the program will permit a deeper understanding of the banks' lines of business, especially in the non-bank financial sector, and generally enhance its evaluation of the banks' internal procedures for the management of risks. The GCI includes specialized inspection teams that review information systems

and treasury and market risk. It has recently been expanded to include the publicly owned financial institutions.

An important initiative following the Real Plan was the creation of a mandatory, privately funded, deposit insurance scheme (Fundo Garantidor de Créditos) through which deposits are guaranteed up to BRL 20,000 (or around US$6,000 at mid-2002 exchange rate) for deposits and certain other types of financial assets. It is funded by a contribution of 0.025 percent levied on the monthly balances of insured accounts.

The Government has also been active in a microeconomic perspective to enhance the financial and capital markets with measures to increase savings and a more efficient intermediation. The main actions are listed in the appendix.

7. Concluding Remarks

The financial system in Brazil has adapted to developments in the macroeconomic environment and regulatory framework. Since the launching of the Real Plan, the Brazilian financial system has experienced a deep process of restructuring. It has evolved in three different areas. It has experienced the consolidation of the number of banks, reduced the presence of the public sector and increased the participation of foreign banks. The government has had a critical role in the process by intervening and, in some cases, closing weak institutions, first, to prevent the emergence of systemic crises and, second, to address the problem of official banks and their fiscal implications.

One important characteristic of the system has been that (a) the depositors base was preserved for financial assets denominated in domestic currency, and (b) the system buffered severe shocks. This fact is notable if one considers the high inflation prior to the Real Plan and, subsequently, the high volatility of interest rates or exchange rates in Brazil.

Events in Brazil have shown that a healthy and well-developed financial system is capable of adjusting rapidly to circumstances by offering appropriate instruments through

financial innovations that preserve the real value of assets. These instruments were framed to fill the needs of the financial system's customers, allowing intertemporal smoothing of consumption by households and expenditures by firms. The government, in turn, has had a fundamental role in providing the necessary mix of debt instruments for the financial system to design its products. This arrangement has benefited the government by enabling it to finance its debts domestically even in extremely turbulent periods.

Although financial institutions have been efficient in preserving the value of financial assets, they have been struggling to perform the role of intermediating savings for investment. Macro and microeconomic factors, as reflected in high bank spreads and low credit to the private sector, have been constraints for the financial sector to provide longer-term loans. As compared to the average of upper middle-income countries, the volume of credit to GDP has been relatively small in Brazil. Firms have relied on self-financing, or on long-term credits from official agencies.

A more stable macroeconomic environment and efforts at the microeconomic level have improved somewhat the functioning of the financial system. The volume of free, market-based credit has increased. Bank spreads, though still large, have narrowed recently. But, undoubtedly, much needs to be done to allow the financial system to fully play its intermediation role.

A fundamental point is to further the progress achieved so far to build an appropriate environment to enable the lengthening of maturities in the financial system, and attract domestic funds currently invested elsewhere, outside the domestic financial system, in less efficient way for improving the country's welfare. For a better functioning of the financial system, further work is required to achieve: (a) stable macroeconomic conditions to create a more predictable environment for the decision making of firms and households; (b) a financial system that intermediates funds efficiently; and (c) an institutional framework in which contracts are respected and rights preserved.

Improved investor risk perceptions would lead to a more stable and cheaper longer-term source of funds, causing credit to the private sector to increase. In any event, the expansion of bank credit to the private sector needs to be carried gradually, while appropriate safeguards to preserve the health of the system are being built. Having this objective in mind, the BCB has reinforced supervision and the regulatory framework with several actions. Since 1999, the BCB has also been engaged in taking measures to reduce banking spreads, especially those related to microeconomic factors. In addition, for a sustainable reduction in the costs of financing and more room to expand credit to the private sector, fiscal discipline needs to be preserved. A favorable shift in domestic and external investors' risk perceptions regarding the implementation of sound macroeconomic policies would result in lower risk premiums.

A reduction in the current constraints on the development of the financial system would foster economic growth. This will require persevering in the effort to preserve macroeconomic stability and to improve the microeconomic framework by building a sound prudential and institutional framework.

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Appendix

A. Recent Measures Adopted for Brazilian Financial Markets (See Ministry of Finance of Brazil, 2002)

Credit market

- New legislation to constitute finance companies for small business
- New credit instruments for agricultural sector to enhance liquidity and safety
- More flexibility in credit transfers from financial institutions to special securitization companies
- Investment funds for receivables
- Credit derivatives to hedge return rate
- Securitized operations and credit transfers were exempted from financial transaction tax (CPMF)

Capital market

- New corporate law that among other measures strengthened the minority shareholders rights, improved transparency and enhanced supervision
- Strengthening of the Brazilian Securities and Exchange Commission (CVM) by providing for more autonomy and fixed mandate to its Board
- Brazilian Depositary Receipts or certificate of deposit held by resident institution backed by shares of a foreign-based corporation
- New legislation that sets mutual funds with foreign resources to be invested in nascent businesses
- Stock exchange transactions were exempted from CPMF

Actions to deepen financial and capital markets

- Opening of accounts and transactions with banks exclusively through electronic means
- Measures to promote the broadening of banking correspondent network
- Pulverized sales of Petrobrás and Companhia Vale do Rio Doce shares
- Sales of National Treasury securities by internet
- Autonomous agents for securities' investment intermediation

B. Bankruptcy Legislation Reform

Aiming to aggregate alternatives and suggestions to reform the Brazilian bankruptcy system, since the second semester of last year, the Research Department of Central Bank of Brazil has been studying the Brazilian bankruptcy legislation and the proposals for its reform. The analysis began in September 2001 after some critical thoughts held with the help of Brazilian specialists gathered in a workshop, under the coordination of the Central Bank and the participation of the Ministry of Finance. Afterwards, the issue was also debated with national and foreign experts in an international seminar held in November 2001 at the Central Bank facilities.

This text aims to highlight the need of revision of the Brazilian bankruptcy system, which is based in the Decree-Law 7661, of June 21, 1945. The judiciary system of bankruptcy and companies' recovery in Brazil, besides being outmoded, presents some defects that make it difficult to reach a quick and efficient solution for the bankruptcy process, practically eliminating the possibility of recovery of companies facing problems and the preservation of their productive units.

An efficient bankruptcy and companies' recuperation system is considered fundamental to increase the productivity and the economy stability, reducing risks and costs of all economic agents. Thus, the reform of the bankruptcy legislation is one of the government priorities, in special Central Bank's, in order to increase the stability of the financial system, to reduce the banking risks and, as a consequence, to contribute to diminish the interest rate and the banking spread and to increase the credit offer.

A good bankruptcy law should arrange its rules and procedures to be compatible with the country economic and juridical organization, reflecting the values and priorities of its time. The current Brazilian bankruptcy system (Decree-Law 7661, of June 21, 1945) met properly the country when it was enacted. Today, due to the deep cultural and economic changes the country has passed through, together with several changes in the civil, labor and tributary legislations, the current bankruptcy system does not meet the Brazilian economy needs.

The bankruptcy processes in Brazil are excessively delayed and without adequate participation and supervision of the interested creditors, resulting in the deterioration of the failed company's assets and in big losses for the creditors. The companies' salvation and the preservation of the productive units are almost impracticable under our legal system. The only instrument with this goal (the arrangement) is very severe and has no flexibility to promote the companies' effective recovery. Besides, the tributary legislation rules in relation to the succession of the obligations of the commercial institutions, commercial funds and goods of companies facing problems, practically eliminate the possibility of their productive units sale, harming much more the creditors and turning companies' recovery even more difficult.

Since 1983 the Draft Bill 4376/93 is in course at the House of Representatives, proposed by the Executive Power, which regulates the “recovery and liquidation of legal entities and individual debtors carrying out economic activities”. The deputy Oswaldo Biolchi (PMDB/RS) was the relator of this project, which has already been approved by the Special Commission and should be submitted to the House Court (Global Agglutinative Sub-amendment after the Court Amendments to the Substitutive Adopted by the Special Commission, as of 6.6.2000).

The project modernizes the bankruptcy legislation, innovating many aspects, aiming to worth the productive companies and to maintain jobs. As a conception, without hurting the tradition and the Brazilian juridical organization, the project practically adopts a unitary system, similar to the one current in German law and in implementation in the European Union. The company facing financial problems, after having its situation recognized by the Judiciary Power, may have its economic viability analyzed through the presentation of a recovery plan. In the case the creditors accept this plan, the judge approves the judicial recovery process; otherwise, the bankrupt is determined.

There are many positive aspects of the new legislation to be approved in the House of Representatives. The main ones are the broadening and flexibility added to the judicial recovery process, by the inclusion of a great range of alternatives to face the economic and

financial difficulties of the debtor company. Another positive point of the new law is the priority that it gives to the sale of the assets of the bankrupt company, with unmistakable advantages to the whole society and to the creditors. The immediate selling of the productive units of the bankrupt is a target sought by the society, since it allows the use of the bankrupt's productive resources, maintaining the production and protecting jobs.

Despite these important improvements, on the economic hand, the Draft Bill 4376/93 does not properly solve some of the serious problems that constitute the core of the failure of the current Brazilian bankruptcy system. First, because it does not assure the participation and supervision of the creditors during the bankruptcy, which is mostly associated to the priority given to the fiscal and labour credits. Second, because it does not follow the international practice of stimulating the negotiations among the parts as a mean to the companies' recovery. Third, because it does not solve the difficulties to sell the assets of both bankrupt companies and companies having troubles, since the bureaucracy involved is still excessive and the value of the real estate and facilities continues to be depreciated due to the problem of obligations' succession.

For this reason, the Banco Central do Brasil recently presented a set of suggestions to amend the (Global Agglutinative Sub-amendment after the Court Amendments to the Substitutive Adopted by the Special Commission, of the Draft Bill 4376/93. Amongst the suggestions to the Draft Bill in course in the House of Representatives, one can highlight:

a) Extension also to bankruptcy of the limit of R$30,000 as a privilege to the labour credits in the judicial recovery, maintaining the fair protection to great part of the employees in the case of bankruptcy, but prohibiting high level executives and people linked to the bankrupt company owners from having the same privilege of being afforded before other creditors. Besides being a frequently mechanism used to result in collusions and frauds, the current unlimited priority given to labour credits is one of the main reasons for the distance between sundry creditors and the supervision of the bankruptcy process;

b) Prevision of formal approval of the judicial recovery plan by the creditors, through the creation of Creditors Committees and changes in the rules that direct the

judicial decision regarding the decree of the judicial recovery or bankruptcy, turning the judicial recovery into a transparent deal with the creditors, which is the interested part with the best conditions to evaluate the economic viability of the proposed recovery plan;

c) Creation of the extra-judicial recovery, allowing that agreements freely negotiated between the debtor and the creditors be approved by the Judicial Power; and

d) More specific rules and a larger range of options for the sale of the bankrupt company assets, besides the traditional auction, improving the necessary efficiency and agility for the sale.

Such changes are not the whole set of modifications that are necessary to give more efficiency to our bankruptcy process, and fiscal legislation must be altered subsequently, including the National Tributary Code (Law 5172/66), in discussion in Central Bank and in the Ministry of Finance.

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